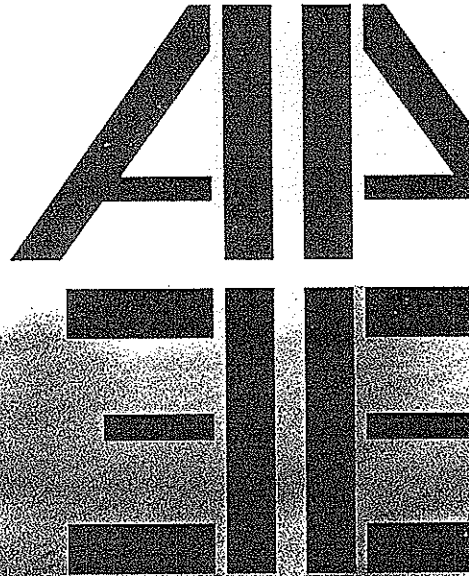


**EAAE**

European Association for Architectural Education  
Transaction on architectural education No 26



**WRITINGS  
IN ARCHITECTURAL  
EDUCATION**

**EAAE PRIZE 2003-2005**  
*sponsored by* **VELUX**

**WRITINGS IN ARCHITECTURAL EDUCATION**

How will the demands of the information society and "new knowledge" affect on the demand of relevant or necessary "know-how" in architectural education?

**EAAE PRIZE 2003-2005**

SPONSORED BY **VELUX**

## FOREWORD

The EAAE Prize 2003-2005 invited teachers from all schools of architecture in Europe and the ARCC member institutions in the USA and Canada to participate in the prize "Writings in Architectural Education." The challenging EAAE question for 2003-2005 was: How will the demands of the information society and "new knowledge" affect the demand for relevant or necessary "know how" in architectural education?

Architects of tomorrow have to navigate in the white-water of new knowledge and master the possibilities provided by the information society. The conflict with the established practise of passing on traditional skills. Future architects however cannot rely on tradition only. These are the challenges architectural educators have to equip students for. "Architectural education is undergoing substantial changes and has moved from the training of architects to an education in architecture. Architecture is directly influenced by today's information society. The educational requirements are no longer confined to the teaching of design, but include new building technologies, digital projecting, networking and selecting relevant knowledge – to name a few challenges." Says James F. Horan, EAAE president and Head of Dublin School of Architecture, Ireland.

This publication is the result of the EAAE Prize 2003-2005 sponsored by VELUX. 75 papers were submitted from 20 countries, which have all been evaluated by the jury: Per Olaf Fjeld (chairman), Peter MacKeith, Juhani Pallasmaa, Dagmar Richter and Alberto Pérez-Gómez.

The 11 authors of the 10 papers represented in this publication were invited to participate in a workshop in November 2004, which took place in Copenhagen at The Royal Danish Academy of Fine Arts, School of Architecture. The workshop opened for a discussion between the members of the jury and the other participants with the goal for the authors to improve upon their papers. After the very successful workshop the jury re-evaluated the 10 papers and on this basis found the four winners. EAAE hopes with this somewhat extensive procedure to have produced a note-worthy publication which can be a source of reference in the educational environment.

EAAE Prize 2003-2005 was sponsored by VELUX A/S. EAAE hereby wish to thank VELUX for sponsoring the prize and for the excellent co-operation during the course of the prize.

Ebbe Harder

The Organizing Committee, The EAAE-Council

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## On the Hither Side of Depth

A Pedagogy of Engagement

**RACHEL McCANN**

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*So the afternoon before it happened was like the other August afternoons. Frankie had hung around the kitchen, then toward dark she had gone out into the yard. The evening sky was pale and empty and the light from the kitchen window made a yellow square reflection in the darkening yard. The scuppernong arbor behind the house was purple and dark in the twilight. She walked slowly.*

*Frankie was too tall this summer to walk beneath the arbor as she had always done before; this year she had to hang around and pick from the edges like the grown people. She stared into the tangle of dark vines, and there was the smell of crushed scuppernongs and dust. Standing beside the arbor, with dark coming on, Frankie was afraid. She did not know what caused this fear, but she was afraid.<sup>1</sup>*

In *The Member of the Wedding*, Carson McCullers writes about the intimate experience of a place. The experience includes hopes, fears, time of day, movement, color, coming of age, space, enclosure, and memory. Through McCullers's description, we as readers are immediately drawn into the experience of the space, not into its shape or appearance. Space is the empty container of experience; it invites and enables experience. When we leave a place, we remember not the place itself, but our experience of it. Echoes, smells, sudden changes in temperature when we pass from light to shadow, heat radiating from a sunlit wall, enframed or hidden views, a feeling of mystery, all contribute to our experience of architecture, and they all stem from the depths of our embodiment.

When we forget embodiment in conceptualizing a place, we produce concretized ideas, geometric constructs, structural grids – the empty container. Such containers tend to be placeless, geometric, and abstract. In designing thus, we distance ourselves from experience and “make love like an intellectual,” a phrase coined by Milan Kundera in *The Book of Laughter and Forgetting* to describe a lack of immersion in one's immediate surroundings.<sup>2</sup> Just as Kundera notes the irony of detaching oneself during the most intimate of acts, it is ironic that architectural pedagogy stresses conceptual design methods to accommodate the intimate experience of inhabiting space.

At the beginning of the new millennium, the global culture is cobbled together – and simultaneously fragmented – by an unmanageable and rapidly growing body of technology, information, and disposable artifacts. Intimate experience, in which time seems to slow or stop altogether, is increasingly rare as the flow of information continually accelerates and the interconnected information web replaces the connection we “feel in our bones” with our material surroundings. Answers and consumer goods of all sorts are immediately and effortlessly at our fingertips. Authentic, troublesome human relationships seem less worth the effort as chat rooms offer up an inexhaustible supply of virtual companions. And a careful, well-thought-out framework of ethics? Who has time?

In this milieu, architectural pedagogy must confront a number of essential questions. How do we integrate the speed and evanescence of the information age while making architecture that is primarily material and spatial? How do we find a ground for meaningful and ethical engagement with the larger world, both socially and environmentally? In the seemingly

effortless world of consumerism, what is the role of difficulty and sustained effort? In an age where information reigns, how do we become comfortable with uncertainty? In a world whose most salient characteristic is rapid change, how do we find a stable foundation for architectural creation? In a fast-paced and visually dominated global environment, how do we understand and design for the intimate experience of a place? In order to engage with these questions, architectural pedagogy must turn to embodied experience.

This paper describes the problems inherent in architectural pedagogy stemming from the mind-body split brought about by the Enlightenment and exacerbated by the information age, and makes the case for a pedagogy based in corporeal engagement. It describes several important aspects of embodied experience, drawing on the work of French phenomenologist Maurice Merleau-Ponty, and suggests what questions an architectural education stressing corporeal engagement might begin to ask. It then looks particularly at the issue of architectural representation, focusing on the role of the computer and the special challenges and opportunities presented by our interconnected and incorporeal information society. The paper suggests reasons and methods for directing architectural pedagogy towards greater involvement in the larger world, using both conceptual and perceptual design tools in concert with an attitude of engagement.

#### DOMESTICATING THE SENSUOUS WORLD

The gravest problem facing the field of architecture is lack of engagement with the surrounding world. Following a general trend of the Enlightenment to design educational programs emphasizing logic, clarity, and dispassionate manipulation of ideas and elements, we have become insular. Although we are connected worldwide through the internet, we are increasingly insulated from our immediate surroundings as we bury ourselves within the virtual world it brings to our desktop. Yet the internet merely advances the longtime aim of modern technology to push away the corporeal world in favor of mental constructs that we can “get our heads around” and manage more easily. The modern era's corporeal disengagement is a long-developing consequence of western rationalism's mind-body split.

Vision and language have traditionally been the primary vehicles through which western culture seeks to domesticate the sensuous world, and architectural pedagogy has long been complicit in this effort, training architects to produce buildings to be read and interpreted rather than experienced. Neoclassical geometric and proportional methods of composition, modern references to machine imagery, and postmodern historical pastiche all work to produce architectural designs we can understand through the visual relationships of form or the linguistic relationships of image. Architecture is so often designed to present itself compositionally to the gaze, aided and encouraged by our image-rich technology. Exotic shapes and eye-catching symbolic elements encourage us to visually consume and conceptualize architecture before ever corporeally experiencing it. They are meant to be taken up as images – short-circuiting embodied experience and producing instant meaning – rather than taken in spatially and materially over time. The proliferation of information technology is both a symptom and a furtherance of the neglect of our own embodiment in pursuing

knowledge. Increasingly, our designs take form through scaleless and disembodied processes of computer modeling, and we draw inspiration from placeless and contextless images gathered haphazardly from the Internet.

The world's material and spatial qualities constantly escape and exceed the conceptual confines we construct, but with the body denied as a means for understanding, material presence is nonsensical excess. We need to understand, however, that every conceptual thought and rational instrument we possess springs from our embodiment. There are many compelling reasons for corporeal reengagement. Among them are systemic modern (and now postmodern) alienation from others and from the earth, the dissatisfying and passive consumerism of the information age, and widespread despoilment of the material environment due to our wish for mastery over it. Reengagement will require living and thinking in the body and allowing embodied experience to become a source of both knowledge and ethics.<sup>3</sup> An architecture that celebrates multi-sensory involvement, offers different amounts of detail to the view at different distances, and gives careful attention to evanescent qualities of light, shadow, and color stresses corporeal engagement and recognizes the primacy of our connections with the material world.

When used with the right questions in mind, even information technology contains within itself the seeds for collaboration with embodied knowledge. As we seek to broaden architectural pedagogy from the act of training architects to the wider and more societally integrated aim of teaching architecture, we have an opportunity to explore corporeal engagement not only as a basis for architectural analysis and design, but also as a model for an intimate and meaningful relationship with the larger world.

#### INTERSUBJECTIVITY AND EMBODIED PERCEPTION

French phenomenologist Maurice Merleau-Ponty offers a model for interacting with the world that subverts rational attempts to short-circuit the knowledge we gain by corporeal experience. He offers embodied perception as the basis for interaction wherein we, as open and receptive subjects, are continually transformed and create from within this constantly regenerative state. Within the fluxing web of interrelationships he calls the *Flesh*, we continually redefine ourselves by relating to the world around us. We do so on the basis of intercorporeity – that is, our material likeness to (and thus kinship with) the world. When thinking from the body, we act with mind and body in concert from a condition of immersion. In this model, we are open circuits, completed in sensory contact with the world, and this relationship is not one we can fully control.

In examining something as simple as a clay bowl, we can see the marks of its daily use and feel the intricacies of its textures. It reflects and absorbs light in the same way as the earth from which it was made. Yet we can never entirely know the bowl, never perceive it completely. From any angle, some of its surfaces are hidden from view, and the inner thickness of its walls is perceptually inaccessible.<sup>4</sup> Any thing or place with which we interact communicates the fundamental interconnectedness of things within the *Flesh* and the futility of attempting to understand any of them completely.

We engage the world through what Merleau-Ponty terms *carnal adherence*, our flesh bumping up against the flesh of the world through sensory and spatial interaction. In his reciprocal structuring of the world, our senses are complements to the sensuous: our eyes are the obverse of visual things as our hands and bodies are the obverse of material things. In addition, our moving bodies are complements to the spatiality of the world. Our embodied existence thus complements and responds to the fundamental qualities of architecture. Architecture is at its heart material and spatial, and we interact with it through embodied existence that intertwines movement, vision, touch, hearing, and temperature and pressure sensitivity. Carnal adherence takes place body to body, and not through the intellectual grasping of the mind. In opening ourselves to the sensuousness and spatiality of architecture, we can grasp the integrally experienced moment that rests beneath the mind-body split.

Perception, then, is an exchange between sentient and sensible, an unselfconscious "letting be," an openness to the world. We do not possess what we sense, but we "dispossess ... ourselves in favour of it."<sup>5</sup> Paradoxically, in losing ourselves we also find ourselves. The intersubjective experience and design of architecture is both self-exploration and exploration of the connective structure of the world, as we sense our relational existence within a larger whole of which we are an integral part. Perception in general, and perception of architecture in particular, is "flesh in touch with itself."<sup>6</sup> Thus, in experiencing and designing architecture with attention to embodied perception, we find a means for self-realization and a ground for ethical awareness based in empathetic connection.

In perceiving, the body becomes "a set of colors and surfaces inhabited by a touch, a vision."<sup>7</sup> This description calls to mind an experience of architecture wherein we become so lost in the colors or textures of a place that we become entangled with them, feeling their sharpness, smoothness, vastness, or indeterminacy in the depths of our being. We can feel the immovable density of a stone pillar. Our spirits expand in a windowed tower and contract in a confined, cellular space. Our bodies pick up the rhythm of a colonnade, and our eyes arrest and fix on a central focal point. In highly attuned perception, our body and mind go out to the perceived, which in turn seems to rush forward to meet us in our own interior. In this unselfconscious and seamless intercourse with the world, we exist in a state of intersubjectivity, where outward-directed relationship subsumes any tendency toward isolation. With an attitude of openness, "the mind goes out to wander" among perceived things in a non-appropriative state of immersion that contrasts with the instrumentalizing tendencies of modernism.

To Merleau-Ponty, phenomena must be experienced – "taken up... melded with the body and lived" – rather than imagined or "merely thought about," and our experiences take place for the most part precognitively, with us unselfconsciously immersed in a world to which we are sensibly attuned. Carol Bigwood refers to this immersion as a "silent, noncognitive, intimate bonding of our body" with the world, as when we become perceptually lost within the vast blueness of the sky. In her poetic description,

*[I] enter into a sensuous rhythm of existence that is already there and that is peculiar to the sky in its blue depths.... My living situation becomes one of blue. I can feel the blue's profundity and become immersed in it because of a bodily openness that lets the sky pulse through me and, in the same trembling stroke, lets my bodily sensing breathe life into the blue sky. [Now] the sky and myself are only abstract moments of a single incarnate communication, [a] bodily-skyly sensibility that tremulously runs through me and that is neither passively received nor actively willed....<sup>8</sup>*

In such experiences, we open to the perceived world to the point of losing our perceptual exteriority, and gain the possibility of being transformed by the encounter. In sensing, our boundaries become porous and indeterminate as odors inhabit our noses and lungs, sounds vibrate through the surfaces of our eardrums, and sights play upside down on our retinal walls. We exist in our fingertips as they touch architectural surfaces. We exist in our skin as it responds to temperature changes. We exist through our ears, sensing solidity, hollowness, vastness, and closeness through sound reflection. We exist in our kinaesthetic bodies, moving from one space to the next. We exist in our eyes as they take in the visual qualities of the space. In all these ways the mind goes out to wander among things, entwining our perceptive body with the world.

This focus on relationship inverts Descartes's categories of primary and secondary qualities. In Cartesian representation, form and outline are primary, constant qualities that we can grasp and hold conceptually, opposed to secondary qualities such as color, which are constantly in flux. But in a world whose most fundamental characteristic is its fluxing relationships, these "secondary" qualities become central. Intersubjective perception of architecture always exceeds intellection and vision, for architecture's sensuousness espouses our vision, touch, hearing, smell, skin senses, kinaesthetic and proprioceptive senses (movement). With this enveloping of our total sensing bodies, architecture encourages intersubjectivity at its most fundamental level, and it is imperative that we teach designers to create with embodiment in mind.

Architectural design techniques and tools, in helping designers identify functional requirements and adjacencies, organize structure, compose elevations, and orchestrate plan sequences, are essential to the design process, which must pull together many complex threads into an understandable whole. However, the designer easily loses sight of any qualities that are difficult to represent and manipulate using the given tools. Plans, sections, physical models, and perspectival virtual models excel in working with Descartes's primary qualities, giving us the means to manipulate solid and void, structural grids, dimensions and proportions, and anything measurable and exact, including the movement of sunlight. But they fail utterly in communicating the perception-dependent secondary qualities central to corporeal engagement. Thus it is important to retain these qualities in our intentions and imagination. In an architectural drawing, it is easy to represent the elements of a door – its sill, jamb, thickness, and swing – but virtually impossible to render the experience of walking through it. This common experience is indelibly etched within the body of every designer, but few choose to access this corporeal knowledge when pursuing a design.

Our students work in the unselfconscious state that characterizes intersubjectivity, becoming lost in the space of their emerging designs. For this reason, we must make sure that the emerging space takes the body and the sensuous world into account. Creating a plan or section drawing that includes neither the site nor the human body encourages designers to place and size a window based on graphic concerns such as geometric composition. Working in elevation expands this tendency exponentially, because even the representation of space is absent in its focus on wall surface as object. Computer modeling introduces the capability of viewing emerging designs perspectivaly, but with its virtually limitless depth it aggravates the tendency for the designer's mind to "go out to wander" no further than the confines of the screen and the illusive depth portrayed there.

We must teach our students to position themselves both temporally and spatially beyond the confines of the drawing sheet or computer screen. As designers, they need to develop an intimate relationship not with the world of the page or screen, nor even with the forms and surfaces portrayed on them, but with the potential corporeal and multi-sensory experience of the emerging spaces. What does the window's frame feel like to the hand? How does it catch the light? How does the light entering through the window heighten or dim our perception of the interior space of the room? How is the same window perceived from the outside, in relationship with the mass and voids of the larger façade, as one walks towards it? How do surrounding trees or buildings alter the experience? In short, what is the embodied context of the window? No amount of axonometry will answer these questions, and even perspectival representations will be unequal to the task without the designer imaginatively inhabiting the created space and focusing on intentions for the experience of spatial qualities. In asking these questions, the designer asks what the experience will be like for the future inhabitants of a design. Such engagement allows the architect to design for the intimate experience of space rather than simply providing its empty, aesthetic container. In *Phenomenology of Perception*, Merleau-Ponty writes of the infinitesimal lag between our experience of a thing and our conceptualization of it. Intersubjective experience thrives within this interval, which designers can draw out by avoiding easy intellectual consumption of their designs through vision or language. Elaine Scarry contends that language reaches its limits when confronted with the profoundly abstract or the profoundly concrete.<sup>9</sup> Architecture's immediacy stems from its profound concreteness, its conceptually inaccessible materiality and spatiality that we experience through moving and sensing. Secondary qualities of light and surface are often resistant to language in a way that shape and symbolism are not. Repetition and abstraction allow the architectural surface to become background to a foreground of light and shadow play, and strong material qualities encourage an intersubjective visual and tactile experience of the architecture rather than a conceptual summing up. If we teach with these aims in mind and let them augment traditional design concerns, we will have a pedagogy of engagement.

The inscrutable materiality and spatiality of architecture will always in some way exceed our intellectual grasp, and architectural pedagogy needs not only to acknowledge this excess,

but also to approach architectural design and analysis in ways that draw inspiration from it. Although any experience is ultimately processed and made accessible through the mediation of language, it is the nature of language to eclipse embodied experience. To counter this tendency, we can teach design from the perspective of engaged sensory interaction – taking into account what it might be like to move through a space while simultaneously seeing, smelling, hearing, and feeling it. We can undertake to draw out the lag before conceptualization by incorporating elements that escape naming, and we can offer designs whose aggressive materiality and complex, lived spaces invite our responsive sensory interaction.

#### ARCHITECTURAL DESIGN AS CARNAL ECHO

With the intersubjective emphasis on unselfconscious perception of the world, we might draw the conclusion that the task of architectural representation is perceptual realism. Nothing could be further from the truth, however, and it is important to realize that architectural representation is not meant to be a replica of the world, but a manifestation of embodied creativity.

In "Eye and Mind," Merleau-Ponty criticizes traditional western philosophy's idea of art as representation or index, a linguistic icon that calls to mind an idea of the represented thing. This formulation of art ascribes creative power only to the mind. He proposes instead an idea of painting as carnal echo, a formulation that locates this generative power in the active relationship between human beings and the surrounding world. In this formulation, a painter opens himself or herself up to the world through vision. Through the channel of vision, the world enters the painter, inhabits the painter's interior, and mixes with the painter's carnality – his or her embodied consciousness. In mixing with the painter until it is no longer clear which is the painter and which is the world, the things of the world achieve a sort of doubling, existing simultaneously in the world and "at the heart of vision." The resultant mixture of painter and world is then expressed, literally pushed out, back into the world as a physical artifact, a painting.<sup>10</sup> The painting's formative process makes it no sterile representation of things in the world, but progeny, the offspring of our carnal union with the world and the things in it. Painting as carnal echo ascribes generative power not to the mind, but to the body, the cauldron in which the part of the flesh that is the painter and a visible part outside the painter are combined.

Painting manifests our visual relationship with things in the world, an interactive process of beckoning and interrogation wherein things actively solicit our involvement. In a reciprocal arrangement, a mountain "makes itself seen" while the painter "interrogates it with his gaze." A painter channels, takes dictation, lives, as Merleau-Ponty puts it, "in fascination" and in profound lack that s/he seeks to remedy.<sup>11</sup> This interaction goes to the very heart of being, and painting is an exemplar of the ecstatic process in which, through opening ourselves to the world, we can transcend the traditional western subject-object division. We disappear as finite subjects and become instead a dynamic relationship, transforming the subject-object division into a subject-subject intertwining that is the fundamental characteristic of the flesh.

Vision is bound up in movement, and spatiality is at the heart of embodiment. It is here that creative activity as Merleau-Ponty envisions it connects with architectural design. Architectural design as carnal echo occurs when, through the channel of multi-sensory movement, the spatial and material world enters the body of the designer and mixes with his or her embodied consciousness. The progeny of this mixture is architectural design that manifests our embodied experience of space.

It is important to consider architectural expression not as an egoistic act, but as openness to the world, as a willingness to let the world give form to the space. Expression has been construed in Cartesianism as externalizing our own thoughts and talents, visiting our genius upon the world. Instead, designed space is the residue of the intertwining of the architect's carnality and the beckoning world, a cooperative effort between self and world. Rather than viewing architectural composition as a means of using rational and aesthetic principles to order the physical world, an intersubjective approach suggests architectural design as an intimate encounter.

As carnal echo, painting's power is based neither in language nor in representation. Instead of offering up indexical replicas of its subject matter, painting offers us a much deeper gift, allowing our gaze to be captivated by particular instances of seeing. In the same manner, architectural design broadens and extends our perception of things, layering an "imaginary texture" upon ordinary perception.<sup>12</sup> We go out to meet the thing, becoming present to the larger world in a way we never can by merely observing it.

The sensuous experience of space is so immediate and profound that it escapes the realm of language and remains embedded in parts of our bodies that lie outside the conscious mind, in our muscular and cellular memory. When we lose ourselves in spatial experience, we accumulate a deep knowledge that can find its way back out intuitively in architectural design. Many of the unexplainable creative leaps in design may come from this deep level of knowledge, aided by unexpected connections between seemingly unrelated elements of the flesh.

The architect's way of experiencing the world reveals connections or likenesses between things not readily apprehended by a mere observer, as when an abrupt turn in a stair recalls or suggests the qualities of a mountain path or a circuitous alley. As carnal echo, the act of design brings these relationships to light, as aspects of a spatial experience call forth recollections or imagination of other experiences that are seemingly unrelated. The promiscuity, or wanton intercourse, among perceived things leads us to recognize the resemblances between them, to posit analogies, to make the imaginative connections that energize architectural design. The visual references of postmodern architecture miss the point because they depend more on linguistic reference than on experiential likeness, which is so often independent of form and outline. Experiential likeness has more to do with secondary qualities or the potential for movement around an object or within a place, rather than with its form. For example, the twisting circulation paths of the Palace of Minos reiterate the

circuitous navigation through the mountainous Cretan landscape without restating the landscape's form.

Abstraction in architectural design, which may at first seem to divorce the expression of a thing or place from its likeness, can actually heighten experiential likeness as it reveals aspects that intertwine with corporeal experience. Such abstraction may involve color, texture, proportion, density, and spatial relationships. For instance, reflected light or the color of a wall surface may present likeness to the color of the sunset in a more powerful way than a mural representation of the sunset could achieve. It allows likeness to flourish with less interference from "realistic" representation.

Given something nameable to focus on, our tendency is always to allow symbolism to override raw perception, and corporeal engagement can be eroded by a rush to conceptualization in designs that rely too heavily on linguistic meaning. Alternatively, a designer can choose to express the qualities of embodied experience. For example, a designer may create a place that reproduces a Greek temple by copying its orders and entablature. Conversely, s/he may look beyond the temple's form to ferret out its experiential qualities and design a place that interacts with the moving sun in the same poetic way as the Parthenon's fluted columns.<sup>13</sup>

A designer can lay out a building as a regular or irregular geometric composition, or can consciously express the way geometry interacts with a moving body. S/he can set out a visual tableau or design a visual and spatial sequence that changes as we move alongside or towards it. S/he can display a building pictorially to the gaze or subvert the gaze with a series of oblique views, bent axes, and changing horizons. S/he can represent through visual icons or allow our imagination to exploit the tolerance of a thing's resemblance.

Even though it is the nature of language to eclipse corporeal experience, language is irrevocably present in the act of design. The world's intelligibility unfolds through language as our bodies encode and then decode the world's meaningful structure.<sup>14</sup> Meaning exists within the Flesh and within the body, and, although it must "detach itself" from the body to attach itself to language,<sup>15</sup> it stems from the Flesh in the same way as embodied experience. Language does not exist apart from the world, but derives from the world. It can never displace the things it purports to represent, but it too is a carnal echo that relates the body and the larger world.

Architectural equivalents to language include geometry, proportion, and formal composition. These are mental/mathematical constructions that allow us to avoid considering embodied experience in design by providing formulaic guidelines for laying out space and surfaces. Yet these conceptions relate to the embodied experience of qualities such as rhythm, regularity, and repetition in spatial intervals and enclosure.

We eventually do layer meaning, through language, onto every experience, but the deepest meaning of any intersubjective encounter is simply that we have encountered. And the encounter is never more evident than when we are asking questions of a material, a site, or a space through playful, open-ended exploration.

## ARCHITECTURAL REPRESENTATION, INFORMATION TECHNOLOGY, AND THE EXPERIENCE OF LIVED DEPTH

Merleau-Ponty discusses space through the phenomenon of lived depth. He criticizes perspective drawing, which positions us "always on the hither side of depth" and axonometric projection, which places us always "beyond it." From a static perspectival point of view, we see depth collapsed into nothingness, signaled by overlapped figures; axonometrically we see it from everywhere at once, signaled by floating objects that relate neither to us nor to each other. Lived depth stems from the thickness of space as played out in relationship with the "null point" of the body, the sum of which both perspective drawing and axonometric projection fail to acknowledge.<sup>16</sup>

In an intersubjective relationship with the world, the body is the origin point of spatiality, irrevocably altering space by its location and movement within it.<sup>17</sup> We are immersed in space, which plays out in relationship to our bodies, and few things reveal this relationship as thoroughly as architecture. In experiencing a place, the sensuous elements of architecture along with the space, air, and light between the perceiver and the perceived are active – charged, thick with relationship. Surfaces open up and forms realign as we move perceptively through space. In this relational structuring of space, form and outline – indeed, all static aspects of the architecture – become secondary, subsumed in a primary, enveloping spatial relationship that encloses and relates the individual elements of a place to the motile participant.

The architect sets out depth as a charged dimension in which our relationships to walls, columns, openings, and materials is ever-changing. Although vision and visibility are important aspects of experiencing architecture, they are swallowed up by the whole-body experiences of moving, smelling, hearing, and feeling, and vision itself is transformed by the changing perspectives experienced through motion.

Virtual modeling offers the possibility of walk-through simulations in which the designer can "move" perspectively through a sequence of spaces in an emerging design. This capability responds to the phenomenon of the "null point" of the body by continually shifting orientation and vanishing points as the virtual traveler moves along a linear path or pivots in space. Merleau-Ponty's frustration at being trapped on the "hither side" of depth seems to be answered here, as overlapped figures separate to allow us to approach and pass through. Movement is part of the experience, causing elements to realign and alter visually in relation to other elements.

The walk-through fails only in its inability to effectively portray secondary qualities and the charged thickness of the air. Computer modeling software depicts the measurable Cartesian primary qualities of form, edge, dimension, and distance. It offers palettes of color and texture, but their middling degree of realism offers too much detail for successful abstraction and too little for perceptual credibility. Nor can it simulate a multi-sensory, whole-body experience; instead the experience is entirely visual. Furthermore, the visual experience of the virtual walk-through lacks the breadth of focus and peripheral vision of the embodied eye.



As is the case with more traditional design tools, the capabilities of information technology are decidedly mixed. The computer projects images; it does not reflect conditions. It allows designers to use animation, yet fails to animate the space or experience. The computer can show important solid-void relationships of a building, but it can tell us nothing about the echo of footsteps. It can calculate structural loads, but it cannot represent the physically and psychologically cold feeling of a concrete column. It can map sunlight across the surfaces of a space over the course of a day or a year, but it cannot capture the accompanying subtle changes in color and warmth.

The shortcomings of digital representation arise from its tendencies towards short-circuiting. First, digital drawing short-circuits and reorients the embodied experience of drawing by hand. In hand drawing, the body inhabits the image as the hand and arm make the same movements to record a thing's image as they would make to caress the surface or outline of the thing itself. The processes of computer drawing, based in binary polarities and language operations, derive from a logic of object manipulation rather than engaged perception and thus are corporeally counter-intuitive, placing the body and the intellect at odds. Furthermore, in hand drawing the line has a certain tolerance as it is being drawn – it can wander slightly, thin or thicken, waver or straighten in response to the non-verbalized intentions of the designer. There is no such tolerance in a digitally drawn line that assumes a menu-derived thickness, lengthens itself to a numerically specified length, and snaps to a virtual grid. Second, the quickly assumed certainties of digital drawing and designing short-circuit the work of imagining embodied experience. Digital design's quick formal operations, its limited menu of surface textures, its prejudice towards replication of elements and dimensions, and its orientation around defined edges all provide shortcuts for the difficult and uncertain work of creative design. A student's digitally aided design too often gives an appearance of completion that surpasses its depth of thought. As architecture students attempt to get "complete" representation to do the work of imagination, they become spectators rather than participants in their own designs – disengaging and making love, as Kundera characterizes it, like an intellectual.

All forms of architectural representation have the potential to rush design ideas too quickly to certainty, but the embodied act of hand drawing more easily allows the percepts of the body to inform the concepts of the mind. Furthermore, these false certainties are not accidental tendencies of digital drawing, but are integral to its very nature. They parallel the fascination with quick acquisition and the increasing detachment from experience that characterize all aspects of the information age. Thus architectural pedagogy faces an important challenge to critically enframe the exciting possibilities of the digital age within a larger attitude of corporeal and social engagement.

Used with an attitude of engagement, the computer can become a useful tool for corporeally engaged design. Its changing perspectival views, more accurate in proportion than hand drawing, so easily generated and therefore so much likelier to inform a design, provide the empty container for the designer's imaginative inhabitation of the emerging space. Since a

designer can quickly make changes without laboriously reworking an entire drawing, virtual modeling encourages experimentation. Within a pedagogical framework of corporeal engagement, a student can critique the false certainties offered by digital modeling. As the designer's intentions and imagination are layered onto the space of the virtual model, it becomes one of a series of interrelated tools for understanding the experience of the space.

Movement through time and space is arguably our most fundamental mode of interaction with the world, and information technology has irrevocably changed our experience of it. The internet collapses time and space, bringing us images instantaneously from around the world. We are at once connected to and disconnected from everything as we google towards a piece of information as if rocketing through a wormhole. The internet imitates the flesh in an almost uncanny way. Like the flesh, it is an encompassing milieu in which everything is interconnected. Like the flesh, it offers continual opportunities for interaction. But it is incorporeal, overwhelmingly visual and language-based, and offers none of the proprioceptive or multi-sensory components of embodied experience.

The principal danger of information technology is its seductive tendency to stand in for embodied experience, and we must constantly teach our students to question and augment the information it presents. Instead of the near-instantaneous speed of accessing information via computer, we should ask our students to concern themselves with the infinitesimal lag between corporeal experience and its conceptualization. We should ask them to occupy themselves with duration rather than rapidity and to open themselves and their designs beyond the intellect. Instead of rushing towards certainty, we should encourage our students to dwell enthusiastically in the uncomfortable state of not knowing – long enough to confront and struggle with the problems of making their architecture sensuous, ethical, thoughtful, and humane.

In *The Member of the Wedding*, McCullers does not exhaustively describe the space of Frankie's experience, but rivets our attention to details that reveal her emotional and physical connections with it. Architectural design and representation can concern themselves with the details that reveal the active presence – the "beckoning" – of material, spatial, and sensuous architecture. Atmospheric, abstracted models can reveal the aggressive color and texture of a wall. Charcoal light studies allow the designer to stop and consider how the movement of light and shadow transforms a space. Gestural, tonal perspectives drawn from a model held close to the designer's eyes can portray the sensation of being surrounded by the space. Large-scale models can facilitate the designer's imaginative presence within its emerging spaces. Even full-scale joints or details can help a designer to better understand the corporeal presence of the design, while collages and watercolors can communicate the sometimes incomprehensible rush of sensation an architectural experience provides. These corporeally based design methods can provide a powerful critique of the way we as teachers and students give form to our ideas.



## CONCLUSION

In teaching architecture from the standpoint of sensory and spatial engagement, we provide architecture students with the means to explore the depths of their embodied selves as well as their relationship with the larger world. Moreover, we provide an ethical framework wherein we acknowledge, through our shared corporeity, a fundamental kinship with other people and things. Thus an architectural pedagogy in which we remember embodied experience suggests an ethic of care towards a world in which we see more self than other. It augments electronic connectivity with a connection that engages both mind and body.

Space experienced corporeally is dynamic and interactive in nature. In what may be his only description of architectural space, Merleau-Ponty writes of sunlight reflecting off tiles beneath the surface of a pool to sparkle and dance upon a nearby stand of cypress trees.<sup>18</sup> He describes the tiles on the pool floor shimmering through the medium of water and the water's constantly changing reflection of light onto the nearby trees. In this space, the play of light and shadow across surfaces takes precedence over the static shapes and proportional relationships of architectural form. The space is animated by trees with their highly textured surfaces and deep pockets of shadow, their position and proportion changing constantly in response to movements of sun and wind. Its reflective tiles are seen through a medium constantly in motion, as the shifting water directs sunlight and reflects images first one place and then another, breaking them into innumerable bits of light and color.

It is just this play of light against surface, along with a host of other secondary qualities, that enlivens any architectural space. Architectural design is a way of engaging the world that springs out of the architect's embodied fascination with color, light, movement, and space. In becoming absorbed within the creative act of designing architecture, we lose ourselves within the world's abundance, joining memories of past experiences with our intentions for the designed space's future inhabitation. Thus, in designing, we lose any sense of a distinct past, present, and future and experience vertical time – "simply being there in the world"<sup>19</sup> in a deeply integrated way.

Information technology has irrevocably changed the way we engage with the world, and with it the way we teach and design architecture. As educators, we must rise to the task of critiquing its imbalances through the corrective lens of embodied experience, and we must look beyond the narrow confines of information technology in setting our pedagogical direction. Positioned at the explosion of the information age, we are poised to develop an architectural pedagogy that draws from embodied experience. If we do so, our students can use technology effectively without being subsumed into its seductive, incorporeal world. Instead of "making love like an intellectual" and designing empty spatial containers, our students can design for an intimate experience of space that engages both body and mind.

## NOTES

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- 1 Condensed and arranged from Carson McCullers, *The Member of the Wedding*, Boston, Houghton Mifflin Co., 1946, 6-7.
- 2 Milan Kundera, *The Book of Laughter and Forgetting*, New York, A.A. Knopf, 1980, 6.
- 3 For a thorough discussion of the ethical implications of our carnal kinship with the material world, see David Abram, *The Spell of the Sensuous: Perception and Language in a More-than-Human World*, New York, Pantheon Books, 1996.
- 4 Abram, *Spell of the Sensuous*, 50-52.
- 5 Maurice Merleau-Ponty, *Themes from Lectures at the Collège de France, 1952-60*, 130 in Rudi Visker, "Raw Being and Violent Discourse: Foucault, Merleau-Ponty, and the (Dis-)Order of things," in Patrick Burke and Jan van der Veken, eds., *Merleau-Ponty In Contemporary Perspectives*, Dordrecht, Kluwer Academic Publishers, 1993, 120.
- 6 Martin C. Dillon, "Merleau-Ponty and the Reversibility Thesis," in Henry Pleetersma, ed., *Merleau-Ponty: Critical Essays*, Washington, D.C., University Press of America (and Center for Advanced Research in Phenomenology), 1989, 92.
- 7 Maurice Merleau-Ponty, *Phenomenology of Perception*, trans. Colin Smith, London, Routledge & Kegan Paul Ltd, 1962, 214, 207.
- 8 Carol Bigwood, "Renaturalizing the Body (with the Help of Merleau-Ponty)," *Hypatia* vol. 6 no. 3 (Fall 1991): 57, 61-2, drawing from Merleau-Ponty, *Phenomenology of Perception*, 211-6.
- 9 Elaine Scarry, *The Body In Pain: The Making and Unmaking of the World*, New York, Oxford University Press, 1985, "Introduction," esp. 3-4.
- 10 Maurice Merleau-Ponty, "Eye and Mind," in *The Merleau-Ponty Aesthetics Reader: Philosophy and Painting*, ed. Galen A. Johnson, Evanston, Ill., 1993, 132, 124, 128-9, 136.
- 11 Merleau-Ponty, "Eye and Mind," 129.
- 12 Merleau-Ponty, "Eye and Mind," 126. He also states this idea differently, writing that painting gives vision "the imaginary texture of the real" to clothe it within.
- 13 See David C. Lewis, "The Aesthetic Experience of Ambiguity: Athenian Acropolis," in Michael H. Mitias, ed., *Architecture and Civilization*, Rodopi Press, 1999.
- 14 Shaun Gallagher, "Introduction: The Hermeneutics of Ambiguity," in Thomas W. Busch and Shaun Gallagher, eds., *Merleau-Ponty, Hermeneutics, and Postmodernism*, Albany, State University of New York Press, 1992, 3-4.
- 15 Martin C. Dillon, "The Unconscious: Language and World," in Burke and van der Veken, 81.
- 16 Merleau-Ponty, "Eye and Mind," 133, 138.
- 17 Merleau-Ponty, "Eye and Mind," 138. We are also inhabited by space, our bodies filled with dynamic cellular processes and atoms made up almost exclusively of space.
- 18 Merleau-Ponty, "Eye and Mind," 142.
- 19 Galen A. Johnson, "Ontology and Painting: 'Eye and Mind,'" in Johnson, 51.