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Aspects of Light: Colour, Light and Space/Form/Time

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Abstract

‘Colour-as-light’, activated as a ‘natural light’ phenomenon within architectural space/form/time, helps us to see, both physically/literally and virtually/conceptually, the sunlight that moves within our buildings, through daily and yearly cycles. It reveals sensory information, both material (reflectivity/absorption) and immaterial (shadows/ephemeral glow). It showcases natural light as a ‘living’, ‘breathing’, moving environmental element with rich potential for linking human urban experience to the natural world/cosmos.

1. Objectives and Scope

In this practice-based research, experimental installations and commissioned works provide opportunity for observation/documentation. Outcomes situate in the ‘real world’, and lead to further concrete iterations. Installations explore coloured natural light as a reconnection ‘virtual tissue’ between urban human life and cosmological patterns. A key objective is the revelation, through colour, of aspects of light in architecture that are largely ‘invisible’ to our eye/mind when the light is ‘white’.¹

2. Introduction

Natural cycles of lightness/darkness have lost their former hold on the fundamental rhythms of our lives. 21st century urban dwellers live in a ‘controllable’ or ‘out of control’ world of artificial light. Many urbanites have limited awareness of nature’s solar and lunar patterns.² This work explores architecture as a fundamentally ‘time-based’, ‘natural-light-driven’ medium – capable of stronger contribution to our experience of and insight into natural patterns, through use of natural light and colour.

3. Experimentation/Methodology

My long-term research/practice has explored architectural ‘aperture’ as light source, and

¹ This notion of the ‘invisibility’ of the play of ‘white’ light is less pronounced, of course, when highly intentional dramatic effects are created by architects - we may think of famed examples ranging from the Pantheon, to Louis Kahn, Steven Holl and Tadao Ando (Ando 2010).

² A farmer working in the fields has intrinsic knowledge of the changing location and time of sunrise/sunset and sun-angle variance across the year. In a ‘pre-electric’ culture, moon/stars provided nocturnal patterns for living/working. Do urban dwellers understand these cyclical patterns? Can our buildings help them reconnect to rather than obscure natural cycles? Current research points to the importance of light/dark cycles for health/wellness, and the negative impact of ubiquitous night light in cities (Rea 2008). Geography, too, has strong impact – e.g. urban areas in proximity to the poles vs. equatorial locales.

colour as phenomenological aid to viewing light's movement and effects, across space, form and time. "Colour Chords"³ was an installation in a *south-facing* line of windows (2' x 24') perpendicular to and abutting a wall of great height and depth. The wall, along with a 40' x 200' floor space, acted as a projection screen. Sets of colours as 'resonant chords' – four 'chords' of three colours each – made up the linear set. The installation was documented over the course of a year's cycle (Figure 1).

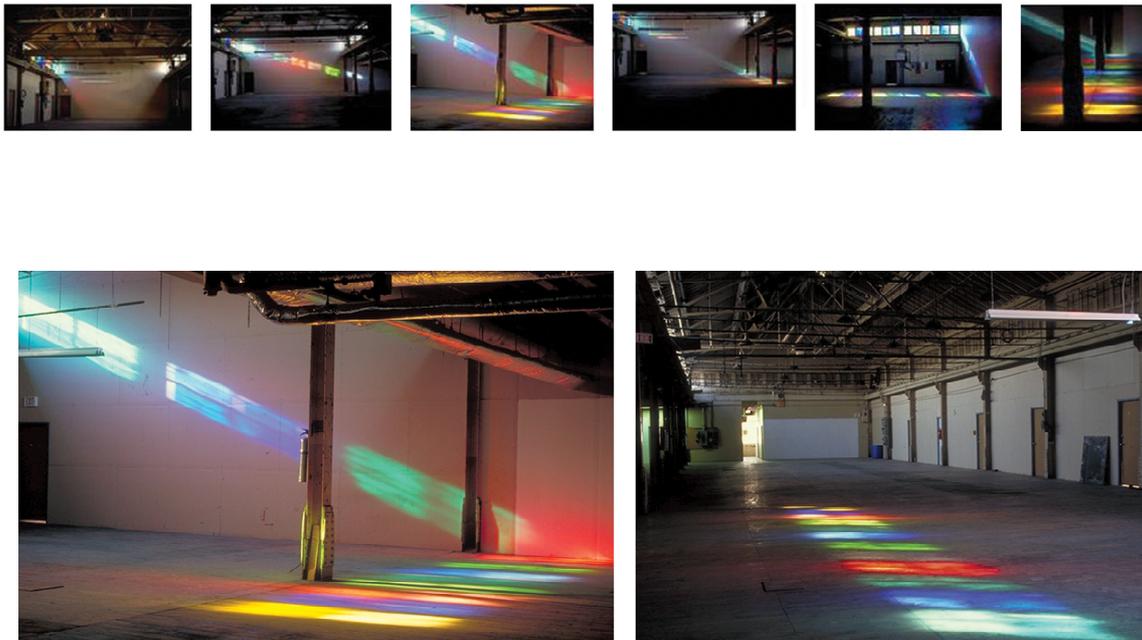


Figure 1 "Colour Chords"

Writing of this work later I noted, "the south facing facade of a building provides a powerful opportunity for work which helps us 'see' the sun's movement across a day and a yearly cycle" (Balabanoff, 1994). Observation and documentation of this project gave tremendous insight into what light was doing in the built form: the first projections appeared on the wall rapidly (early morning, less than an hour); 'stretching' of the squares to increasingly greater lengths occurred as sun rays became more parallel to 'projection wall' plane; movement to the floor plane (parallel/orthogonal) was completed by noon; shifting and angling of the squares into parallelograms occurred along the floor from noon to late afternoon; gradual loss of focus and weakening, and finally disappearance of the projections, ended the day's sequence. There were many other phenomena of note - daily and long-term observation/photo-documentation were my methodologies, along with written notes and explanatory commentaries.

³ "Colour Chord Installation", 1400 Dupont, Toronto, Ontario, Canada, 1992 – mouthblown glass installed in 12 windows 2' x 2'.

Each subsequent project had different orientations, ‘apertures’ and built form configurations. In addition, different clients, programmes and users influenced outcomes. Working within a variety of contexts gave longer and shorter observation and documentation opportunities, and led to different strategies for the work. For example, the “Aspects of Light” exhibition⁴ (Figure 2) was in place for one month (November), requiring an approach that provided colour phenomena for a gallery visitor who might visit once, for a few minutes, within limited opening hours. By contrast, “Eight Tone Poems”⁵, (Fig. 3) a permanent installation for a chronic care facility, required attention to potential impact on cognitively impaired residents and awareness of long-term residency (‘home’ to some patients for 15 years or longer).



Figure 2 “Aspects of Light”



Figure 3 “Eight Tone Poems”

The most recent project is not a pre-existing building, but a house/studio (Reid and Balabanoff) designed specifically to include a south facing ‘aperture’ and interior ‘projection wall’⁶. The building is conceptually related to the sun’s pathway, and the colour/light intervention draws attention to this important aspect of the architecture, while it relates to the surrounding environment and its colour palette.

4. Results/Discussion

If the conventional understanding of window or door is replaced by the notion of ‘*aperture*’, then one may, at least during conceptual design phase of a building, privilege the conceptual ‘function’ of window or door as ‘*opening for light*’. This paradigm shift allows renewed focus on light as a critical space/form/time element. Each building site is in a *unique relationship to the sun*, and therefore has *unique opportunities for constructing a relationship to light*.

In the architectural artworks representing my research and findings, the

⁴ “Aspects of Light“, Artspace, Peterborough, Ontario, 1993 – installation mouthblown glass (east/west facing windows), plate glass, galvanized steel frames, gloss and matte painted frames.

⁵ “Eight Tone Poems”, Freeport Health Centre Kitchener, Ontario 1998 – eight 8’ x 8’ windows, mouthblown glass, acide-etched poems and donor names along corridor/courtyard.

⁶ “Silver Arc House“, Reid and Balabanoff, 2011, Bayfield, Lake Huron, Ontario

colouring of light increases the visibility and the narrative impact of projected and/or ambient light in architectural space/form/time. The works showcase not only the daily and annual cycles of sun angle and movement through space/time, but also the dynamic and subtle actions of light upon space and form. The *'breathing' of light* becomes noticeable (gradual shifts of intensity, sudden flares and fluctuations). Diverse geographic locations and atmospheric conditions yield unique light behaviours. As it moves across surfaces and forms, light highlights textural properties, soft and hard reflectivity, planar shifts and form relationships. Complementary coloured shadows are intensified, and challenge viewers to ponder this strange and wondrous phenomenon.

The work points to many possible new directions in intentional and conceptual incorporation of ephemeral and temporal colour as a potent element of space/form/time in architecture and environmental design.

5. Conclusions

Colour can reveal light's role as a carrier of perceptual and conceptual clarity, which is at once powerful and extremely sensitive. Colour helps us see the light that moves within our buildings, which we take for granted, which is 'invisible' to us largely, when it is white. Colour reveals the fluctuating, unpredictable nature of natural light, and showcases natural light as a 'living', 'breathing' 'vital' element of our built environment. Coloured light is a source of deeply satisfying sensual experience that should be explored further in natural light manifestations within architecture.

With colour-as-light deliberately heightened in space/form/time, the story of light in constructed space is revealed, enhancing human experience and interface with the cycles of light which imbue space/form/time with elemental meaning. An understanding and an affiliation with the natural world is gained, which is vital for mental and physical well-being...the potential for further exploration of the power of colour and light in architecture becomes a rich challenge.

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