

An Artistic Praxis: Phenomenological colour and embodied experience

Doreen Balabanoff

Faculty of Design, OCAD University, Toronto, Canada

Email: dbalabanoff@faculty.ocadu.ca

Artistic knowledge resides within the works that a visual artist makes. . . Verbalising or discussing that knowledge is a separate exercise, often left to others, who make their own interpretations and investigations. In this introspective study of artworks spanning four decades, I look into and share insight about a practice in which knowledge about colour, light and spatial experience was developed and utilised. The process of action, reflection and new application of gained knowledge is understood as a praxis—a practice aimed at creating change in the world. The lessons learned are about human embodied experience of light, colour and darkness in spatial environments. The intent of the study (as of the artwork) is enhancement of our capacities for creating sensitive and enlivening space for human life experience and human flourishing, through understanding and use of colour and light as complex environmental phenomena affecting our mind/body/psyche. Four themes arose from reflecting upon the work. These are, in order of discussion: (1) Image and Emanation, (2) Resonance and Chord, (3) Threshold and Veil, and (4) Projection, Reflection, Light and Time. My findings include affirmation that a Goethian science (phenomenological, observational) approach to investigating and unconcealing tacit knowledge—embedded in an artistic praxis and its outcomes—has value for developing a deeper understanding of environmental colour and light. Such knowledge is important because environmental design has impact upon our bodies, our minds and our life experience. This study points to areas of import for further investigation: 1) a crucial aspect of environmental colour is its atmospheric, enveloping nature—we not only look at, but we are immersed in light, colour and darkness. . . that is, in coloured and modulated air and ambient light. . . and we *resonate* with its resonances; 2) the interwoven relations of light-colour-darkness create *emotive, embodied* connection between our body/psyche and architectural space; 3) sensitive colouring of the daylight entering our architectural spaces makes light's cycles and phenomenal expression in our buildings more noticeable and memorable, aiding in the recognition of *cosmic rhythms and connection to nature*.

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Introduction

What is the import of exploring the role of colour and light as experienced in environmental artworks? Is such a discussion meaningful? Is it more than a navel-gazing indulgence? I begin with a larger picture, to set the stage for the discussion of my artwork as related to environmental light, colour and darkness, which I see as influencing our wellbeing.

Henry Plummer, who has spent a long career considering natural light in architecture, reminds us: 'The ebb and flow of light in the sky affects every part of our lives, and literally makes possible life on Earth' [1]. In a previous short paper discussing light and colour in architecture, I noted that natural cycles of lightness/darkness have lost their former hold on the fundamental rhythms of our lives [2]. The ancient Celtic calendar, for example, is a reminder of our former strong connection to solar and lunar annual patterns, and the sites and rituals of a life organised in relation to solstices, equinoxes and 'cross-quarter' dates [3].

Twenty-first century urban dwellers live, increasingly, in a 'controllable' or 'out of control' world of artificial light. As James Turrell notes [4] we have, in our urban centres, cut ourselves off from cosmological understanding as part of our lived experience:

The sky is actually part of our neighbourhood and part of our visual sense of territory, which is wonderful. It was odd to me that we had to go to the moon, a lesser satellite, and then declare, "Now we're in space." I mean, we're in space now. But the fact is that we don't feel like we're in space now and that is a big effect. Because of fear of darkness we light the night sky and cut off access to inhabiting and living in this bigger territory. That is a profound psychological enclosure.

The field of chronobiology shows that light/darkness cycles govern our 'biological clocks', impacting the biological processes of all organisms [5]. A significant recent finding is that along with visual receptors that process environmental information, there is a non-visual receptor in the eye that connects directly to our integrated brain/hormonal system. . . which is implicated in this circadian systems regulation [6]. Studies show that spectral composition impacts biological timing as related to the solar cycle—short wave (blue to green) light disturbs our sleep cycles [7-8]. The CIE Technical Report on the First International Workshop on Circadian and Neurophysiological Photometry (which occurred in 2013) stated in its conclusions [9]:

Light has proven influences on our bodies, arguably as profound as diet or exercise. . . There is now a strong case to include 'light advice' in government sponsored health programmes. There is particularly a need to educate the public about the connection between circadian rhythms and exposure to light. Governments and public health bodies should be seen to endorse these important, established findings of science.

Current research points to the import of these light/dark cycles for our health/wellness, and to the negative impact of ubiquitous night light in our cities. Geography, too, impacts the character and quality of light/darkness we are immersed in, i.e., proximity to poles or equator, topography, vegetation, and micro-climate (e.g. [9-15]).

Why are these ideas presented in an introduction to the discussion of colour/light in my artistic practice? The answer lies in my interest, as an artist and architectural designer, in the notion of light (light/colour/darkness) as something that pervades our very existence, and therefore requires study from all possible perspectives and fields—particularly as we are only recently radically altering our relationship with light as it has existed for millennia. Here, I should be clear that I am already using the term light as including light, colour and darkness. The term light-colour-darkness will be used in the discussion below, in order to remember and to remind us constantly that we cannot separate these three elements of our worldly experience from one another—they form an interwoven fabric, a complex web

of effects and affects, relationships and meanings, that shift and change constantly as we move, perceive, breathe and live within our surrounding environment.

My own interest in light-colour-darkness within architectural space has evolved through a longstanding artistic and architectural design practice, and through over twenty years of experience teaching Environmental Design students about colour and light in the built environment. Here, I return to my own work with an interest in exploring how my own environmental colour knowledge evolved, in and through my own practice. This reflective self-study looks back to find the earliest work in which an environmental approach to colour surfaced in my practice, and follows the trajectory through to the present.

The discussion below is not a strictly chronological or comprehensive documentation of all of my work involving spatial colour and light. Nor can I fully show, in a few images, or describe in a few pages the richness of what I discovered. I have, through the processes of looking, ruminating and writing, isolated four themes that help to frame the thoughts, ideas and findings that are embedded in the work, and these are presented below with images and discussion. The four themes are: (1) Image and Emanation, (2) Resonance and Chord, (3) Threshold and Veil, and (4) Projection, Reflection, Light and Time.

In considering how one proceeds, as an artist, to gain knowledge, I find Alfred North Whitehead's comment on education for children insightful [16]:

In training a child to activity of thought, above all things we must beware of what I will call 'inert ideas'—that is to say, ideas that are merely received into the mind without being utilised, or tested, or thrown into fresh combinations.

This notion, of the iterative processes of learning, is intrinsic to the creative process. In the work described below, ideas are in a continual flow of testing, reutilisation, expansion and emergence. We can see the artistic process unfolding and doubling back on itself to consolidate lessons learned. The written explication of the artwork seeks to uncover the tacit knowledge that is embedded in this practice, in order to reveal what I know (and further, what I want to know) about colour-as-light in architecture. But the images also convey ideas, they cannot be left aside, though they cannot provide the first hand, full-scale experiential impact that the works are intrinsically about. To the attentive and attuned observer, there is much information about light and colour in environment, embedded in these images, that requires no explanation, only careful viewing. But being there physically is a different order of experience.

In my efforts to consider this work and to extract 'findings' that might be of use to others, I have found Martin Heidegger's notion of 'unconcealing' helpful. Heidegger, calling for a 'productive destruction' of prevalent philosophical understandings of 'Truth'—and a delving into the nature of 'Being'—challenged Plato's translation of the pre-Socratic term 'alētheia.' He proposed a different one [17]:

If we translate alētheia as 'unconcealment' rather than 'truth', this translation is not merely more literal; it contains the directive to rethink the ordinary concept of truth in the sense of the correctness of statements and to think it back to that still uncomprehended disclosedness and disclosure of beings (emphasis in original).

This conception of 'truth' as 'understandings revealed' is important to artistic ways of knowing, but is also identified in recent transdisciplinary theory and approaches [18-21].

As David Seamon has described, Johann Wolfgang von Goethe's way of science paved the way to phenomenological approaches. Goethe "sought a way to open himself to the things of nature, to listen to what they said, and to identify their core aspects and qualities" [22 p2]. In this searching we see 'unconcealment' as a fundamental methodology and attitude towards discovery and knowing. According to Goethe [22 p4], "Pure experience should lie at the root of all physical sciences. . . A theory can be judged worthy only when all experiences are brought under one roof and assist in their subsequent application."

Arthur Zajonc [23] points to Goethe's colour theory as an example of this approach:

. . . it is a question of fully recognizing the deeply structured, 'theory-laden' form of our seeing. An essential aspect of the scientific enterprise becomes, therefore, the conscious schooling of that capacity for ever deeper insights. Where then, is a theory of color to be found? Goethe's emphatic reply is in the proper seeing of archetypal instances of color. He sees the sunset and blue sky as, in this case, the rightful end point of investigation.

Goethe [24] tells us we need to observe with great attention, guarding against "impatience, precipitancy, self-satisfaction, rigidity, narrow thoughts, presumption, indolence, indiscretion, instability, and whatever else the entire retinue might be called." He warns:

There may be a difference between seeing and seeing. . . the eyes of the spirit have to work in perpetual living connexion with those of the body, for one otherwise risks seeing yet seeing past a thing.

And he highlights the notion that we could discover key understandings through this method [23]:

The highest thing would be to comprehend that everything factual is already theory. The blue of the heavens reveals to us the fundamental law of chromatics. One should only not seek anything behind the phenomena: they themselves are the theory.

For artistic practitioners, the description of Goethe's methodology rings true. . . for this is the nature of artistic practice. When Goethe says [25], "How difficult it is. . . to refrain from replacing the thing with its sign, to keep the object alive before us instead of killing it with the word," creative practitioners working in phenomenological ways recognise their *métier*.

Working with and from a similar understanding of the import of direct experience, the discussion below offers insight into what I have learned through an artistic *praxis*. . . how I have re-used and further developed this learning, and why I think it is currently worth sharing. '*Praxis*', as I understand it, is *practical, thoughtful doing*, and '*phronesis*' is a *wisdom guiding thoughtful use of practical knowledge, where values intersect knowledge*. These Aristotelian terms have been taken up by diverse fields and thinkers in recent times, see for example [26]. For my work, the discussion of these terms in the field of architecture by Alberto Pérez-Gómez [27] has been most helpful. And while numerous artists, designers and architects could be cited here, Robert Irwin [28], describing his own *praxis*, expresses succinctly the attitude and concept I have taken up in my own creative practice—a project that involves, as a focus of intentionality, the reimagination of our spatial, built environment:

The creator of phenomenal art does not seek simply to make aesthetically interesting objects, a process that merely reinforces the assumption that the aesthetic realm is a rarefied zone set

apart from the mundane environments of daily live. Rather, art must be integrated into the shared spaces of the built environment.

My works devoted to considering the spatial phenomena of light-colour-darkness span the past forty years. Some were independent installations, others were commissioned works—their production was sporadic. In the iterative push-and-pull of ideas, insights, techniques, philosophical ruminations and technical challenges embedded in one's creative process, the path may not seem straight but the knowledge continues to build. I am showing here a limited set of works, and discussing what was discovered from each of these 'artistic experiments' involving environmental colour.

I begin with a brief introduction contextualising this work within my educational background and knowledge base as a stained glass artist, as it is pertinent to understanding how this work fits into the fields of art and architecture. Four chapters showing and discussing work follow. In Theme One: *Image and Emanation* I present four works and discuss the implications/ideas they raise concerning light-colour-darkness as a *relationship between matter and atmosphere*. Theme Two: *Resonance and Chord* considers coloured light as *resonant and embodied energy* through discussion of three works. Theme Three: *Threshold and Veil* uses one example to discuss how colour-as-veil alters and enhances *seeing through* and the relationship between *inside and outside*. Theme Four: *Projection, Reflection, Light and Time* offers three works that represent architectural explorations of how aperture and surface play together to make the spatial phenomena and the cosmic rhythms of light visible and memorable. The conclusion seeks to consolidate insights from the work that might be useful for diverse applications and further investigations.

Background: education as a stained-glass artist

It is important to acknowledge that my interest in colour and light in architecture began in and through immersion in the architectural medium of stained glass, within a unique artistic milieu of people who worked with, cared about, and were deeply knowledgeable about this medium of colour, light and extraordinary material—its impact on architectural space, and therefore on the human psyche. A brief glimpse of the medium's historical trajectory that brings us to the time of my studies is offered here, to set the context.

As Patrick Reyntiens has noted, 'Stained glass is not so much a medieval craft, as a craft that was brought to perfection in the Middle Ages' [29]. Martin Kemp [30] tells us that literary sources dating from the fourth through sixth centuries speak of coloured decorative glass in the basilicas of Constantinople as well as in the churches of Northwestern Europe. First fragments of the *painted glass* form appear as early as the ninth century. The Prophet Windows in Augsburg Cathedral, circa 1065, are thought to be the oldest extant *in situ* painted stained glass windows.

From earliest times stained glass has been an architectural art. The development of glass as architectural medium continues today, though the term 'stained glass' is largely used to indicate historical works of leaded glass, or contemporary small craft production using traditional techniques, while the term 'architectural glass' is used for large-scale works that use diverse methods of production and work within a very different architectural setting, e.g., higher levels of internal light, large expanses of glass, and constant technological innovation and change [31-34].

I studied stained glass with the above-mentioned eminent British stained glass artist and author Patrick Reyntiens [35-36] and briefly with renowned German glass artist/designer Ludwig Schaffrath

[37-38]. The setting was Reyntiens' studio/school, Burleighfield House, near High Wycombe, in Buckinghamshire, England [39].

At the time (mid 1970's) this art form was moving through a revitalisation across the world. In Germany, the post-Bauhaus, post World War II revitalisation had spearheaded a radical new approach to re-filling the windows of war-ravaged historic churches. Secular regeneration was also required, and new glass artworks were created in hospitals, government buildings, etc. This work generally had a serious tone and used strong graphic image supported by the new 'opal' and 'opak' (milky and opaque) glass that the German industry developed for artists on request. Glass students around the world found this new approach and these new materials very compelling.

A new interest in the medium had begun in the late 19th century, as Art Nouveau, Arts and Crafts and Secessionist artists and architects in Europe and North America incorporated glass in their works, along with other 'applied arts,' with the aim of the 'gesamtkunstwerk' or 'total work of art' [40-43]. A significant Modernist influence developed at the Bauhaus, where Johannes Itten and Josef Albers and Paul Klee were involved in the 'glass-painting' studio [44-45]. German visionaries Bruno Taut and Paul Scheerbart had radically proposed use of coloured glass in diverse and large-scale architectural urban projects [46-47]. The emphasis on glass in the late nineteenth and early twentieth century, as a newly-industrialised material for architecture, fit well with modernist architectural developments focused on health, light, and fresh air. The use of large areas of clear glass led to the now familiar, largely white, airy interior, with high levels of daylight illumination. But light-as-colour also found a new tonality.

The post-war renewal of glass artwork within both religious and secular buildings across Europe had a strong connection to the arts, as many painters became involved in the medium. This development was part re-building of war-torn architectural fabric, part spiritual renewal, and part economic recovery¹.

In the United Kingdom, the mid-twentieth century ecclesiastical stained glass of Evie Hone (Ireland) and John Piper (England) took on a Cubist approach. Colouristically, their work built upon the earlier richly coloured Arts and Crafts movement work of William Morris and Sir Edward Burne-Jones and others—who had brought medieval richness of colour in stained glass back from the brink of extinction. Piper, Lawrence Lee and Reyntiens, among others, maintained a painterly style, but also experimented with alternative approaches/materials such as dalle-de-verre glass, making walls of coloured light. In France, painters Henri Matisse, Fernand Léger, Georges Braque, Marc Chagall and Alfred Manessier were also developing their own poetic understanding of strong imagery and colour field transposed to glass, using diverse contemporary experimental methods [33, 48].

In addition to their new glass industries, France, England and Germany had factories producing 'antique glass', that is, 'mouthblown glass' made by centuries-old processes. Saint-Gobain (France) and Glashütte Lamberts (Germany) remain in limited production today. This specialty glass has been used not only in the production (and repair) of stained glass windows, but in restoration, to maintain the full character of the light passing through the window. Mouthblown glass is an exquisite material with seemingly magical properties of light mediation—caused by layers, bubbles and striations that refract and texturise light coming through it, as well as causing the view through to shimmer with one's movement—making it richly resonant to the eye, whether as material in the window plane or as projected light hitting a surface.

¹While the glass industries in England, France and Germany were developing new kinds of glass to meet modernist aspirations (new structural and formal approaches, light, transparency, health and optimism), they also relied upon traditional craft to aid in post-war regeneration. See my editorial in *Leadline Magazine* (Balabanoff, 1994) discussing these developments.

The medium was still called ‘stained glass’ at the time of my studies, but the more all-encompassing term ‘architectural glass’ was coming into use because of developing and divergent methods of production and the larger scale and scope of work. As noted above, modernist approaches everywhere were beginning to transcend the traditional leaded glass methods (for example the use of sandblasting by Josef Albers, dalle-de-verre by Jean Gaudin, Fernand Léger, John Piper and Patrick Reyntiens, use of epoxy resins by Ceri Richards, experimental methods by Margarite Huré, etc.). Computerised processes have since opened up the field to much larger-scale work, with capacities of firing, bending, carving and laminating of large glass sheets, fuelling the diverse experimentation that goes on today. But in the 1970’s, the three largest distinct streams of development—British, French and German—provided many extraordinary examples of innovations in the medium that were still quite new and developing. In the years 1974-76, I travelled widely in these three countries, and saw firsthand, along with other students, many works that were widely discussed amongst a lively peer group of international stained glass artists.

My education with Reyntiens was studio-based. I was one of ten international students in my first year at his Burleighfield House studio, and then stayed on for another year to work as an assistant and fabricator of his commissioned works². Ludwig Schaffrath, then seen as the most exciting new artist in stained glass, with a global following, was invited to lead a four-week seminar at Burleighfield, with about twenty visiting students from diverse countries, at which I was an organisational assistant and participant.

Reyntiens and Schaffrath were preeminent artists and educators in the medium at the time, attracting international students from across the globe. Both had appeal as technical innovators. Both had artistic integrity and vision that was refreshing and exciting. They were as opposite as their clothing—Reyntiens wore white, Schaffrath black. Reyntiens was painterly and atmospheric in his work; Schaffrath graphically clear and precise in the extreme. Schaffrath taught that architectural glass and its leadlines could (metaphorically) reveal a building’s ‘bones and sinews’ and should be ‘architectural’ on the outside as well as from the inside. Reyntiens sought to make windows more like lungs, affording breathing and opening rather than binding. . . a release or a pause separate from the architecture. Schaffrath valued perfection. Reyntiens countered with one eyebrow raised, “ah, but you know, perfection is death. . .”

Reyntiens taught us to make leadlines gently wave, dance and disappear, favouring a colouristic complexity and an emotive expression. Schaffrath made the leadlines the subject matter, using immaculately drawn parallel lines with complex crossings and tensions—quiet in chromatic tone, but buzzing with linear energies. Reyntiens, steeped in history, philosophy and theology, favoured the deep understanding of ‘sedated light’—interior spatial darkness as connecting to deep memorative capacity and emotive experience. He juxtaposed the glowing richness of a sensitive colour palette with an artistic virtuosity in expressive use of black glass enamel, silver stain and acid-etching to modulate colour. His work was often playful and loose. He courted unusual effects, sonorous intensity and delightful delicacy. He wrote, in *The Beauty of Stained Glass*, of two major contrasting attitudes towards colour evident in stained glass work over the centuries—what he called colour as ‘drive to power’ and colour as ‘invitation to delight’ [29].

Considering colour, he believed that one must never judge the work in the process of cutting the glass and putting it up on the glass easel for viewing as each new piece that was added would alter the existing colours. Better to cut all the glass as quickly as possible—intuitively selecting it. Only then could one

²In Loudwater, near High Wycombe, approximately equidistant from London and Oxford.

critically consider it, as a unity, to see what required improvement/change—and then re-cutting could occur as needed.

Reyntiens taught us to search for personal meaning in our work. He taught me to value and to allow the subconscious to participate in my work, through a more playful, less directed/planned approach. He taught that neither decorative nor technical approaches had value in themselves. . . that the means should serve the actual goal of sentient expression in architectural space.

Schaffrath, a thoroughgoing modernist, worked to create/recreate a newly bright but sensitive interior spatial envelope. His graphic images wove within and across separate windows in sweeping lines. He used a range of ‘seedy’, ‘opal’ and ‘opak’ (the industry terms – ‘opak’ means a not-quite-opaque but dense translucent glass) – these materials held the light as architectural surface (inside and out). Schaffrath used the reflective properties of these glasses to make his images work both day and night³. The opacified surface formed a kind of surrogate paper that allowed his graphic, flowing leadlines to become the drawn image itself, on both interior and exterior of the building. He sought an expression of programmatic content (swimming pool, organ) visible from the exterior of the building. He played with optical properties of transparency, translucency and opacity, of sparkling lenses set within textural semi-sheer surfaces. Schaffrath and his fellow German glass designers/artists were in full collaboration with the German mouthblown glass factories, in developing new kinds of glass. They also had a strong relationship with their architects, so that the glass was designed as not only an integral part of the spatial and formal expression, but as a bold artistic partnership in which the glass artist was not a second thought or an ‘add on’ who potentially ruined the work for the architect.

The strong graphic expression prevalent at the time led to the use of muted and translucent colour, with only occasional accents of strong colour. Schaffrath argued that people had had enough colour thrown at them by advertising, and needed a rest from it. The new opal/opak glasses provided a more controlled ambient glow, but also created a very enclosed, even subdued space. The idea, then, of *opening* the view to outside (in a more natural context) was, to Schaffrath, something of a revelation. Larger windows at the ground floor level allowed a new play between inside/outside, considering the spatial dynamic of opaque ‘surface held’ and transparent/translucent ‘view through.’ This was afforded by experimentation with various new types of ‘seedy’ glass, (mouthblown, full of bubbles of varying possible densities), and multiple types of clear and opalised glasses of various textures. Schaffrath’s interest in inside/outside dynamics was passed on to his students as a key concept.

The disparate approaches Reyntiens and Schaffrath modelled were characteristically known as the ‘English method’ and the ‘German method’ (as they were called in the field). These terms applied to the actual way of making the stained glass window, but also to the overall production concepts.

The German method was designerly—one produced a design maquette or small-scale model, and it was ‘copied perfectly’ by master craftsmen in a glass studio/factory setting. Various studios had their own ‘stables’ of well-known artists. This tradition continues today in numerous fabrication studios in Germany.

The English approach was individualistic and artistic, that is, one developed the work in the process, as if working on a painting. Reyntiens suggested that one could only do the artwork once—and he preferred the actual finished window to the maquette as his final, personal statement. For Reyntiens, the maquette was not the end of the process—because it could neither account for the materiality of

³‘Opak’ is the term used by the industry for a particular type of mouthblown glass with an opaque layer of white glass fused with a clear or coloured transparent layer - the term ‘flashed’ glass also applies, referring to the multi-layering in one sheet. ‘Opal’ glass has a thinner layer of white so remains more transparent, or ‘milky.’

glass in architecture, nor the combination of fine-tuning and ‘happy accidents’ of creative hands-on work.

I mention all of this to point out the rich knowledge base that I entered into as a young artist, and that continues to be a part of what I know, and what I know how to do.

From immersion in this medium, I came to understand the window—the aperture—as image; as a veil between inside and outside; as a two-dimensional field of light and colour; as a membrane for the passage of projected and refracted light. Glass as colour, glass as texture, glass as altered light. . . glass as the ephemeral materiality of fenestration. . . these understandings give more layered meanings to spatial settings—to what we might describe as ‘illuminated space.’ Through immersion in this field, I came to see glass as a living and physical rather than an inert and immaterial entity—a threshold, a veil—a sensitive membrane rather than a mechanical, technical product. It could be softened, deepened, painted upon. Colour could be added or subtracted, it could be illuminated image rather than manufactured commodity.

I learned, through this rich education, considering ancient and contemporary work, in diverse cities and contexts, that the materiality of glass is part of architectural materiality. . . which is, of course, only a part of the rich materiality of the world. As an art form, architectural glass invites us to look at it, and yet reminds us of what is around it and beyond it. It is a richly responsive medium, with a quality of aliveness similar to water or air. This understanding of glass gave me a feeling for the dynamics of architectural space and form as they embody and transform ideas of inside and outside. Glass as light-colour in space and form, and even time, formed a primary impression within my tacit knowledge base. I had developed a deep appreciation of light’s richness in architecture, as both a material and immaterial possibility.

My education with Reyntiens and Schaffrath was brief, but significant. My further artistic education continued informally from a long line of artists and architects that I studied and experienced directly. The artists whose works have influenced me most are those that I see as capturing the intense relationship between viewer and viewed, in a sensitive and visceral way. It should be noted that I do not mean to privilege only looking with the eyes. The artists I find most interesting are those who seem to experience the world with an embodied sensibility. They include: Giotto, Giovanni Battista Tiepolo, Rembrandt van Rijn, Johannes Vermeer, Vincent van Gogh, Paul Cézanne, Henri Matisse, Claude Monet, Raoul Dufy, André Derain, Edgar Degas, Gustav Klimt, Josef Albers, László Moholy-Nagy, Mark Rothko, David Hockney, Georgia O’Keefe, Jack Chambers, Greg Curnoe, Larry Bell, Robert Irwin, Donald Judd, Dan Flavin, James Turrell. These are all artists who understand that colour and light are interwoven, for whom the play of matter and ether, and colour, light and darkness is present and important, as something felt, something to be deeply explored.

Within architecture, I have been moved by sacred architecture and sacred sites, from cathedrals to standing stones, from Antonio Gaudi’s Sagrada Familia to Le Corbusier’s Ronchamp chapel and Firminy church—and by buildings that felt like sacred sites, such as Louis Kahn’s Salk Institute to Santiago Calatrava’s Milwaukee Art Museum. The relationship to light is strongly present in these works, as I have seen and experienced on site, in person; and they reside in my working DNA as an artist/architect influencing what I look at, what I consider, what I value and what I hope for in my ongoing work.

In the following pages the presentation and discussion of the work proceeds, with the four themes. They are, again:

Theme one – Image and Emanation: *light-colour-darkness as matter and atmosphere*

Theme two – Resonance and Chord: *coloured light as resonant embodied energy*

Theme three – Threshold and Veil: *material/immaterial light-colour-darkness and seeing-through*

Theme four – Projection, Reflection, Light and Time: *aperture and surface make light and cosmic rhythms visible*

Theme one – Image and Emanation: *light-colour-darkness as matter and atmosphere (four projects)*

1. *Ascent Towards the Meaning of Light (1977)*

In the watercolour triptych *Ascent Towards the Meaning of Light* (Figure 1), light is both image and emanation—a figurative/landscape presence and an environmental atmosphere. The works were created while I was travelling in Italy between terms at the Reyntiens studio. The images referenced personal experiences of (from left to right): (1) the ubiquitous soft hazy light and terraced hills of much of the countryside, (2) the countryside of Umbria and Tuscany, and (3) the Italian coast near Paestum. They also related to the many paintings and frescoes I witnessed across the country, showing similar experiences of emotionally rich qualities of atmospheric light/colour. This work depicted an expanded (embodied) sense of time and of place that seems at once immediate and ancient.

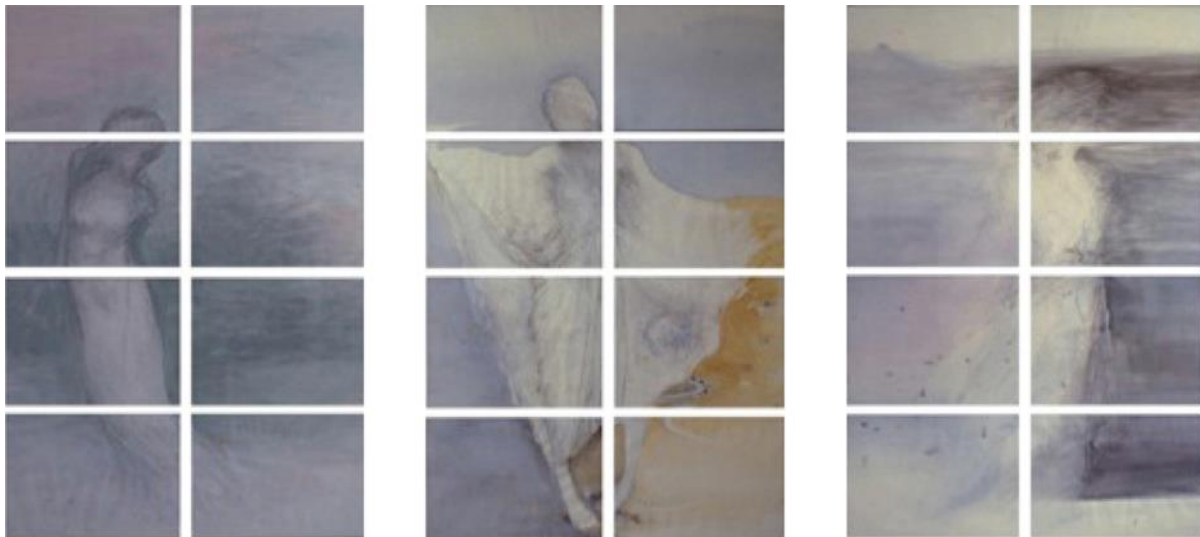


Figure 1: *Ascent Towards the Meaning of Light*, 3 paintings, watercolour on paper, each 5' × 7'.

The surrounding landscapes and atmospheres I discovered in Italy engaged me in haptic and emotive responses—through the paintings I captured some sense of this embodied, multi-sensory, spatial experience. The body is fully implicated. This may seem obvious, as it is the ostensible subject matter; but I see the true subject matter here as the oneness of the body/psyche with surrounding environment. The colours reference what it feels like to be immersed in a specific landscape. . .whether the mystical blue-green hills, the olive green and soft gold of Umbria or the pale cerulean shoreline sky. Yet there is also a sense of universal experience, as if seen through the eyes of many. . .as if we have seen/felt it before, ourselves, or seen it frozen in time for us by other artists, across centuries.

The aluminium frames I designed for exhibition purposes (Figure 2) brought the movement of the viewer into the atmospheric perceptual experience. The air spaces between the images—along with the ephemeral nature of the silver material—heighten the sense that the figures/images are floating and ethereal. But further, the reflective surfaces shimmer when the viewer moves, making the viewing itself kinetically physical.

This work suggested to me that experience of light is both universal and specific to place and time. This paradox continues to intrigue me and to motivate my work.



Figure 2: Ascent Towards the Meaning of Light, central panel with aluminium frame.

2. *Light Constructions (1982)*

Image and atmosphere seem to be merging in *Light Constructions* (Figure 3), a triptych created for exhibition, re-using the aluminium frames from the *Ascent* triptych. Sheets of mouthblown glass were inserted in the upper and lower sections, while the middle area was left open/empty. A light tube was attached onto the central vertical axis of each frame. Each was of a different spectral composition—all easily available commercially and in common usage. From left to right, the tubes were: a ‘UV grow light,’ a ‘warm fluorescent’ and a ‘full-spectrum fluorescent’ (I have no scientific data on their spectral composition—these were fluorescent tubes readily available to the public).

Here the glass (filling the upper and lower terrain of the frames physically) and the light (spreading across the large empty mid-section ephemerally) worked together with the aluminium frame to explore atmospheric image, in a play between materiality and immateriality, substance and air, matter and energy. Most remarkable, in the gallery setting, was the impression given by the light in the mid-section. Viewers were seen testing whether there was anything there with their hands. The ambient light within the space bathed the viewers and the surfaces with three distinctive resonances. But only astute and interested viewers would have noticed these. Psycho-physiological impacts of these different ambient sources were not much considered, by either myself or gallery-goers. I had, however rejected the use of an aesthetically interesting UV ‘black light’ as detrimental to the health of the eye upon prolonged direct viewing. I was simply using these lights as coloured atmospheric ‘paints’ or immaterial sheets of material.

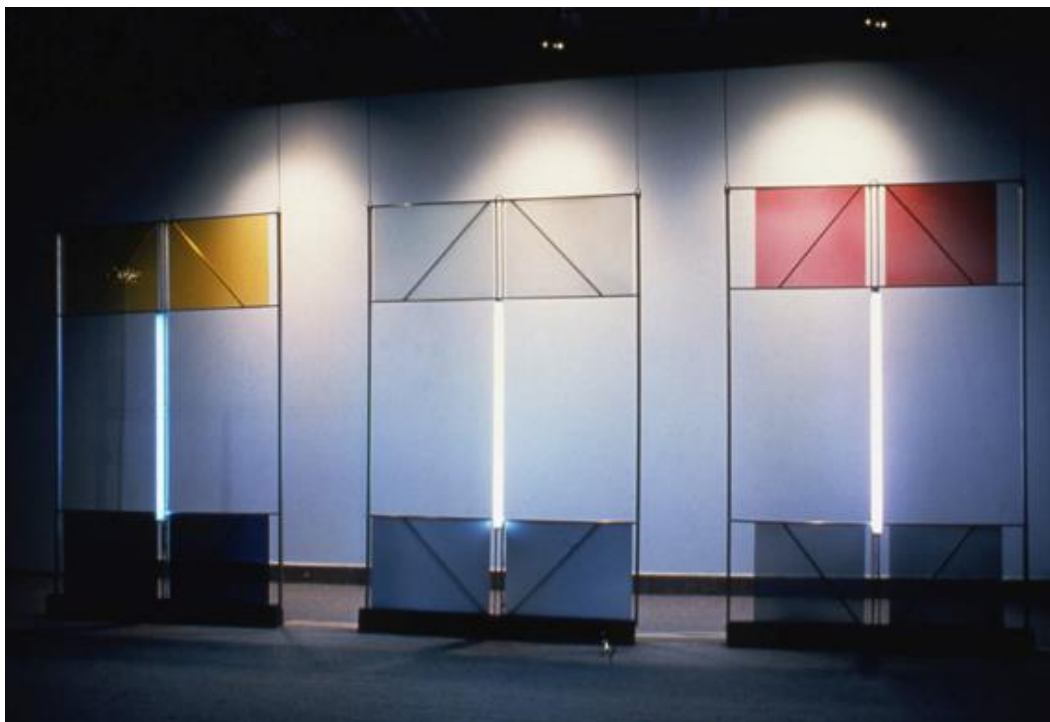


Figure 3: *Light Constructions*, Art Gallery of Hamilton, Ontario, Canada. Aluminium frames, mouthblown glass, fluorescent tubes.

3. *Stations of the Cross (2000)*

In this and the following project we see a very different approach to creating images composed of light and colour. Here, colour as material is distilled into colour as light—using shifting rectangles of various colours to represent specific persons, meanings and events.

Stations of the Cross (Figure 4), was a commissioned work, designed for a small chapel within St. Joseph's Health Centre, Guelph, Ontario, Canada. These well-known episodic moments in the crucifixion journey of Christ are usually depicted using figurative representation. The commissioning nuns sought to keep the chapel ecumenical, but still wanted the Stations to be there unobtrusively. Hence the narrative was told using only light-colour-darkness as image and metaphor.

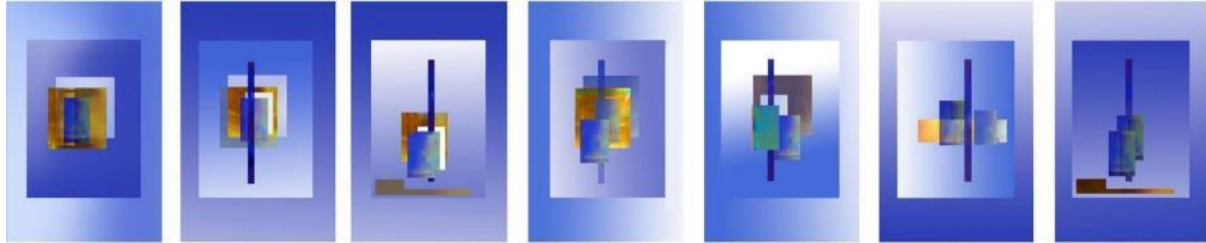


Figure 4a: Designs for the first six Stations (each 14" × 21")—maquette size each 8.5" × 11"); from left to right: (1) Christ is condemned to death, (2) He takes up the cross, (3) He stumbles, (4) He meets his mother, (5) He is helped by Simon, (6) Veronica wipes his brow and (7) He stumbles for the second time.

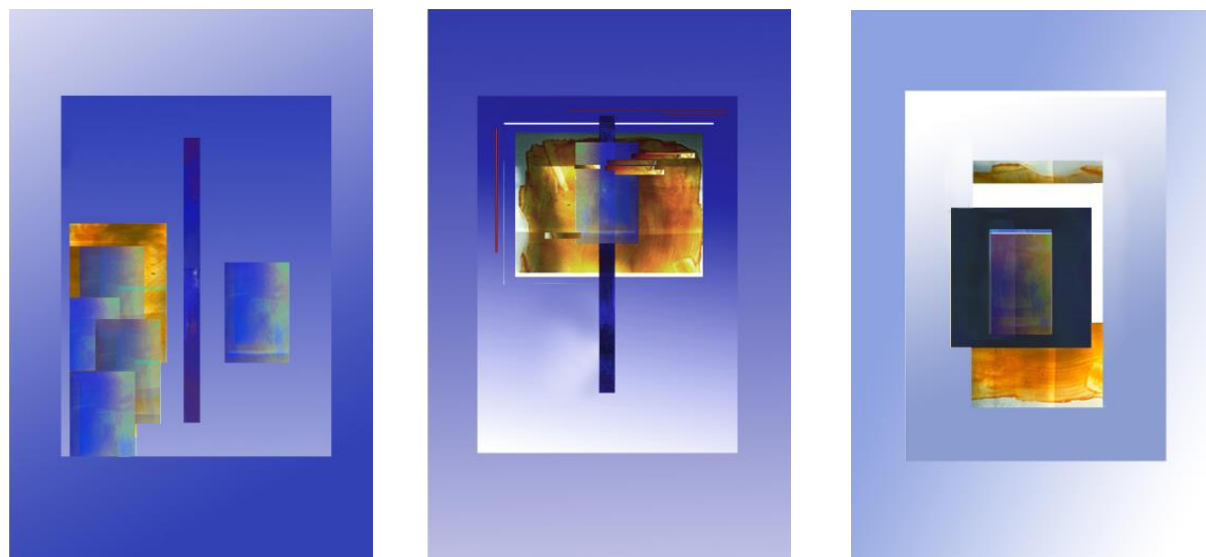


Figure 4b: Station 8 Christ Speaks to the Women of Jerusalem (left), Station 11 Crucifixion (middle) and Station 14 Entombment (right).

In presenting my designs to a small group of the Sisters of St. Joseph, I witnessed that they did indeed readily understand and appreciate the meaning of these fourteen images (though there were no figures, words, or crosses used). This was an affirmation that colour-light-darkness could be used as a most basic formal language in its own right, and that through this language, one could create image and atmosphere that spoke clearly, were comprehensible directly to the human mind/body, and were emotionally impactful.

The use of gradation in these works provided a key means of visually creating (in two-dimensional representation) 'emanation', that sensibility of 'radiation' given off by something that gives it an aura of significance. Ascending and descending gradations in the framed 'grounds' often oppose each other, composing a narrative of duality: the opening to light from above that we often associate with fine weather, infinity and promise; and the descent into darkness more often associated with melancholy, impending stormy weather or nightfall. Of all the hues, blue is a colour unlike any other in that it holds onto its identity—its 'blueness'—from palest tints to deepest shades. The gradations from light blue to white (Figure 4b) evoke qualities of air, a floating, or going out into space as light, unbound from earth

(spirit-like)—but from white to dark blue they project connotations of going deeper into the night, into the uncertain space of darkness. In the Crucifixion panel, the pressing darkness is from above.



Figure 4c: Station 11 Crucifixion Panel executed in glass.

The opalised flatness, that is, the non-transparency of these panels provides a contemplative stillness upon which the activity of the story plays out. This stillness is countered by the gold colour that represents spirit—the golden brushmarks engage attention, and depict both spiritual and physical energy and movement. Small elements of turquoise and areas where the blue becomes infused with the

gold provide shifts of resonance (meaning). Similarly, the use of an almost black vertical blue strip representing the cross, and the red used only in the crucifixion panel add not only graphic but emotive meaning. Here the colour evokes the feeling of weight and the energy of pain, violence and heightened emotion.

In situ, the panels fill openings in opposite chapel walls that open on spaces with only indirect natural light. The opal glass serves to screen the interior sanctuary space from the movements outside. At the same time it augments the minimal light available by holding light within itself, creating a gently glowing image and emanation on two sides of the chapel.

4. *Openings (2001)*

The *Openings* series (Figure 5) are experimental works for exhibition. Each panel is composed of two sheets of glass—a float glass sheet with ‘silver stain’ (the rich gold colour) kiln-fired into the glass, and a pure ultramarine blue mouthblown glass (acid-etched to clear in areas). The two layers of glass separated by airspace hold images that shift in relation to one another as the viewer moves, *creating a kinaesthetic experience* of lightness and darkness, movement and liquidity, opening and closing. As the layers of images shift, the colour relationships also are modified. The blue becomes green or brown; the gold is subsumed or becomes pure again.

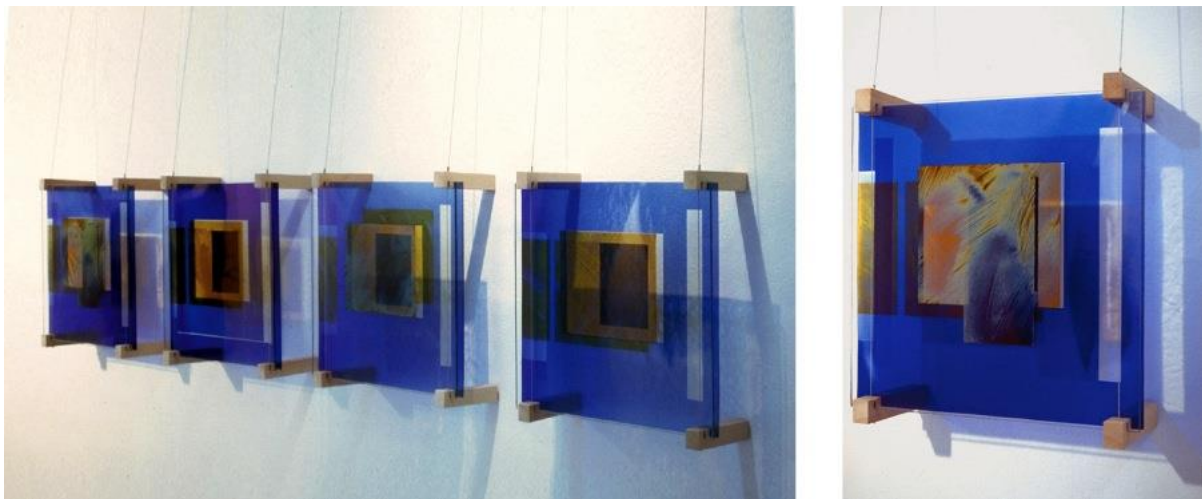


Figure 5: *Openings*, float glass with silver stain and mouthblown glass, acid etched, each 15" x 15".

The lighting on the wall behind, and any surface light also contributes to the colour activity. As can be seen in Figure 5 on the left, the transparent gold colour is the primary effect gained from the silver staining (a process of painting and firing silver nitrate onto the glass). But there is also an opaque effect (right image, Figure 5) that is known as a ‘silvering’ effect—when seen with surface light hitting the glass (as opposed to light through) the silver stain loses its golden appearance and takes on an opalised turquoise haze, which comes and goes with lighting and angle of viewing.

The overarching theme is one of light and darkness, opening and closing, relationship and layering. The two opposite hues register as psychic forces, both contrasting and merging/blending. They seem to represent our experienced relationship to light, darkness, openings and juxtapositions in the space/time of our built environs. Though environmental effects of such gallery wall works are difficult to show in photographs, we can see the ways in which this work uses a delicate hanging system that sets the two sheets of material apart, and allows projection/reflection of ambient and directed light to create a

backdrop of projected image-emanation-shadow on the wall behind. With natural light included in the ambient conditions, this projection factor can be significantly enhanced (Figure 6).

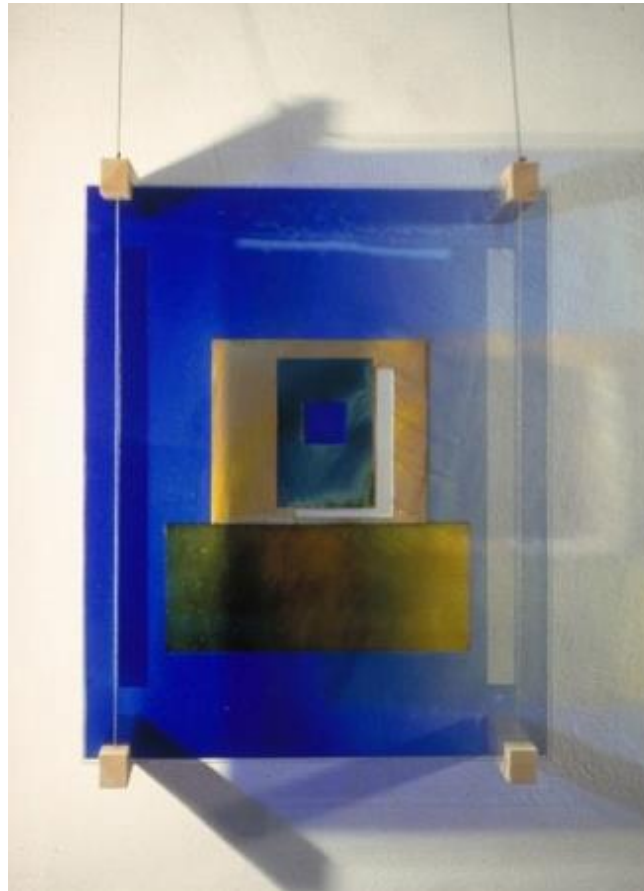


Figure 6: Openings 1, float glass with silver stain and mouthblown glass, acid etched, 16" × 24".

Theme two – Resonance and Chord: coloured light as resonant embodied energy (three projects)

1. *Swimming Pool (1980)*

The concept maquette *Swimming Pool Colour Chords* (Figures 7 and 8) embodies some of my earliest ideas for developing spatial experience of colour/light as a shift of resonance in architectural environment. It was not actualised in the real world, yet it still, over many years, remains an important concept in my imagination. This proposal was my entry for an art in architecture ideas competition. The image is a simple one, but many imagined ideas are embedded within it: the mouthblown glass creating its sensuous light projections and reflections on the floor, pool, ceiling, and space; the shimmering and morphing reflections and colours on and in the water. I had a compelling vision of diving into this liquid colour, dispersing it into rippling and rhythmic waves moving across the water and around the figures. . .and coming up through the colours. . .seeing them from below and above the surface.

A sense of the body is, as noted earlier, present in my works. . .but this is a body fully converted now into light, energy, and colour. The coloured presences hover, apparition-like, ephemeral, disappearing into air or water and reappearing as one moves. I composed, for this work, a piece of piano music and

recorded it (influenced, perhaps, by the work of Philip Glass, seen/heard at the Museum of Modern Art in Oxford, 1975). The music completed the contemplative, immersive spell I wanted to cast with this work. I still dream of this pool.



Figure 7: Swimming Pool, Toronto (D Balabanoff).

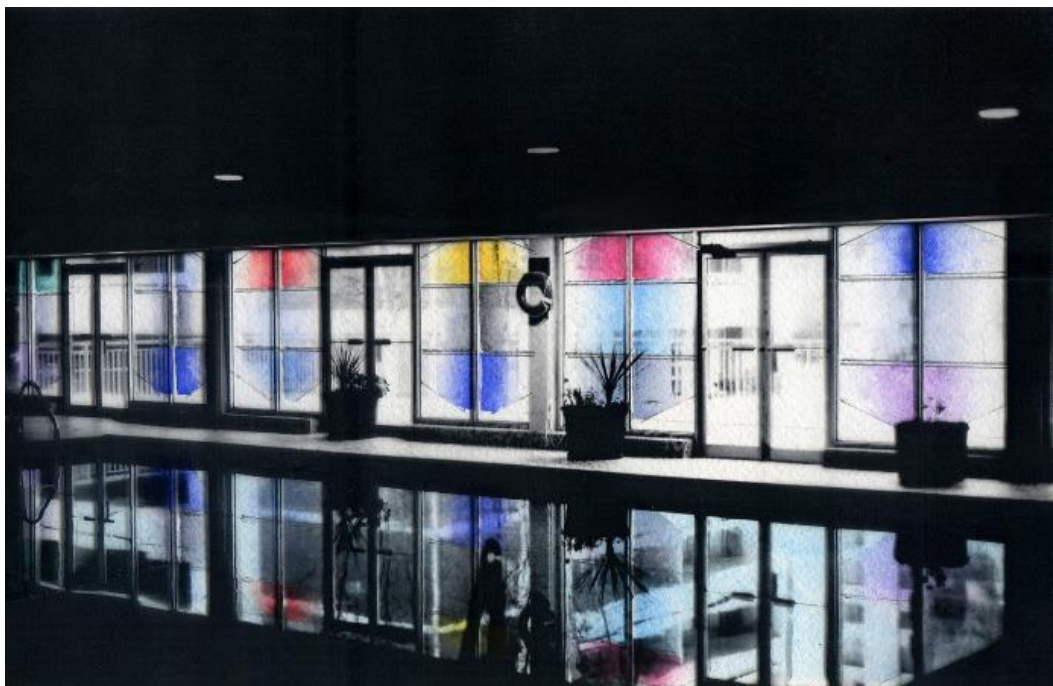


Figure 8: Swimming Pool Colour Chords maquette, watercolour and acetate film.

In this embodied vision, ‘resonance’ is not something sonorous and deep, but rather offers delight and playfulness. Yet this is not enough of a description of the full range of the resonance here—there is also calm, radiance, energy, gentleness, and aliveness. My point is that ‘resonance’ is not simple, but

has the richness of all embodied experience. It is multifarious, and cannot be rendered down to one factor or another. We could call it invisible, but it is everywhere present.

This work was one of my first forays into the ‘colour chord’ concept. The recorded piano music I composed was as simple and tonal and harmonic as the coloured images. I imagined it as playing within the space. It is interesting to reflect upon that impulse to build upon the visual with the aural. Many years later I have come to appreciate the synaesthetic nature of that desire to ‘flesh out’ the experience with more than the visual aspect.

Those who know glass well would bring their own understanding to the viewing of this image, knowing that the environmental work in situ would be much more ephemeral in reality than it is on paper, and yet far more compelling as well. The colour/light images would blend into the background. They would shift as one moved. . .as swimmers dove or splashed or rhythmically did laps. . .and as other elements moved/changed outside. In the winter the colours would be brighter, standing out against snow and stark landscape; in the summer they would blend into and simultaneously modify the green environment outside. The complexity of what would be happening here. . .to light, colour, atmosphere, as experienced by those using the space (the projection, reflection, refraction, view through), is not really graspable in one image. Without being in this place in real space-time. . .without observing it over many days and seasons and years, its complexity is invisible.

The ‘colour chords’ here augment the existential envelope of this space and give it a less mechanical presence. . .they make manifest a resonant and embodied energy occupying the space. In doing so they utilise a rich assortment of environmental partners, including:

- *the movement of bathers, both in and out of the water (inside)*
- *the reflective (and often active) water (inside)*
- *the ambient (and often projective) sunlight (inside)*
- *the surrounding landscape of the parkland (outside)*
- *people, dogs, trees, clouds, sun and moon (outside)*

These all contribute to the richness of the embodied experience of space/place I imagine here.

2. Colour Chord Watercolours (1980)

In late 1979 I began a series of paintings while living on the Spanish coast near Alicante (Figures 9-11). These large watercolours were a response (again) to places, atmospheres, resonances I saw and experienced (new landscapes and experiences of art and architecture). The felt substance conveying my response was the physically tangible paint: sometimes floating on the paper, sometimes deeply scrubbed into it. At the same time, each painting houses a ‘subject’ that seems more like a ‘presence.’ Hovering between image and emanation, this image is a ‘chord’ of three colours working together. The choice of colours is not rationalised, it is intuitive. . .what feels right, what is remembered, must be the criteria. This is the finding of a resonance, and it is a relationship not only between the colours as a ‘chord’, but between myself and the colours.

Each *Colour Chord* (Figure 10) has some kind of balancing, harmonic embodied energy—distinct in character, mood, and intensity. As in the *Ascent* triptych (Figure 1), the ‘figures’ are in suspension, the paper acting as the ‘air.’ Though they may seem fully abstract, these works have experience of place/light/colour embedded within them. . .Moorish tiles seen at the Alhambra; the remarkable coastal sunsets at Alicante caused by a particular geography. . .and so on. . .

A delicate pencil line delineates the colour areas, which seem to emanate from the centre. The vibrational aliveness and outward dissipation of these almost humming/vibrating works provide a

sensation of light itself. This sensuous light is also a felt phenomenon, it has a resonant relationship with the body. Sometimes the resonance is not of light but of darkness. Always colour is an intrinsic part of this darkness or light.

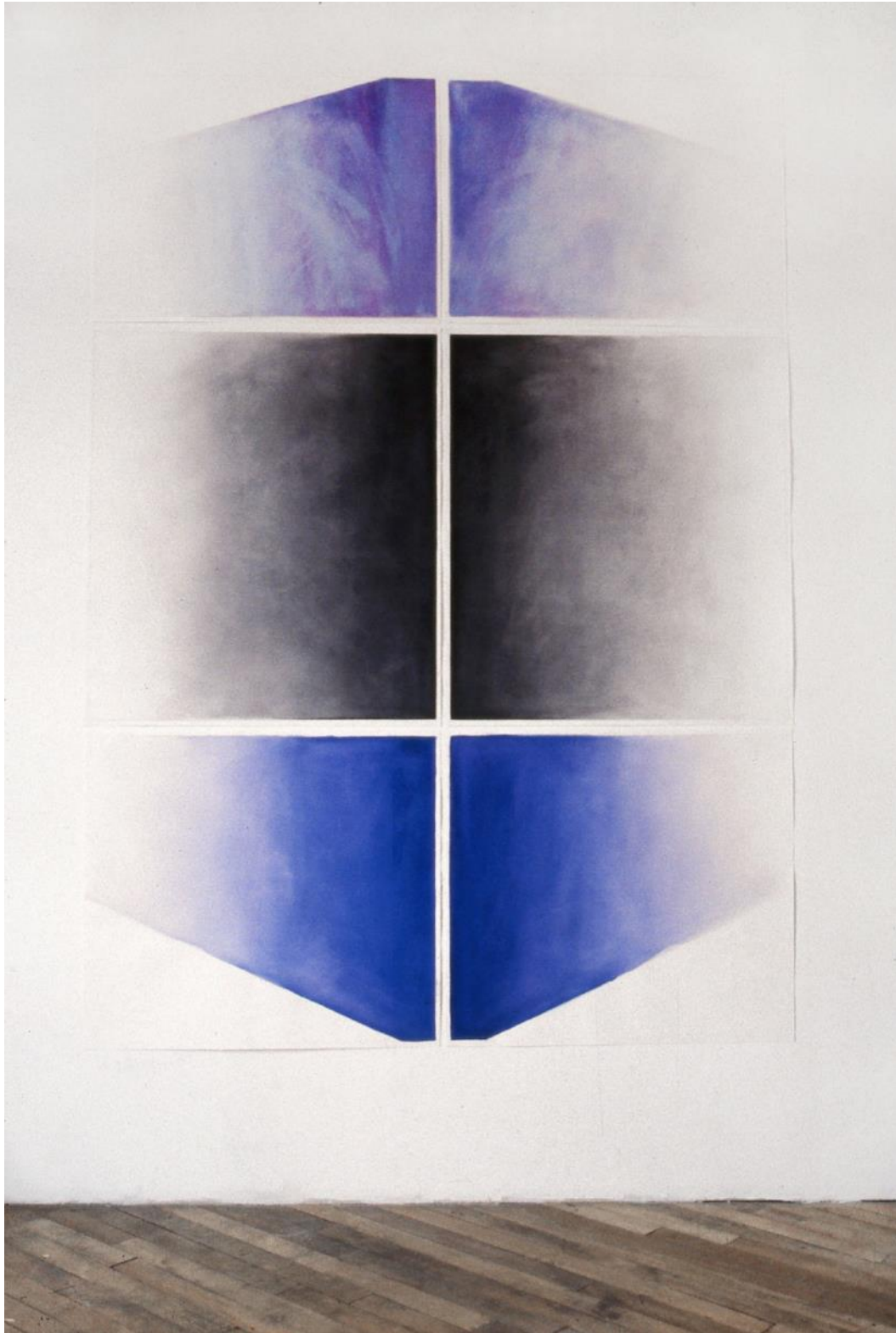


Figure 9: Colour Chord Series, watercolour on paper, 5' x 7'.



Figure 10: Colour Chord Series, watercolour on paper, each 5' × 7'.



Figure 11 (right): Colour Chord Series, watercolours, each 5' × 7'.

One day, back in my Toronto studio, I put several of these Colour Chord watercolours on the wall together. They remained there for some time, as I observed and experienced them as a surrounding presence. I began to wish I could make them as frescoes, in an actual architectural space designed for them. The walls themselves would emanate the coloured light, I thought. Thinking about this imagined space drew out the realisation that this effect was already occurring in my studio—that the painted colour was indeed not only on the paper, on the wall, but *in the space*. . .in the air, the atmosphere. I remember having this moment of revelation, and then picking up a piece of white paper and holding it out from the wall near a painted colour. It was clearly coloured.

I moved it further away, and still could discern the colour, now fainter. Like the vision of the pool, this revelation occurred in my imagination, but was triggered by thousands of previous experiences, combined with a sensitive ‘dwelling upon’ and ‘dwelling within’ a specific localised spatial experience.

From this point on, I had a different understanding about the space, the air, within architecture’s form/envelope. It is not a void, an emptiness, but the ‘medium’ in which we live and move, full of sensate experience. These works triggered a new understanding of light and colour as a combined, complex, inseparable resonance that we can see and feel. . . of colour and light and darkness as sensations that impact us in conscious and unconscious ways. But, most importantly, the idea emerged of light and colour as permeating the space atmospherically. Beyond ‘function’ or ‘static presence’ as image, whether visible on the wall, invisible in the air, or holding ephemeral ground as transparent/translucent image, light-colour-darkness now held a place in my imagination as resonance that could influence me, and others, spatially—through my body as well as my mind.

As I consider the colour relationships in my works, these watercolours provide a clear example of a few general principles at play. The central sections of the paintings read as a neutral ground between the upper and lower coloured sections—sometimes almost black, sometimes luminescently pale, but always providing a space of relative darkness holding the mid-field. Higher intensity (purer chroma) colours are used in limited quantities, and seem to highlight the upper and lower areas—the ‘head’ and the ‘feet,’ if the image is implicitly understood as a kind of body. One could say that these are the ‘active’ parts of the body, while the ‘torso’ holds the substantial ‘steady’ spatial presence. One can experience in these works the way that the blues draw one in, recede, hover and resonate, and the warm hues radiate outwards, engaging the body in a glowing sensation.

3. *Eight Tone Poems (1998)*

In this commissioned work for Freeport Grand River Health Centre (Figures 12-14), the individual windows, each with their set of three colours, function again as simple ‘colour chords’ that may speak to individuals differently, and shift in their harmonic resonances at various times. They are intended as mood pieces, as the title suggests. Each window has its own sense of aliveness—a resonant energy that can be felt. One may be bright and playful, another sonorous and serious, another graceful and gentle. The poems etched into the mouthblown glass panels have a similar range of expressivity. The installation altogether offers a more complex overarching resonance and interrelationship of its parts—which changes with the weather, with the time of year or time of day, and with the activity of people in the space.

The term ‘Tone Poems’ has to do with both music and colour. A tone poem is generally understood as a continuous musical piece developed from a literary story. But tone is also a term used in colour, and these pieces are colour chords that include interplay between the colours, the interior and exterior environment and the verbal content and compositional playfulness of the poems within the rectilinear framing. There are eight windows, and each has its own harmonies—a combination of elements that makes a visual, sensory and metaphoric poem.

For this work, I specifically selected particular sheets of coloured glass that had rich *value gradation* (*fades from lighter to darker*). This is a particular, notable property of the French mouthblown glass I hand-selected at the factory (see Figures 12-14 as showing gradation in each coloured sheet). Gradation, as I see it, increases the emotionality of a piece of glass—which is why I am drawn to using it. This glass also seems to me more ‘organic’ in feeling due to this swelling, shifting, lightening and darkening of colour in the sheet. . . a sensation of colour-light-darkness reminiscent to us of nature’s breathing and aliveness, and the modulations of sound and music.



Figure 12: Eight Tone Poems #4, window in spring (next to exit doors unseen to right).

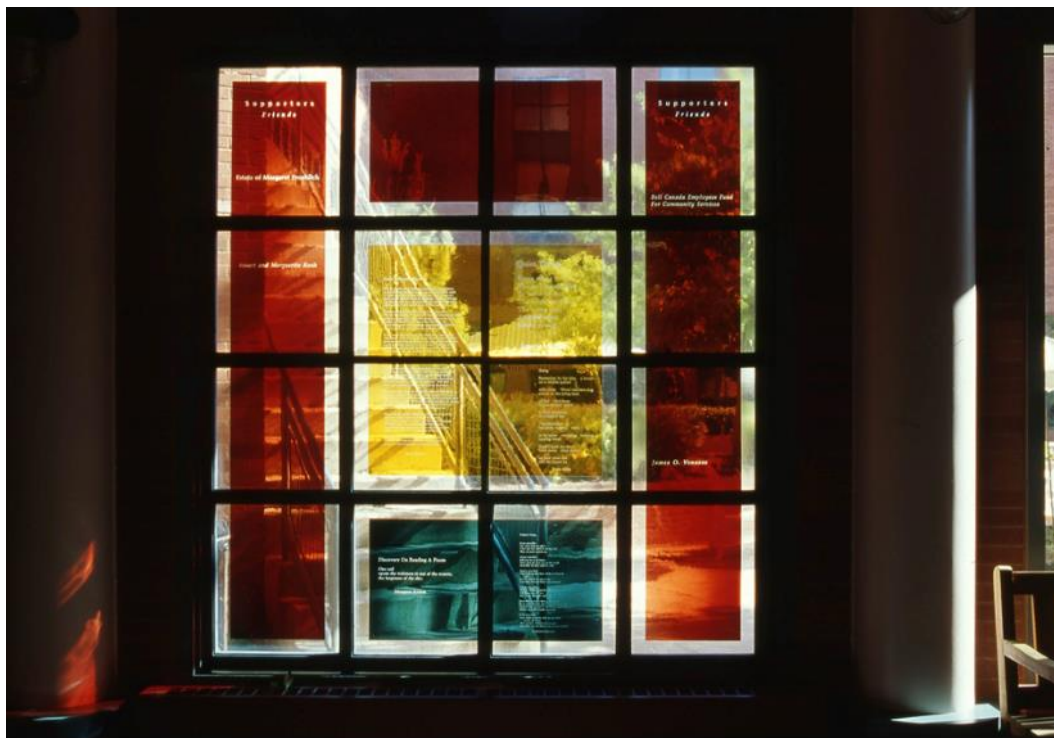


Figure 13: Eight Tone Poems #1, showing gradation of colour in sheets of glass.



Figure 14a (left): Environmental effects.

Figure 14b (right): Use of warm, light-colour to energise darker spaces.



Figure 15: Shift of colour mood and alternation of coloured and clear panes.

The corridor has gradation in its moods too, throughout the day and year, related to sun angles, weather and garden. . .but also in its presence as a pathway with different experiential properties along

the way (Figure 14a and Figure 15). A flowering tree is visible through a particular colour (Figure 12. . . an overhang darkens one area. . . a pool of water with bubbling fountain mediates/enlivens this darker place (Figure 14b). It may take some time for residents and visitors to notice these phenomena of emotional resonance, but this is a long-term care hospital, and there is ample time for it to reveal itself to those who live here. Many residents, caretakers and visitors pass by often. Moving slowly, in a wheelchair, on foot, one may stop to dwell or to rest in a particular coloured atmosphere, or to read a favourite poem (out loud to a companion, or silently and privately).

There are times when we are susceptible to being 'lured' into connecting with the beauty of the world. This occurs when we slow down to witness or drink in the gentle aliveness or fierce intensity or rich beauty of our surroundings. It is then that we may notice our mind/body environmental responsiveness. . . how the resonance of colour/light/darkness and materiality contribute to our feelings. In Figure 14b one can faintly see that a pool of water is immediately beyond the window. In situ, one experiences a constantly moving pool of water behind the orange and turquoise glass. The light shimmers as the water moves, and the colour liquifies and dances. One can be entranced.

Theme three – Threshold and Veil: *material/immaterial light-colour-darkness and seeing through* (one project)

1. *Eight Tone Poems (1998) - again*

Though there are other smaller artworks of mine that engage issues of threshold and veil, I will concentrate here again on the *Eight Tone Poems* project, as it provides a strong encounter with the important architectural relationship between interior and exterior (from the inside out). We may think of a work of architectural glass as the 'membrane' or 'luminous curtain' between inside and outside. This veil-like layer within an architectural setting has a role that goes beyond protection in altering our perception and consciousness related to space, place, containment and release.

This project had an agenda (from the client) for 'donor recognition,' but I chose to move well beyond that idea, enhancing the content by making the eight windows an anthology of Canadian poetry (surrounded by the names of donors). The coloured windows here are placed in alternation with clear glazed windows, on the north-facing side of an interior walkway encircling the large, central exterior courtyard. This orientation takes the projection of coloured light into the space out of the equation (light projection was deemed inappropriate for patients with cognitive impairments). The ambience, then is found in the veil itself—and hence the role of these windows in creating a subtle place for being. A hovering between interior and exterior worlds is made manifest in this space.

I sought to develop the space as a contemplative zone, building upon its existing character (as the north-facing, 'quiet' corridor). The windows, while strongly coloured, provide a layered rather than an obstructed view of the courtyard beyond (Figures 16 and 17). This corridor becomes an identifiable place where one feels drawn into an opportunity to walk, talk, linger, look, dwell, read and observe. Through the transparent colour one sees vegetation, architecture, human activity and solar movement. The alternating rhythm of colour/not-colour and containment/release creates a breathing, living relationship between inside and outside, corridor and courtyard—with much more range of expression than the usual baldness/blankness of contemporary fenestration.

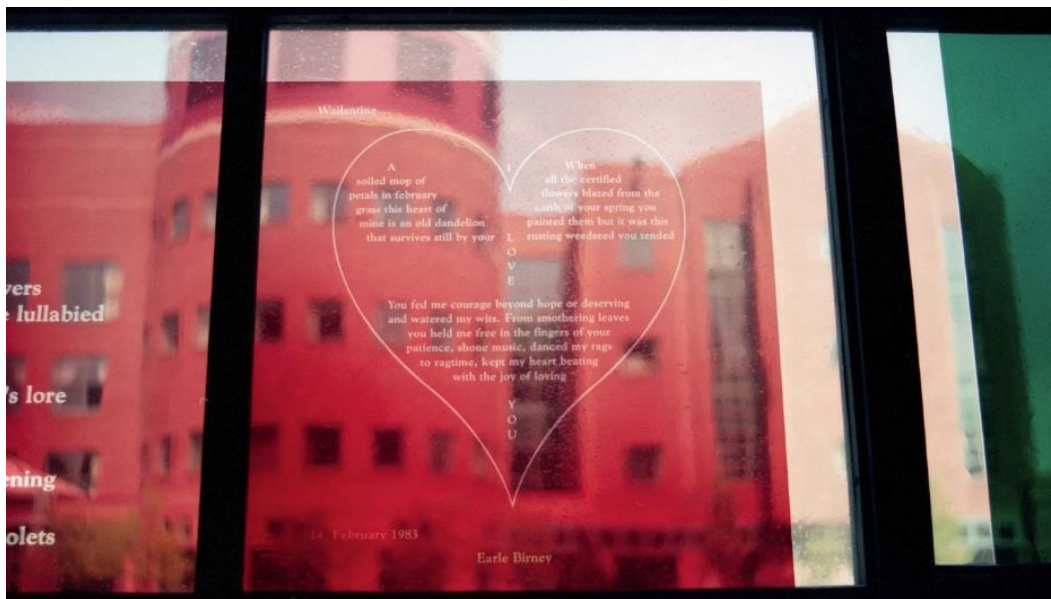


Figure 16: Eight Tone Poems #5 – detail showing surface and view-through relationship.



Figure 17: Eight Tone Poems, showing modulations of view through, and use of poems as visual composition.

The view through is enlivened here through the kinaesthetic experience of walking past the mouthblown glass, due to the characteristic striations in this glass, which create an almost liquid sensation of movement, and the etched letters, which hold the surface and shimmer and slide against the always darker background and frames. In the summer, the courtyard is green and full of people. In the fall, the yellows and reds, inside and out, are reciprocally highlighted. When the courtyard outside is quiet, stark and uncoloured in the extended winter season (November to May) the coloured views and rhythmic intervals provide much-needed liveliness and relief.

The notion of threshold is almost literal here as the sliding doors that open automatically (for ease of outdoor access for all) are flanked by two of the coloured windows. This provides a notable sensation of slipping between the two spatial worlds as one makes the passage from inside to outside.

The 'colour field' format and scale of the work allows each colour chord to virtually envelop a nearby viewer, who has the option to look at the surface, read the poems (etched, floating in the colour fields) or look through the coloured glass (and its clear edges) to the deep view of the gardens/courtyard beyond.

Twenty-four colours of mouthblown glass were selected at the Saint-Gobain factory in France. I have no available documents that detail the colour numbers, but I personally selected these colours at the factory. I was limited to flashed glass (coloured on clear in same sheet of glass), due to the design. The creating of the chords was explored once all the sheets were in my own studio – working with this specific palette of twenty-four colours to make the eight chords.

The poems and donors' names are acid-etched to clear—as are the transparent borders. This was a very difficult and dangerous technical process utilising hydrofluoric acid. The colours, each made from different minerals, resist the acid uniquely, some requiring much longer immersion in the acid. The coloured flashed layer itself varies significantly in thickness—providing the beautiful gradations evident in each piece—and seriously complicating the technical feat.

Figure 18 shows the depth and mood given to the space by the coloured glass. In my experience, any level of subduing the light is easily considered by contemporary inhabitants of architectural space as 'depressing.' Yet we need this 'stopping down' of the light to shift our consciousness from active to contemplative. There is also comfort in shade, as under trees or porches, or in the dark coolness of a Victorian house in the midst of a summer heat spell. Light-colour-darkness is seen here altering the normal condition, and creating vivid experience.



Figure 18: View of the corridor and the garden through the coloured and clear windows.

If we consider this project in relation to the swimming pool concept/design described earlier, we can see a very different, less ephemeral sensibility. Here the solidity of the colour-as-image responds not only to the architecture in which it is embedded (a thick, red-brick post-modern structure), but also meets the need for stability and order that is a mandate for the fragile inhabitants of the facility. But further, it responds to the very different movement in and through the space by the users, and the kinds of attention that might be enhanced through the affordances of the work.

It should be noted here that both *Openings* (Figures 5 and 6) (with their double layer of glass/image) and *Swimming Pool Colour Chords* (Figures 7 and 8) also can be understood as having a relationship to this theme of threshold and veil—of holding the plane, seeing or passing through, and becoming aware of the relationship between layers of experience, from two sides, and between two worlds.

Theme four – Projection, Reflection, Light and Time: *aperture and surface make light and cosmic rhythms visible* (three projects)

1. *1400 Dupont Colour Chord Installation (1992)*

1400 Dupont Colour Chord Installation had its conception at an exhibition in Wales, where I showed a model of a light projection work. In discussing that work with one of my colleagues at the exhibition, I mentioned that I had a rented studio in Toronto, and that each day on my way to it, I passed through a very large space in the building (Figure 19) in which a long set of ‘clerestory’ windows (approximately 18’ above floor level) produced a light projection upon a massive perpendicular wall. I noted that I had been watching it, even photographing it, but it seemed to me that no one else paid any attention to this phenomenon. It seemed to me that white light just was not very noticeable to people. . .it was taken for granted. I had realised that the windows faced south, and that their projection into the space, onto the walls/floor, provided a remarkable depiction of the sun’s daily movement across the sky.



Figure 19: ‘white light’ projection at approximately 11am near winter solstice.

As I was explaining how this space triggered my attention towards light and its movement within architecture as a temporal experience, my Welsh colleague, Catrin Jones, said, “Well, you’ll just have to do an installation there when you get back!” This statement immediately ‘rang like a bell’ for me (as I’ve described it in conversation many times), and indeed led to my proceeding with an installation in the Toronto space in the coming months.

I rented a scaffold and filled the line of twelve 2’ × 2’ south-facing clerestory windows (that is, high up in the two storey space), with mouthblown glass from my existing inventory (hence working from a limited palette—I discovered that some colours did not project well, so my choices were further narrowed). I composed the twelve windows as four chords—each, again, comprised of three colours that I experienced as holding together with strong harmonic resonance. At the time, I wanted to work with colour intuitively, from my own experience, from what I saw and felt, not from a set of rules or analyses

by others. At the time, I attributed each chord to a specific experience I had had in the Welsh countryside (I have no record of these particular connotations, all having to do with light/colour in natural settings there).

The twenty-four foot strip of windows became a filter causing the coloured light projection. That is, the 'image' of the windows as seen directly in the architecture was not the point of the project; together the colours created a larger whole—they were the vehicle for a rather grand spatial experiment and experience. The light projection from these newly coloured windows was remarkably powerful—it was not possible to miss its appearance and action in the space and to marvel at what seemed a living, breathing presence (Figure 20).

Arriving there when the projection was in 'full bloom' was a thrilling moment (Figures 20-22). An elderly visitor exclaimed with great excitement one day that this was her first real colour experience, and said that she felt that she could pick it up off the floor and eat it, it seemed so tangible.

Watching and documenting the piece throughout a year's cycle showed the dramatic changes in sun angle through the seasons, and made it clear that no two daily episodes were every quite the same. A colleague who came to visit the piece was disappointed as the sun refused to show, and the artwork was not 'on'. As he was preparing to leave, the coloured projection burst onto the wall in full intensity—a tremendously dramatic moment. Startled, he exclaimed, "Oh! . . . God just turned on the lights!"

On misty days the projection wafted in and out in the half-light. The entire space seemed to become hazy, though the mist was outside (Figure 23). On a sunny, breezy cumulus cloud day, the projection image could appear and disappear suddenly. The on/off flaring of the coloured light was extremely exciting, and its unpredictability made it more so.



Figure 20: 1400 Dupont Light Projection, 9:30am, colour begins to turn to the floor.



Figure 21: Last three colours stretching on the wall and folding onto the floor. Note spreading of light on floor and wall surface.



Figure 22: Last colour stretched out on the wall surface as sun becomes parallel to the wall.



Figure 23: Sunlight passing through thin cloud cover.

I discovered many things through this project, as it was in place for a full year—during this year I was able to study it and photograph it. Here are **six key lessons (as follow)** that I took from this rich learning opportunity:

a. Southfacing apertures (sunpath facing)

The powerful configuration of *a row of south-facing windows directly abutting a perpendicular wall* was now thoroughly ingrained in my architectural imagination. The situation at the 1400 Dupont Toronto studio was an unusual architectural configuration—it was as if a huge projection screen had been specifically built for the window projection (Figures 20-24). South of the equator, it would be the north-facing windows/apertures that would have the same import of showcasing the day's solar movement.

b. Rhythm of the day's lights

One of the most exciting aspects of this work was its rhythmic structure. In the early morning rapid phase, over the course of approximately thirty minutes, the line of twelve coloured rectangles (elongated parallelograms—projections of the square panes) appeared to grow on the wall, appearing in sequence one after another—until the line was fully present on the wall (see Figure 20). The next phase took several hours, and was completed at solar noon—the wall projection slowly moved onto the floor (see Figures 21 and 22). At the equinoxes, the angle was acute, and the projection manifested close to the middle of the huge wall and floorspace, and moved onto the floor sooner, as the wall could not hold the full line in this position. At winter solstice, the line of colour was deeply and fully extended along the wall, including the lower ceiling area. The turning onto the floor was slow (colour by colour folding on wall/floor and gradually slipping onto the floor).

At summer solstice, the bottom sill of the windows cut off the projection, due to the high sun angle. This was a dramatic event in itself, known only to those who were familiar with the entire yearly cycle. At solar noon, in all seasons, all 12 squares (returned to their proper orthogonal shape as

squares) lined up on the floor directly in front of the windows. Here the colours reached their maximum intensity on a clear day.

The rest of the day provided the slowest of the three sequences, as the projection gradually moved down the huge floorspace, and the projected squares became more and more slanted parallelograms, growing less intense, and eventually disappearing in late afternoon as the sun slipped below buildings to the west (Figures 24-26).



Figure 24 (left): Episode in the light narrative – before noon.

Figure 25 (right): Episode in the light narrative – after noon.

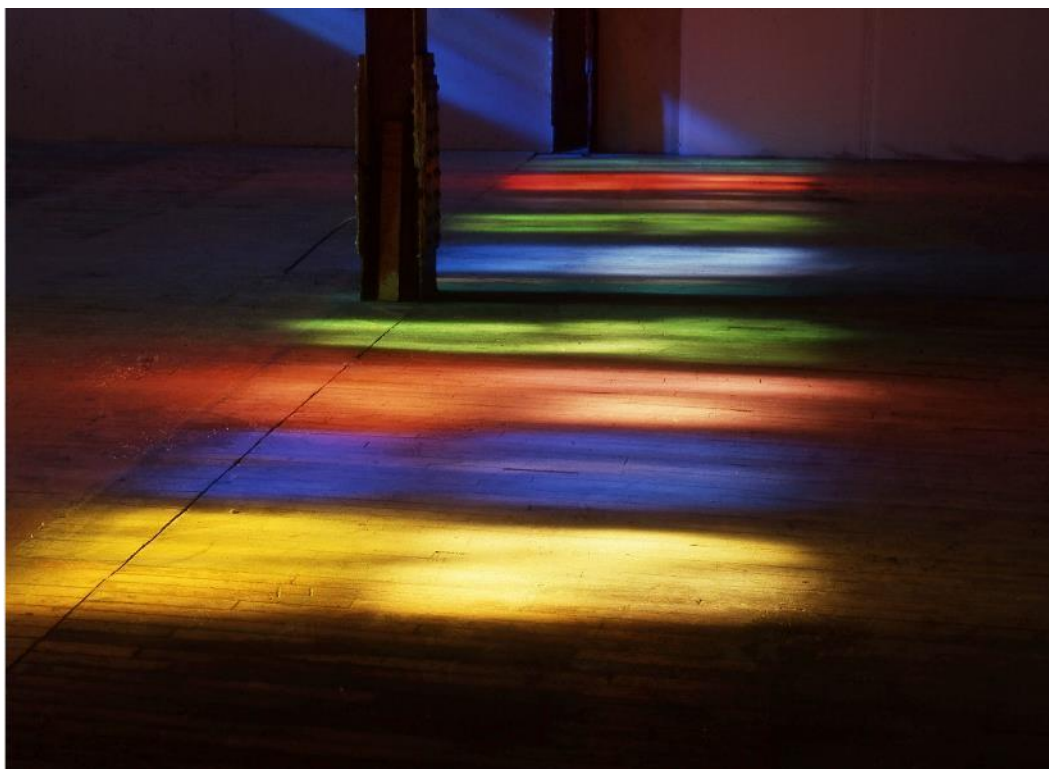


Figure 26: 1400 Dupont floor colour showing richness of colour and spreading of light/colour differently.

c. Parallel projection

I learned that when the sun moved to a parallel position to the wall, the nearby (perpendicular) aperture elongated enormously on the wall (see Figures 23 and 24). These events created a dramatic appearance carrying emotional sensations similar to those we feel upon seeing shafts of

light from the heavens, that offering of long beams of light through atmospheric and often dramatically coloured conditions (Figure 23). This elongated shafting was a progressive condition that was particularly striking as the sun moved towards the noon hour in this instance, but I would see it again in the next installation piece, at a different time of day.

d. Coloured shadows

It wasn't until someone left a batch of junk—sticks and shelving units—next to the projection wall, that I really discovered the coloured shadows created by the installation of coloured glass (Figures 27 and 28). I had seen a rather strange rainbow emanation on the wall opposite the windows (along the lowered ceiling area) as I was walking next to the wall. But the wall was a dismal pinkish greyish brownish colour and it was not clear what I was seeing. Later I realised it was my own shadow (created by twelve separate colours from the windows). . . It was not possible to distinguish each of the colours, and I did not attempt a systematic study of this phenomena. Coloured shadows, however, became part of my awareness within architectural space, and I explored them further in the next installation project, at Artspace, Peterborough.



Figure 27 (left): Shadows from twelve hues of light/colour coming from windows high above.

Figure 28 (right): Coloured shadows: phenomenological exploration.

e. Spreading of coloured light

In studying this work for a year, I discovered many things about light in space/form/time. I noticed the colour/light everywhere and everywhere different: gentle, reflected, glow on the ceiling above the windows; vibrant along the edge of the sill; playfully on the mid-air light fixtures; softly spreading along the dusty floor; radiating from the patches of projected colour (Figure 29). Glossy and matte (dusty grey) floor surfaces became remarkably interesting to me, as examples of how material and lightwork interact. I noted that the different colours of light spread differently—the long-wave red spreading much further than any of the other colours (Figures 26 and 29).



Figure 29: *Light reflectance differences on diverse surface.*

I began to imagine interventions, including walls, objects, screens, built or hung in the space to capture the light and its effects in different ways. I began to understand that one could intercept the light—showcase it, make it wrap around corners or columns. I began to think about surfaces and the ways in which they transformed and translated light. The spreading of the light was part of the movement of the light, and of my movement. It connected me, through my visual experience, to my bodily experience. The space became a felt space, a space I knew intimately, though it was an enormous and unloved space. I can remember this space viscerally, and I remember it volumetrically and atmospherically. It became alive for me, and remains so in my memory.

f. Urban dwelling and loss of knowledge

It was this installation that clarified for me our urban distancing from natural cycles. Upon showing this work to a colleague, an architect I respected, I was shocked when he suggested that it would be great if we could light it up somehow at night (with moving lights that simulated the sun's movements). My own interest was in the opposite – how we could highlight natural cycles. I was not yet even thinking of the moon, and now wish I had documented this work in the cycles of moonlight (it is easier to see/experience than to document). I came to understand that architectural space is a time-based phenomenon. I began, at this time, to use the term 'space/form/time'⁴—and it has become a synonym, in my imagination, for the word architecture. I engaged in this work with the specific intent to explore light projection in architectural space. However, the scope of my lessons about light, colour and darkness broadened and deepened over the year I spent in observation.

2. Aspects of Light (1993)

In the art gallery installation *Aspects of Light*, at Artspace Gallery, Peterborough, I deliberately sought to make explicit the concept of colouring the light in order to enhance the visibility and tangibility of light at work in the space (Figure 30). I began to think of such 'found' spaces as full-scale architectural models in which I could act upon the space and observe it. The challenge given by this project was the timeframe—the work would be up for only one month, and the month was November—a time of grey skies and rain in this part of the world, not far from Toronto. How could I provide a potent experience of light/colour for the viewer?

⁴Similarly the term 'light/colour/darkness' was one I began to use to express the interconnectivity of these phenomena, but shifted to hyphenating (i.e. 'light-colour-darkness'), to emphasis the connectedness of these phenomena. Now I see that 'space-form-time' is also a better way of stating that triad's inseparability.



Figure 30: Aspects of Light Installation, Artspace Gallery, Peterborough, Ontario, Canada.

I placed coloured glass in each of the existing window/apertures—three facing west, one facing east. I introduced several other elements to capture and activate the light:

- a twelve-foot-long ‘reflecting pool’ of ordinary float glass on the floor
- galvanised steel frames (mimicking the windows) mounted several inches off the north wall
- painted panes (mimicking the windows) in white paint on the grey south wall—various levels of gloss and texture

I aimed to use this opportunity to purposely recreate what I already knew, and to learn more about how colour made spatial light visible and haptically present (Figure 31). The concept was focused on the viewer, circumnavigating the space, trying to figure out what was going on. The work would respond to their movement and shifting perspective, and lure them into a consciousness of noticing.

While using, testing and confirming what I had learned earlier, this installation certainly added new knowledge. A dramatic discovery, for example, was that the coloured shadows were much more intense on a dark day. I found this out on opening day. At three in the afternoon it was almost pitch dark outside—an intense thunderstorm was approaching. I feared there would be nothing to see at the opening reception starting soon. Would we need to turn on artificial lighting?

The design had nothing to do with using artificial light. Much to my surprise, as people arrived, into the glowering gloom, the atmosphere took on its own presence. The coloured shadows cast by the visitors bodies onto the walls were incredibly vivid (Figure 32). Indeed they became a featured experience that day—I suppose that most people had their first conscious experience of coloured shadows that day. And the gleaming colour on the metal frames and painted panes also had a strong presence (Figure 33). . . much more noticeable than in ordinary daylight.



Figure 31: Afternoon light from west, approximately 2pm in November.

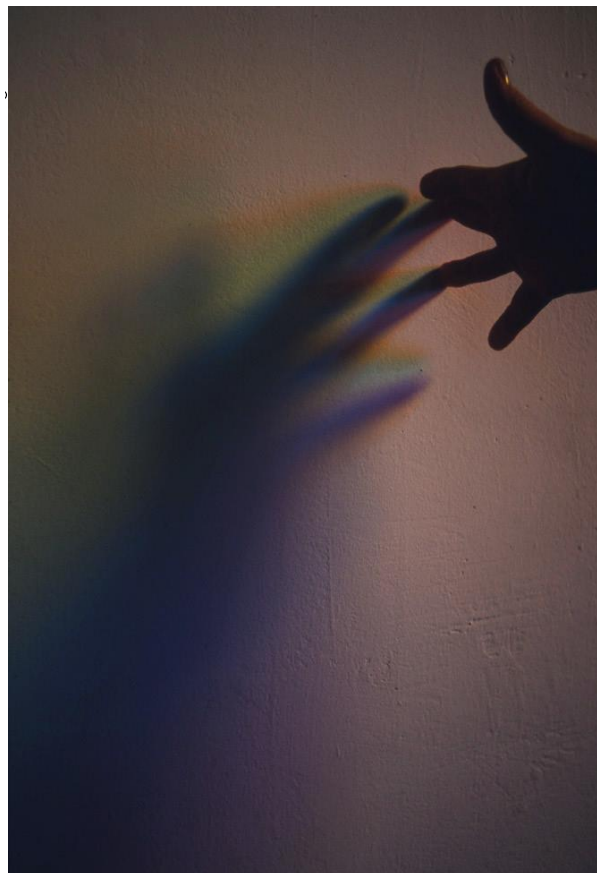


Figure 32: Aspects of Light showing coloured shadows on dark day.

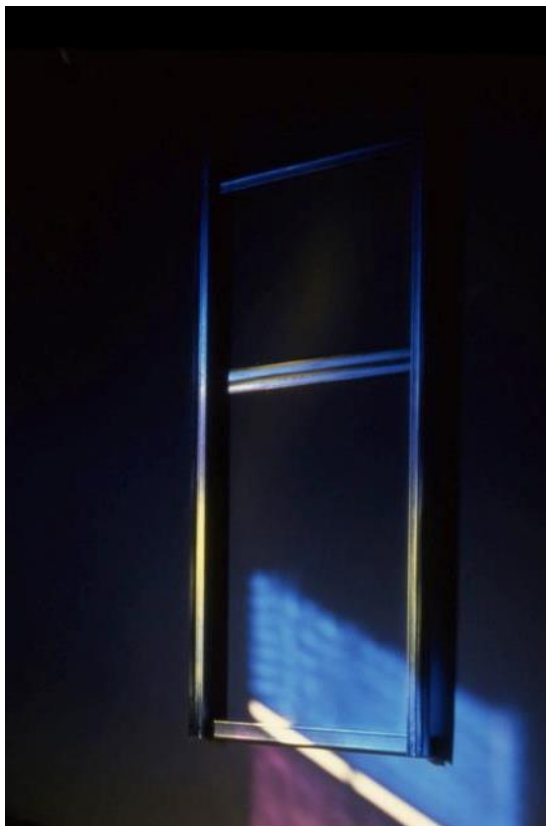
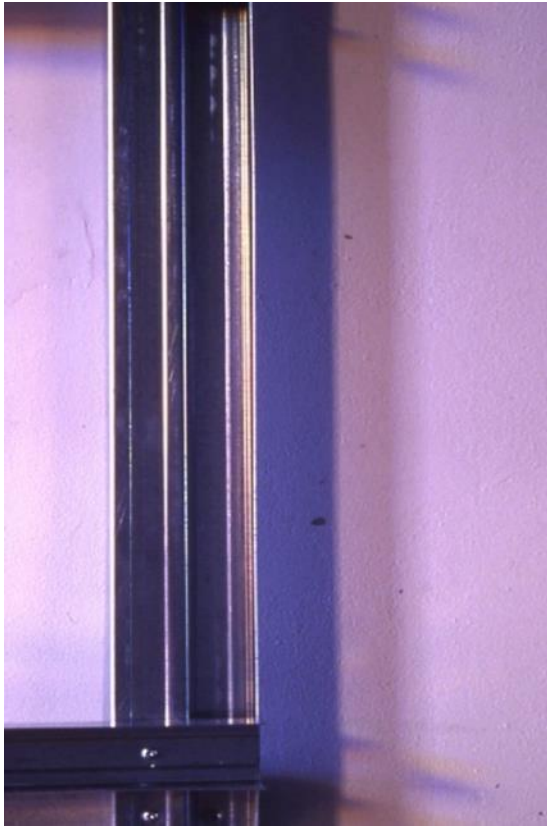


Figure 33: Coloured shadows, reflection of coloured light picked up by metal frames and gloss paints/flooring.

On a more normal day, these elements created a visible/invisible, appearing and disappearing ‘surround’ of reflected colour that was responsive to one’s movement and gaze.

The ‘reflecting pool’ glass in the middle of the space showcased the difference between what I call ‘hard’ and ‘soft’ reflections—caused respectively by the glass and the semi-gloss sheen of the wood floors (Figures 34 and 35). It appeared and disappeared as one walked around, as did all the interior colour phenomena.

While the colour from the east and west windows that reflected from the metal frames caught one’s eye, the more delicate shadows they cast on the wall required more discerning eyes (a yellow shadow is by its nature hard to comprehend, and comes as a revelation when actually seen/understood).

The white painted window shapes on the south wall became iridescent virtual windows. As one wandered around in the space, they ‘bloomed’ and then disappeared on the wall. Their deliberately textural brushmarks (of gloss and semi-gloss white paint) created what appeared to be impressionistic paintings related to the window colours (Figure 36).

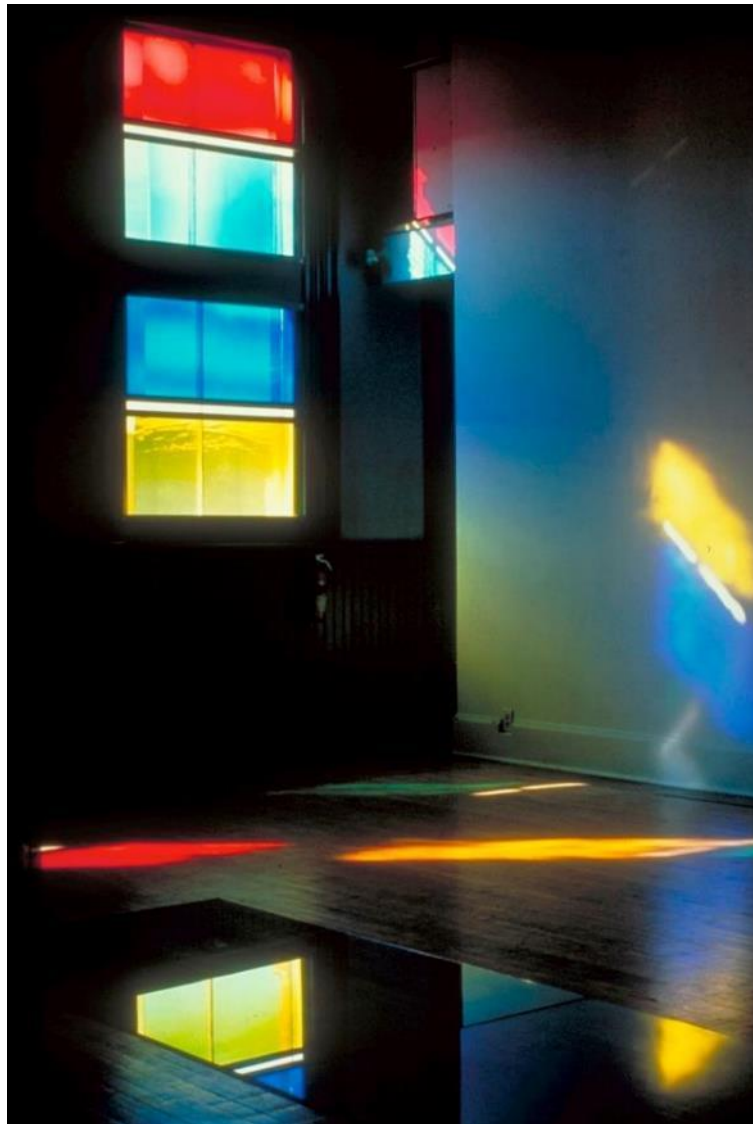


Figure 34: Light play with surfaces and substances.

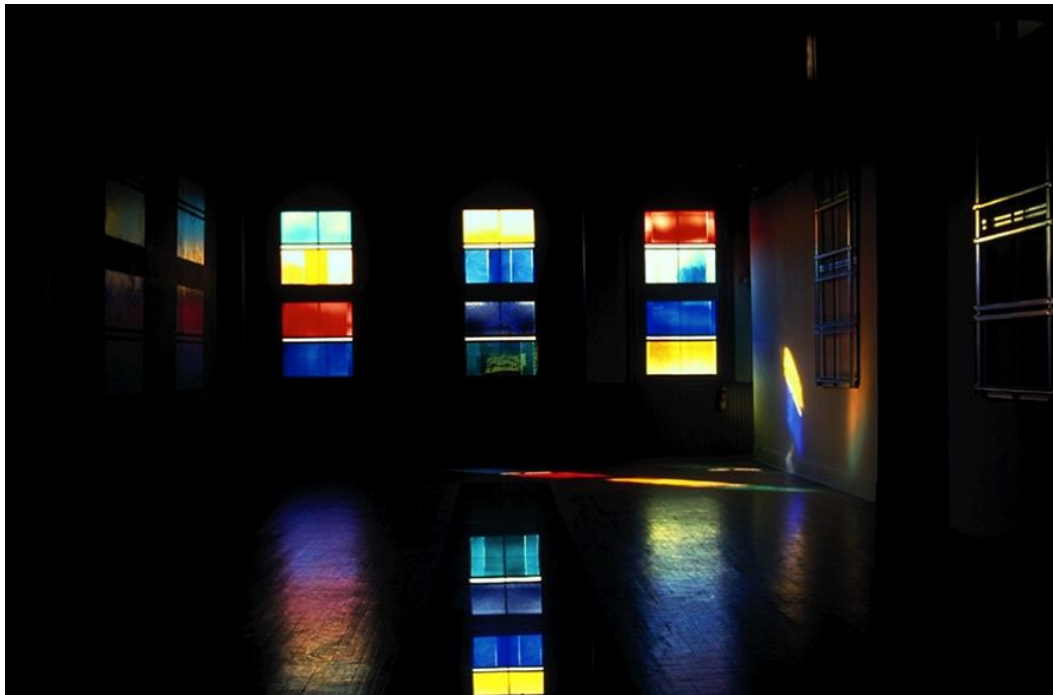


Figure 35: Hard and soft reflections and light actions.

The formal ‘envelope’ of the room was revealed as an active haptic player in the spatial experience. I had created a four-sided ‘room’ inhabited by the same ‘windows’ repeating in various materials—reflecting iterations that changed as one moved, and as the sun moved. The floor created the ‘fifth side’ of the room, with its ‘reflecting pool’ and soft varnished surface.

These reflective aspects of the project were modified further by projected light from east or west—here featuring much folding and wrapping of the light across planes of wall and floor. The west window light could be seen slipping into cavities, climbing upstairs, penetrating into spaces beyond, and providing a rich showcase of how the light ‘took on’ the space (Figure 37). What one could see of this depended on time of day and weather but also upon viewpoint, and patience—‘dwelling’ as Heidegger would say, or ‘empathic observation’ in the Goethian tradition.

For me, there was one most breath-taking, almost intoxicating experience that occurred in the late afternoon, as the sun moved parallel to the north wall, and one window elongated its projection along the wall. In the last days of the exhibition I was able to photograph this phenomenon in the lateral light of the late November sunset (Figure 38 shows this event just beginning).

This was not the lowest sun angle of the year—there were three weeks to go before the solstice, when the image would have been at its most dramatic. Perhaps no one but myself and one or two gallerists saw (and felt) this effect. This shafting, stretching light was somehow profoundly engaging, emotionally moving and deeply memorable. This impact was similar to the feeling evoked by the stretching of the light on the wall that I had seen at 1400 Dupont, but here, there were four colours involved, and the gleaming frames added to the visceral sensation.



Figure 36: Reflective paint gloss and semi-gloss on matt grey.

During the month this work was in place, I returned to the space often. My artistic research method now consciously included photographing what I saw, not for historical documentation or future promotional material, but as part of my work of observation. . .of seeing and understanding actual and shifting phenomena (Figures 35 and 39). Perhaps my incessant photographing might have seemed excessive to the gallery employees, but the work was never the same, and what I saw, what I was seeing, through the camera, was phenomenologically revelatory. I understood that others did not see things in the same way, but that what I was seeing was also universally available, present. The camera provided a way to capture and to share what I was finding.

Finally, a lesson about orientation: the situation was quite different than my earlier experiment—here east and west light apertures were pre-existing. I learned that creating orientation to the solar cycle could be achieved in different ways, with cardinal directions being generally important. The east/west light gives import to the morning and afternoon, when the light is most lateral—and being shielded from the southern light gives respite from the intensity of mid-day. These are insights humans have had for millennia, of course. Patrick Reyntiens had reminded us, as young students of stained glass, that only tourists visit Chartres cathedral at noon. The space is designed for worship in the early morning and

late afternoon, when the light is most lateral. Hence the deep colour becomes magically luminous in the space viewed by and surrounding the worshipers.

And for me, the powerful lesson learned at 1400 Dupont was reiterated here: the placement of the aperture in relation to the wall(s) is important, because the walls catch the light. Opportunity for parallel alignment to a long wall surface is an architectural device of great power for creating an experience that excites feelings of awe and wonder and delight.



Figure 37: Light playing with walls and cavities and surfaces.



Figure 38: Parallel light beginning to appear on projection wall.

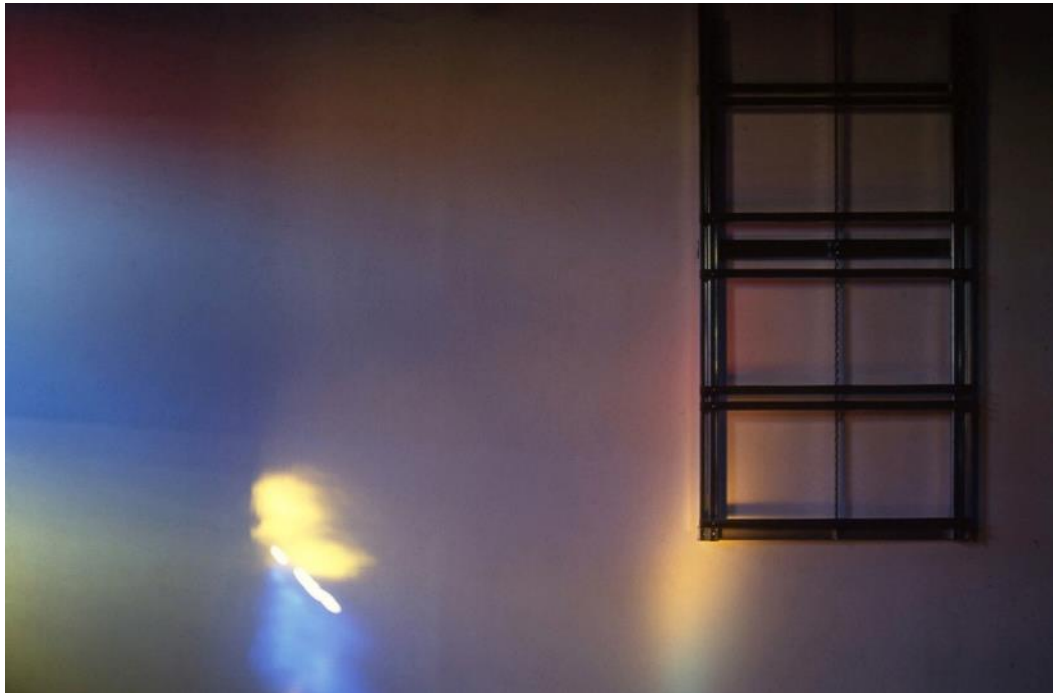


Figure 39: Richness of ambient light.

3. *Spiral Arc House: Ladder Window (2011)*

As the final example in this section (and in the paper), *Spiral Arc House: Ladder Window* brings the thematic discussion of Projection, Reflection, Light and Time: *aperture and surface make light and cosmic rhythms visible* to a close.

This artwork is designed into a house/studio designed with my partner artist/designer Stuart Reid on a site overlooking Lake Huron (Figure 40). *Ladder Window* is a purpose-built expression of the key concept discussed in this section: the notion that an architectural space can renew our acquaintance with the rhythms of the cosmos, through highlighting natural light and time as *spatial phenomena*.

The twenty-five-foot tall aperture was specifically designed as part of the building's two-storey front entrance, facing due south. A central stair is aligned with the window (directly on the east/west axis). This orientation and the building's spiraling curvature (made of three radiuses) allow a strong relationship to the sun from sunrise to sunset. Bedrooms receive the eastern light, and the main living space and outdoor deck provide an expansive western panorama towards the lake. The moon also follows the same trajectory as the sun. The exterior of the building is clad in metal, while the interior is lined with Douglas Fir plywood. We have described this metaphorically as having a 'cool scaly skin' on the outside and 'soft warm flesh' on the inside (spoken conversation with Stuart Reid, co-designer, 2011). One can imagine this as an evocation of the salmon that is so much a part of Canadian culture/cuisine.

The two storey space at the entry juxtaposes two environmental artworks that create a rich balance between colour and white, warmth and coolness, sun and moon. *White Sail Window* by Stuart Reid evokes winter, birch bark, wind and clouds, moonlight, and seed pods, while *Ladder Window*, is related to spring and summer lake and vegetation—a remarkably literal record of the vivid blues, turquoises and greens of the landscape and lakescape at midsummer (Figure 41).

In this space, projection and reflection are always on the move, tracing the annual solar (and lunar) movement, bringing it into visible, tangible connection with the inhabitants of the house. The morning sun throws a long line of cool light into the main living space, which moves slowly through the space,

finding its alignment with the main stair at solar noon. Just past noon, it begins to move onto the large east wall, where it develops into a two-storey dramatic projection (Figure 42). The sun angle and intensity of the colour changes throughout the day and in relation to the weather, the time of year—and the observer's point of view—for example bathed in the light (by standing in it), going up or down the stairs, sitting at a distance watching it light up the wall.



Figure 40: Spiral Arc House at Lake Huron, Ontario, Canada, Ladder Window exterior and interior.

The setting of this piece in a house/studio that is occupied year round allows for an observational study that viscerally corroborates my earlier insights. The coloured and textured mouthblown glass renders the projections with an aliveness that clear float glass or untextured colour in the same apertures cannot match. We are drawn into awareness of light and how it works, and into a phenomenological consciousness (Figures 42-46). We see consistent and variable effects.

The colours of the glass come to align almost precisely with the exterior colour at midsummer (Figure 45). The birch trees which flutter in the breeze outside make the coloured light projection dance (quite literally) on the floor (at diverse tempos, varying with the weather) (Figure 43 shows a static image). An iridescent array of delicate coloured shadows are thrown onto the wall by the beams and open stairs, augmented or diminished with shifting cloud cover. Everywhere, the colouring of the light makes it more visible and tangible. We follow the day's rhythm, the movements of light mark the time of day. The impact of these time-based sensations is indeed embodied. We feel a subliminal sense of well-being, pleasure, which is manifest in changes in body posture, breathing, opening of eyes, making of sounds, calling someone else to come and see. . . We also feel awe, exhilaration, meditative calm, wonder, surprise, disbelief, anticipation, sensitivity. And we remember. Through experiencing and through remembering, we change. We become more attuned to nature and to cosmos.

Through living in the house, I have come to watch the moon's trajectory, too. I have seen this work projecting on the stairs or the wall, caused by a full moon. When this happens I am reminded of how far we have come from astronomical, cosmic awareness, which now is a 'scientific' study rather than a part of our lives directly.

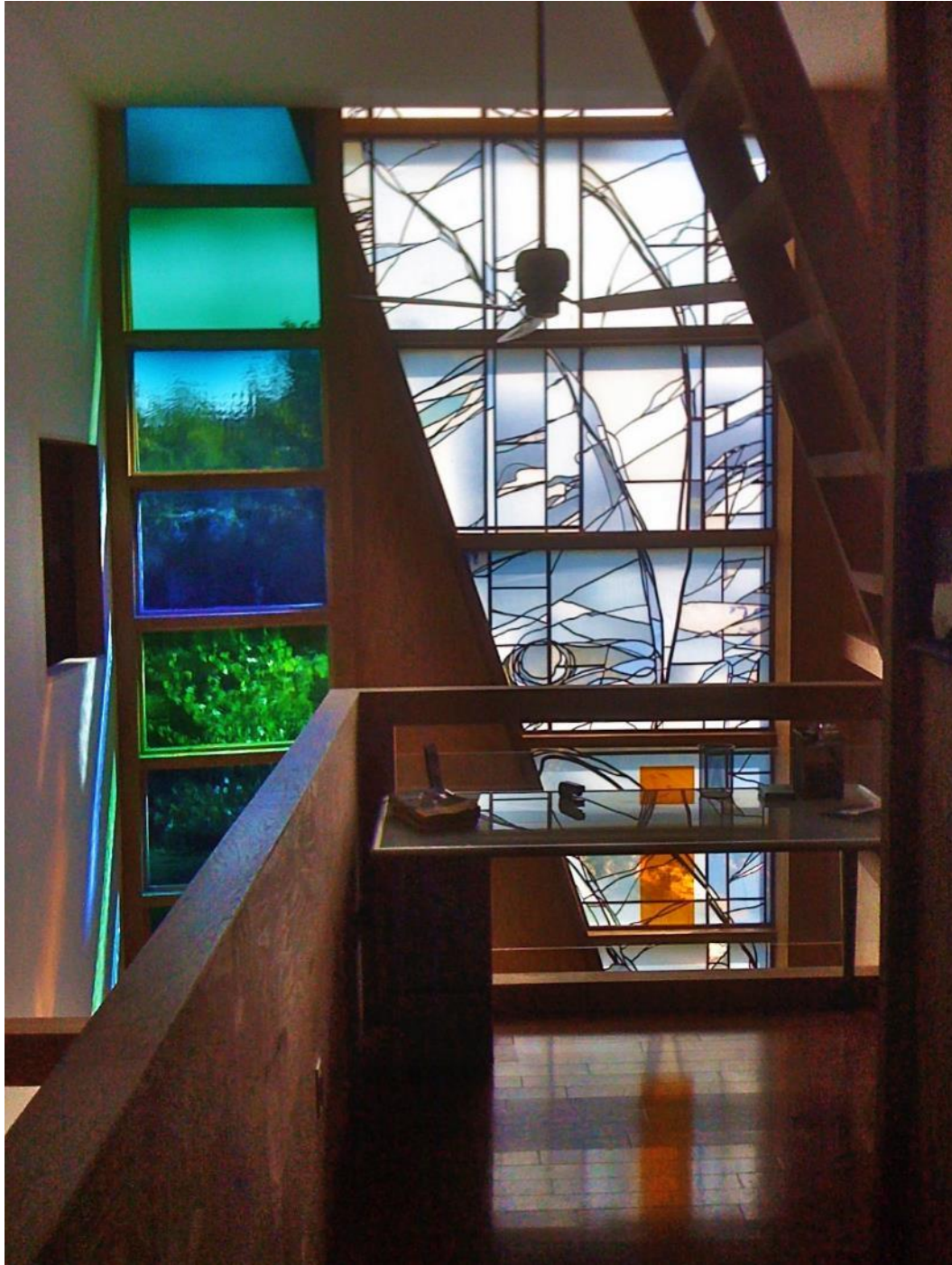


Figure 41: Ladder Window (D Balabanoff) and White Sail Window (S Reid) viewed from mezzanine.



Figure 42: Space at 1pm (left) and 5pm (right), both shots near equinox (sun highest in sky at noon).



Figure 43: North-South axis, solar noon, light projection arrives on the stair.



Figure 44: Two images showing very different light related to weather conditions/cloud cover.



Figure 45: Colours at midsummer of vegetation, sky and lake.

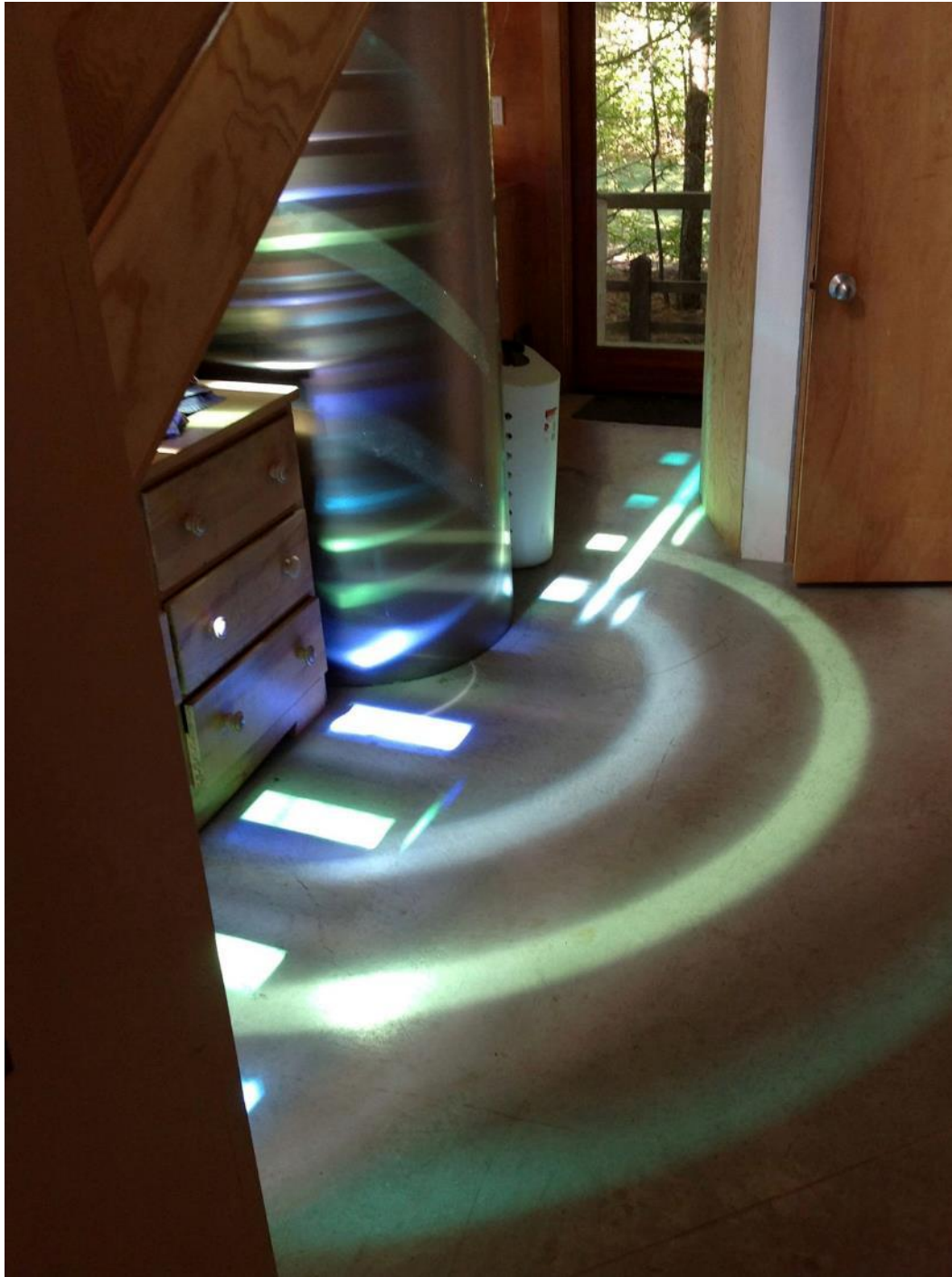


Figure 46: Stainless steel water heater cover reflecting light passing through stair.

Summary of lessons

I have reflected upon this previous work in order to reveal and describe some of the ways in which I have been, over many years, building an evolving relationship with light-colour-darkness in environment. Through this work, I have come to understand light within architecture as a necessary and poetic carrier of perceptual and conceptual clarity. But further, I learned and confirmed that colour-as-light might be used with more thoughtful and poetic variety to create a rich vitality within our built interior environment—an *aliveness* that nourishes us and aids in re-connecting us to cosmic wholeness—a sense of the larger world in which we are situated.

As I noted at the outset of this paper, during my work over the years, I was influenced by many other artists, writers and thinkers, but rather than learning in a formal, academic model I was building knowledge through a praxis. In this practice-based mode of developing understanding not all is 'practical' – the theoretical and conceptual overlap and merge, and the knowledge of others is tapped. Hence the list of findings I offer below were slowly interwoven into my consciousness. They were not explicitly written down, and they were not referenced directly to any specific sources (though many were with me as direct and indirect influences). The 'flow' of artistic working assimilates much, but operates in its own playing field with its own rules.

In this paper have looked at four major themes as they seemed to frame significant aspects of a phenomenology of light-colour-darkness in architectural space, as found in my previous practice. In the summary below I offer a more concise set of ideas, keeping them within this organising thematic framework. I present these concepts as transferrable knowledge for future work and further learning. They were found and developed through the active artistic processes of making work, but I have come to express them verbally through a process of extended contemplation and writing. That is, I have mined my own making and doing and thinking, through empathic observation, in the tradition of Goethian research.

The phenomenological concepts expressed below, then, hold meaning for those interested in making architecture and those interested in actively developing knowledge for making more sensitive and emotive architectural space and place, through use of light-colour-darkness as potent elements of embodied experience. They offer transferrable knowledge, useful in diverse settings and in relation to human needs and desires, from dwelling places to healthcare facilities to urban public spaces. They address:

1. environmental experience
2. how light-colour-darkness is implicated in our spatial experience
3. what we might do to enhance embodied spatial experience for human wellbeing and connection to nature and cosmos

Summary by theme

1. Image and Emanation: *light-colour-darkness as matter and atmosphere*

- Space and atmosphere are not void, but imbued with energies we are immersed in, and attuned to.
- Embodied experience is a becoming one with landscape or spatial setting and its atmosphere, a confluence or coming together of material and immaterial energies in and through us, taken in and given off consciously and unconsciously.
- Light and colour in environment offer us universal understandings as well as specific, localised ones.
- Light (light-colour-darkness) provides a basic, comprehensible visual and sensory language for image and emanation—that which we can see and simultaneously sense/feel.
- In the language of light-colour-darkness, gradation is equated with a sense of radiation involving sensations of visibility, airiness, and movement into or through space and towards light. But also, involving the invisibility of depth, a sense of enclosure, a feeling of going deeper into the night. This continuum is an emotional terrain. In architectural space, gradation (e.g. from dark to light, or one colour to another) is emotive—that is, gradation is imbued with meanings, poetic and mysterious—and its absence makes unemotional space.

- Opalised flatness of surface provides stillness; layering of transparencies creates energy, movement and modulation of light/colour/darkness.
- If we can appreciate the spatially manifest relationship between image and emanation, as we experience it in an embodied way, through material and immaterial light-colour-darkness, then we can use its language to create more sensitive and sensually satisfying environments in the real world.

2. Image and Emanation: *light-colour-darkness as matter and atmosphere*

- Our bodies feel the intensities, tonalities and gradations of light-colour-darkness as a kind of resonance.
- Light-colour-darkness combinations can offer a *felt harmonic resonance*.
- The resonance of colour is affected not only by hue, value and intensity but also by transparency, translucency, opacity, and other material qualities such as surface absorption or reflectivity.
- ‘Colour chords’—sets of 3 to 4 colours—can be ‘tuned’ through sensitive attention to resonance rather than formulaic prescriptions or quantifications.
- Colour as light is a potent source of embodied energy and requires further attention and study in the environmental design/architecture context.

3. Threshold and Veil: *material/immaterial colour/light/darkness and seeing-through*

- The idea of *threshold* expressed through coloured transparent/translucent materiality in architecture has a metaphoric liminality. . . it offers a place of passage from one reality to another; it touches upon the interiority of personhood, the exteriority of life on earth, the materiality and spirituality of our experience in the world.
- The idea of *veil*, of an ephemeral presence hovering within architectural aperture, suggests *protection as well as connection*—as a curtain screens *while creating a possibility of opening*—it offers atmospheric looking through, physical and poetic texture, and awareness of being here, being between, and going beyond.
- The view through *a veil of transparent and textural colour* is a living, breathing *heightened relationship* of intersubjective aliveness and kinaesthetic experience—elevating consciousness of place—of air, light, sky, cosmos, plant life, landscape, and the world beyond the ‘here’ of interior architectural space.
- Using a *coloured* veil between inside and out ‘sedates’ or softens the light, providing visual relief, contemplative feeling and emotionality to interior architectural space. ‘Light-through’ is perhaps our foremost familiar, natural visual and sensory experience of delight, as in leaves and tree canopies, grass and flowers, water and sky.
- The colour field aspect of large planes of transparent or translucent coloured image/veil is immersive—it creates envelopment, an atmospheric and embodied experience that has emotive sensory qualities.

4. Projection and Reflection: *aperture and surface make light, time and cosmic rhythms visible*

- The *aliveness* of natural light is a connectivity—between human, animal and plant life—a way of being in touch, through cosmological patterns and meteorological presence.
- The rhythm of the daily and yearly cycles of light, revealed through sunpath-facing apertures attuned to cardinal directions, provides *fundamental orientation* within architectural experience.

- Natural light within our buildings is also a function of the weather and climate—it is already colour-nuanced light, but fluctuates, often dramatically through times of day, as impacted by weather and geography—hence as basic, predictable patterns are ingrained in our lives, they also are imbued with infinite variety. Light-colour-darkness is intimately and intricately involved in this fundamental human experience of unity and variety.
- Colouring the natural daylight that enters our architectural space-form-time helps us to see the sunlight that moves within our buildings—the daily and yearly cycles of earthly light/life—aiding us in retrieving our lost ‘cosmicity,’ our sense of being part of the greater cosmos.
- Light has ‘time signatures’ or rhythmic structure within buildings, which *we create, and can enhance*, through thoughtful design and use of coloured and textured light and materiality.
- Using coloured material to alter the light passing through architectural aperture highlights the *phenomenological* aspects of interior form, surface, substance and atmosphere—these provide a language we can understand visually and viscerally as poetic expression in architecture and as affordance for action as well as for contemplation.
- Our *personal non-static perceptual relationship* to colour/light/darkness in architectural space is *time-based* (time of day, year, geographic location, weather, where we are, when and how we move—light-colour-darkness is kinaesthetically related to our actions and attention.
- *Reflected light* has a relationship with us, connecting us to surface/substance materiality and composition (matte, gloss, absorptive, mineral, organic, etc.)—and therefore to visual and sensory *embodied experience*—we can feel what we see.
- Placement of aperture in relation to wall surface has important impact. . .An abutting or closely related perpendicular arrangement of wall and aperture creates a ‘growing’ and ‘stretching’ of the projected light along the wall—giving a sensation of awe and wonder. The effect is enhanced by using colour-as-light to highlight this occurrence, making it more visible, extraordinary and much more emotionally engaging.
- Folding and wrapping of light across planar shifts, curved surfaces, various forms, and/or into enclosures or adjacent spaces creates visual excitement—*colouring the light* makes this action more visible and enhances sensations of playfulness and delight.
- Coloured shadows are created by coloured light interacting with objects and bodies and projecting shadows on nearby surfaces. . .These are seen as complementary colours to the light—they visually *express, make visible*, the existing but largely invisible richness of ambient light-colour in the atmosphere—they can be designed into our architectural/environmental embodied experience.
- Light-colour spreads, radiates, when it lands on surfaces—warm colours, short-wavelength-light seem to spread further—and some surfaces make that light and its spread much more visible and tangible.
- Architectural *natural* light can be developed well beyond the white light and transparency of modernism—natural light can bring colour, materiality and phenomenological experience into play and provide atmospheric, time-based, sensually rich, constantly changing embodied experience that enhances our sense of wellbeing.
- ‘*Aliveness*’ is a fundamental characteristic of light and of nature that we need to *rediscover in our architectural design for human flourishing*. We can use light-colour-darkness and its subtle and vivid relationships with matter and atmosphere to go beyond notions of ‘*décor*’ and challenge mechanistic models of design that impact our minds and bodies. We can create sensitive spatial experiences that support and enhance aliveness in our built environment

through use of light and colour and darkness as key ingredients of space-form-time (architecture) that give us physical, emotional and spiritual energies.

Conclusions

In this study of my own work, I was seeking to reveal, to unconceal, for myself and for others, some important conceptual understandings about what compels us, what could compel us, to further explore colour and light as environmental phenomena.

I hope that this paper offers new insight, deeper understanding or simply corroboration of the findings of others from diverse fields and approaches. This body of praxis provides fertile ground for further work and study about exploration and utilisation of light-colour-darkness in environmental design. It has provided, for me, an evolving awareness of how human embodied experience and human wellbeing belong together, and are implicated in our ongoing development of sensitive and poetic, richly articulated and considered architectural space and place.

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