BURNING BRIDGE: CONNECTION THROUGH INTERACTIVITY, A DESIGN PROPOSAL FOR THE GRANVILLE BRIDGE

By

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BLA, The University of British Columbia, 1998

A THESIS SUBMITTED IN PARTIAL FULFILMENT OF
THE REQUIREMENTS FOR THE DEGREE OF

MASTER OF ADVANCED STUDIES IN LANDSCAPE ARCHITECTURE

in

THE FACULTY OF GRADUATE STUDIES

(Landscape Architecture Programme)

We accept this thesis as conforming
to the required standard

THE UNIVERSITY OF BRITISH COLUMBIA

September 2004

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21/09/2004
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Title of Thesis: BURNING BRIDGE: CONNECTION THROUGH INTERACTIVITY, A DESIGN PROPOSAL FOR THE GRANVILLE BRIDGE

Degree: MASTER of ADVANCED STUDIES in LANDSCAPE ARCHITECTURE Year: 2004

Department of LANDSCAPE ARCHITECTURE
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Abstract

The Granville Bridge, Vancouver, Canada is an unsafe, uncomfortable and uninteresting crossing for pedestrians. Neither does it possess an identifiable or memorable image. Although the City of Vancouver has identified poor crossing conditions for pedestrians as an issue that requires addressing, the current design for the City's preferred solution – a suspended crossing attached to the side of the Granville Bridge – the current design for this structure does not address how to make the bridge an imageable element in the city landscape. Using the Black Rock Arts Festival – commonly know as Burning Man – as a case study, the potential for an interactive landscape design to create an identity for the Granville Bridge is examined. Although Burning Man fails to create a community that integrates with its contextual landscape, its use of interactive art is successful in creating community among participants. Through the contextual use of interactive art in conjunction with the proposed suspended pedestrian crossing, a design is proposed that celebrates the Granville Bridge as a conduit of motion by revealing the presence of pedestrians. The proposed design includes design components under the north and south ends of the bridge to conceptually ground the image on the north and south side of False Creek, and unifies the total design with the metaphorical and literal use of dance. The design shows that interactive art can be used to make the Granville Bridge an imageable element in the landscape, thereby making it an integral part of the Vancouver landscape.

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Acknowledgements

I would like to thank Susan Herrington, Joanna Staniszkis and Don Luymes for their encouragement and inspiration throughout the development of this thesis.

And special thanks to Thomas for his boundless support.

Introduction

One of the overarching goals of the landscape architect must be to create meaningful landscapes that engage the mind and spirit of those who use them. The training of a landscape architect instills in the designer multiple methods toward achieving this goal, one of which is giving identity to community. The Black Rock Arts Festival, generally known as "Burning Man," provides a model for this process. Burning Man is officially described as "an experiment in temporary community" ("Frequently"), and its successful use of interactive art to foster participation toward this experiment is the particular inspiration for this proposal. But like any model, Burning Man is imperfect. Burning Man exhibits an ambivalent relationship with the landscape it inhabits due to event organizers' vacillating position on contextuality coupled with poorly considered critical aspirations. Yet, used contextually, interactive art has the ability to celebrate the landscape.

This thesis argues that contextual interactive art should be used to celebrate the Granville Bridge, Vancouver, Canada toward identifying community. Specifically, interactive art should be used to invite participation in creating a celebration of the bridge as a conduit of motion, thereby involving people in a shared experience toward creating community. The image of the bridge as a conduit of motion should also be used to anchor the design into the surrounding context. The resulting design concept will make the Granville Bridge a memorable element in the city, conferring on it a distinct and accessible identity.

This thesis begins by introducing the Granville Bridge. Its function and history as a conduit of motion is outlined and the impact of this identity on the experiential and imageable qualities of the bridge is examined. Next, Burning Man's use of interactive art in the creation of community is examined as a model for identifying community through a celebration of the Granville Bridge. Burning Man's attempt to use the resulting community as a commentary on passive consumption and its resulting ambivalent relationship to the contextual landscape are critiqued. Finally, interactive art is applied in a design concept for the Granville Bridge. The design uses the celebration of movement to conceptually anchor the structure in its context and confer imageability toward identifying community.

Chapter One:

The Granville Bridge, a Structure Signifying Connection and Motion

Marco Polo describes a bridge, stone by stone.

"But which is the stone that supports the bridge?"

Kublai Khan asks.

"The bridge is not supported by one stone or another,"

Marco answers, "but by the line of the arch that they form."

Kublai Khan remains silent, reflecting. Then he adds:

"Why do you speak to me of the stones? It is only the arch that matters to me."

Polo answers: "without stones there is no arch." (Calvino 82)

Bridges signify connection. The link between two halves of a landscape created by a bridge further relies upon the connections between the multiple elements that make up the bridge's structure: without contact between the face of the stones, there is no arch. But, from a simple footbridge to a carefully engineered steel and concrete construction, bridges exist solely to facilitate movement across a barrier. This functional identity is powerful enough to have been employed by the human psyche to symbolize a passage between life and afterlife, as conveyed by the legends of many cultures (Chevalier and Gheerbrant 122-124). Fundamentally, it is the desire to move from one place to another that 'supports' the bridge. A bridge, therefore, signifies both connection and motion.

The Granville Bridge – located in Vancouver, British Columbia - is no exception. Its inception and subsequent expansions has been directly related to the needs of commuters. The original impetus for crossing False Creek at this location came from the Canadian Pacific Railway ("CPR"), which wished to draw development from the emerging city of Vancouver on the north side of False Creek to CPR lands on the south side, now known as Fairview Slopes (Macdonald, Fairview 93; Macdonald, Vancouver 22). By placing a bridge at this location, the city would be easily accessible from the new development and people willing to settle there. The crossing was also intended to provide a direct route from Vancouver to the Fraser River (Kluckner 95, Harris 214). The timber trestle Granville Street Traffic Bridge, similar in construction to the CPR Trestle Bridge, opened January 4, 1889. It consisted of two wagon lanes and one 4 foot wide

separated pedestrian walkway, and scarcely cleared the high tide water level. A timber swing span near the north end of the bridge gave passage to marine traffic (Harris 214; Kluckner 95; Macdonald, Vancouver 22).

The second bridge, located to the east of the original and constructed of steel, opened September 6,1909 (Harris 214; Kluckner 95). The new bridge was fitted to carry interurban street-cars, which made communting feasible from the more distant south-shore neighbourhoods of Kitsilano and Shaughnessy. However, as population grew, the bridge became insufficient for the needs of the commuters it had helped to produce; crossing delays caused by marine traffic and accidents in the narrow swing-span became onerous with increased traffic (Kluckner 95). Made inadequate by its own success, the second bridge closed February 4, 1954 when the current bridge opened for use (Davis 214; Vancouver, Archives).

The current Granville Bridge, relocated on the original alignment, was one of three options considered to meet the growing needs of commuters. A tunnel under False Creek was briefly considered by City Council, but was determined to be cost prohibitive. Council also deliberated constructing a double-decker bridge with six upper lanes and four lower lanes dedicated to street-cars but, as these were being replaced by trolley buses, the concept was considered excessive. The third option, a high level bridge, commenced construction in September 1951 (Vancouver, Archives).

The final design cemented the Granville Bridge's function as a transportation conduit. Designed with a 90 foot (approximately 27 metre) clearance at high tide, traffic flow over the bridge was no longer impacted by the passage of boats. Neither would traffic congestion be an issue: the completed bridge carried eight lanes, with four dedicated to trolleys, and two 7 foot (approx. 2 metre) sidewalks elevated 14 inches (approx. 36 centimetres) above the carriageway. To accommodate these uses, the new bridge was designed as the widest outside New York City, whose 90 foot (approx. 27 metre) wide Brooklyn Bridge surpassed Granville Bridge's curb-to-curb width by only 1.5 feet (approx. 46 centimetres) (Vancouver, Archives).

However, conceived from its inception solely as a conduit of motion, the Granville Bridge has never been envisioned as exceeding this narrow identity. The bridge design

responds only to the pragmatic requirements of movement and fails to take into consideration the experiential quality of the journey it embodies. This is particularly onerous for pedestrians, whose crossing takes at least five times[1] that of an automobile, and is not mitigated by microclimate control. The exposed and elevated bridge deck provides no shelter from the climate, including sun, rain and strong winds. The sidewalk, shared by bicycles and pedestrians, is too narrow for comfortable passing. And, due to wide lanes and straightaway conditions, most vehicles pass at excessive speeds making the elevated sidewalk unsafe. Those who cross on foot make direct passage close to the rail and loathe passing on the outside, indicating clearly the effect of these conditions. The bridge design – conceived fifty-three years ago – cannot be expected to have predicted the effects of current traffic speed and density, but it could have provide an experience for pedestrians that offered more than a narrow sidewalk. Except for expansive views of the city, walking across the Granville Bridge is uninteresting, uncomfortable and unsafe.

And, although more than 90 percent of the bridge spans land, most of the spaces it creates are – with the exception of Granville Island, and potentially some of the new north end development – underutilized. This is not to suggest that the primarily automobile-oriented uses located under most of the area under the bridge approaches should necessarily be relocated. As a conduit of movement, association with automobiles is an appropriate connection. And, interestingly revealed semi-industrial areas within the city can provide an interesting juxtaposition to more refined uses.

Neither does the Granville Bridge possess a strong image. Kevin Lynch, in The Image of The City, chose the term imageability to describe "that quality in a physical object which gives it a high probability of evoking a strong image in any given observer" (9). Imageability in the elements of a city means they are identifiable and memorable and contribute to the legibility of that city, making it easy and interesting for people to navigate. Imageability contributes to community by creating for it a visually accessible physical identity. Those who dwell within a highly imageable landscape consider that landscape an integral part of the community. The Granville Bridge was constructed

[1] This is a conservative estimate using the assumption that the average automobile crossing takes approximately 5 minutes, while the average pedestrian crossing takes approximately 25 minutes, as based on personal experience.

under three separate contracts: 1) the central structural steel span; 2) the north end approach, including Seymour Street, Howe Street and Pacific Street connections; and, 3) the south end approach, including Fourth Avenue, Fir Street and Hemlock Street connections as well as the pedestrian underpass at Fifth Avenue. Conceived of as three separate pieces, the bridge has never been imagined as an identifiable and memorable whole.

This fault can be contributed to the weak visual impact of the bridge. The Granville Bridge has a large physical presence in the city – it reaches from the Howe Street on-ramp on the north side 1,400 metres over False Creek to the Fir Street off-ramp on the south side,[2] and spreads east-west over three streets and two blocks on the north side, and four streets and three blocks on the south side. And, although bridge-encompassing views are greatly blocked by surrounding buildings, the structure is extensive enough to contribute to views from virtually all the neighbourhoods surrounding False Creek. Yet, viewed from without, the Granville Bridge visually recedes in the landscape. Neither its shape, colour nor composition conferr distinction. It is only when experienced from below that the intricate lattice-work of the central steel span and cathedral-like columns of the concrete approaches elicit memorability. However, this response is generally an incidental corollary of visits to Granville Island or frequenting businesses or streets located under the bridge, not due to an explicit desire to celebrate or reveal the structure. Despite its large physical presence, the Granville Bridge lacks imageability.

This thesis proposes a design that celebrates the bridge as a conduit of pedestrian[3] motion toward giving identity to community in the city of Vancouver. Specifically, this design uses interactive art that, through the act of pedestrians using the bridge, reveals their presence to transform the Granville Bridge into an imageable element in the cityscape. This design also incorporates the motion of dance – both physically and metaphorically – to contextually ground the image of the bridge, just as the concrete

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[2] Although the street grid in this part of Vancouver is laid out approximately 45 degrees off north-south, most Vancouverites orient themselves within the city by cognitively associating the view of the North Shore Mountains with a northerly orientation. For the purposes of this thesis, the cognitive orientation will be used, conceptually placing the Granville Bridge on a north-south alignment.

[3] For the purpose of this design, pedestrians are considered to be all those who would normally cross the bridge by way of the sidewalk, including: people on foot, skateboard, rollerblade, bicycle or other non-motorized recreational vehicle; people in wheelchairs, on scooters, or using other motion-assist devices; and animals, primarily dogs.

approaches physically anchor the steel span to the north and south sides of False Creek. At the same time, this design recognizes the contribution of pragmatic features to the experiential quality of the journey by making the crossing safe and comfortable for pedestrians.

Chapter Two:

Burning Man, an Interactive Landscape Through Interactive Art

The Black Rock Arts Festival, generally known as Burning Man, is an annual art festival that takes place in the Black Rock Desert of Nevada for the seven days preceding and including the first Monday in September – Labour Day. Despite its title, organizers and participants – self-titled "Burners" – describe Burning Man as embodying a broader experience than would typically be expected of an arts festival. Pose the query: "What is Burning Man?" – and it will elicit such a variety of responses that the meaning of the event seems to defy description.[4] Yet, in 2003, more than 30,000 people[5] travelled to the salt flat desert, located to the north-east of the towns of Gerlach and Empire – combined population 499 in 2000, as recorded by the United States Census Bureau (Census) – to provide the labour and populace to construct and enliven what has been dubbed "Black Rock City" – the physical manifestation of Burning Man. The event features performed and installed art pieces, virtually all of which invite or rely upon audience participation, and culminates on Saturday night in the ceremonial burning of the 40 foot high centerpiece – the eponymous wooden and neon human figure known as "the Man." But more than the spectacle, what makes Burning Man identifiable and memorable is the physical manifestation of the organizers' desire to create community – the interactive art.

Burning Man is officially described as an experiment in the creation of temporary community ("Frequently"; Harvey Not Art 134). The Burning Man experiment stimulates the formation of community by promoting the installation and performance of interactive art throughout Black Rock City. The Black Rock Arts Foundation, founded by Burning Man organizers in 2001 as a means of promoting interactive art outside of the festival, defines interactive art as:

> designed to be touched, handled, played with, and moved through in a public

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[4] Brad Weiners, editor of Burning Man, has collected these responses: a "Labour Day Fete," "an outbreak of millenial fever, an acid trip sans LSD, a stadium concert without bleachers, and an elaborate excuse to party," "decadent, an ecological disaster," "a spiritual awakening, a religious experience," "Disneyland in reverse," "a flea market Las Vegas," "Woodstock inside out," "an experiment in community," a "sudden community," and "a sort of Twilight Zone parody of the professional expos, political conventions, and trade shows" (131).

[5] Approximately twenty people attended the inception of Burning Man in 1986. Participation has increased rapidly, and in 2003 an estimated 30,586 people attended ("Burning").

> arena. It is art that elicits a collaborative response from its audience, even as it encourages collaboration between artists. It deliberately blurs the distinction between audience and art form, professional and amateur, spectator and participant. It is art that is generated by a way of life, and it seeks, in its broadest aims, to reclaim the realms of nature, history, ritual and myth for the practice of art.' ("Black")

While this definition is vague in terms of larger goals, it is specific with respect to the relationship between art and audience. Interactive art is designed to be physically engaging such that the presence of the audience contributes to the piece and in doing so becomes an integral part of that piece. In other words, interactive art engages spectators in participation. And, interactive art is not fully realized until this participation occurs. It is this participation, this sense of communion – of "sharing or holding in common; participation; community" ("Communion," def. 1) – that the Burning Man experiment seeks to create through interactive art.

The interactive art of Burning Man varies in its size, complexity, and the mode and degree of participation it elicits. Certain pieces invite modification, such as a temple constructed of mass-produced balsam model pieces, which was covered with writing by participants over the course of the week. Others invite physical manipulation: a Sisyphusian wheel of welded steel which, once climbed into, was meant to be rolled around the desert like a giant hamster wheel. Many of the Theme Camps – dedicated to performance art and themed events – invite role playing requiring people to carry out certain actions in exchange for rewards. Other performance pieces create participation by situating the audience on the 'stage,' as with the Mad Max Beyond Thunderdome inspired motorycycle, chain and fire battle, which was meant to be viewed by climbing onto and up their aluminum-frame 'Thunderdome.' Other pieces simply invite one to sit and watch surrounding events. But even these – a motorized couch on wheels, and a mobile cocktail bar – transform the audience into participants who both watch and are watched as they travel through the desert.

While Burning Man is intended to create temporary community, this goal is connected to the critical aspirations of event organizers. Counter to their claim that the event has no assigned meaning (Harvey, Not Art 132; Davis 135) – organizers, participants and

founder Larry Harvey are adamant that the event, and particularly the Man, can signify anything, allowing people to participate in the assignation of their own interpretation of meaning. Burning Man seeks to communicate its own particular metanarrative – the critique of a passively consumptive market-based culture. Burning Man organizers see the passive consumption of mass-produced commodities generated by a market system as antithetical to the formation of community, which is founded in participation (Harvey, Not Art 134; "Art"). Burners attempt to critique this system by appropriating the mass-produced symbols of the market and reinvesting them with new meanings in the creation of interactive art and the formation of a community based in active participation rather than passive consumption ("Art").

However, the Burning Man critique is ineffectual. A critique functions through juxtaposition with the matter of its commentary. It must be visibly comparable to the status quo by those within whom the critique intends to effect change. This means, for a critique to be successful, it must be contextually enacted: associated with no particular thing, a critique can be related to anything, and therefore means nothing (Soja 21). Located in the Black Rock Desert, the Burning Man critique is isolated from its context – market based culture – and is thus powerless to effect change.

Hyper-relativity is also evident in Burning Man's enactment of its attempted critique. As an intended critique of conventional consumption, the event is modeled as a gifting society in which virtually nothing can be purchased, but much can be obtained through barter, sharing, and the giving and receiving of gifts. However, Burning Man exists by exploiting the very system it seeks to challenge. Virtually all the goods required to survive in the desert landscape, including water, food and shelter from sun, wind and rain, goods brought for exchange, as well as the materials used in the construction, servicing and maintenance of Black Rock City, and the vehicles and fossil fuels used in their transportation to the Black Rock Desert have their source in the mass production of a market society. On the official website, Burning Man memorabilia is available for purchase: the Burning Man logo has been attached to the same clothing, posters and calendars offered at any conventional gift shop. Camp Café and Camp Artica, two officially run camps, are the only camps permitted to sell goods: beverages and ice respectively. Even when enacting a critique of consumption, it would appear to be too onerous to forfeit coffee and cold cocktails. And, those wishing to attend Burning Man

have, since 1997, had to pay an entry fee. The price for a ticket purchased at the event was $350.00 USD ("Tickets"). Burning Man organizers justify these choices by citing the need for economic viability ("Designing"; "Marketplace"). But, in doing so, Burning Man contributes to the malaise it purports to subvert.

Burning Man organizers attempt to circumvent the effects of decontextualization by citing the physical space and contextual autonomy of the desert as necessary conditions for nurturing the "radical self expression" (The Meaning; see also Not Art 133) that they believe is the foundation of Burning Man in its current expression. Participants also cite this perceived "context of no context" (Wieners 131) as a source of creative freedom. However, assuming this stance only serves to further decontextualize the event by failing to acknowledge the position of the event within a storied landscape. The Black Rock Desert is managed by the U.S. Department of the Interior Bureau of Land Management, which records a rich history for the area, including: the remnants of Pleistocene era Lake Lahontan, ecologically fragile Parna Dunes, varied wildlife, a history of settlement including the Paiute tribal homeland, mining routes, and the breaking of the sound barrier on land October 15, 1997. The remnant lakebed, the portion of the desert in which Burning Man is held, is one of the largest flat areas on earth. As one 19th Century surveyor noted: "there is no place just like this place anywhere near this place so this must be the place" (Department). But these experiences, inhabitants, and processes are not referenced by Burning Man, either in the layout of Black Rock city or in the directives designed to guide the experiment toward the creation of the community. Burning Man occupies the landscape without comprehending it: even when "[y]ou're there, you're Nowhere" (Davis 135).

However, Burning Man organizers' innate response to the landscape, as made manifest by the physical evolution of Black Rock City, belies the contention that they recognize no context. Since its relocation from San Francisco to the Black Rock Desert in 1990, the layout of Burning Man has taken a circular shape, initially due to "an instinctive urge to round the wagons" ("Designing"). Participants responded to the vast openness of the desert by defining space with the configuration of their camp. By 1998, this urge had been formalized into the now the standard radial pattern with the Man as its physical, 40

foot high[6] axis mundi, the cosmic axis whose position makes the surrounding territory habitable. The general layout of Burning Man is clearly a result of the instinctual desire to create structure in direct response to the physical context of the Black Rock Desert. By responding to this desire, Burning Man organizers exhibit at least an unconscious recognition of their context as well as apprehension of the very contextual freedom they purportedly desire.

In fact, Burning Man organizers have created an elaborate physical context in the layout of Black Rock City – an overt contradiction to their desire for contextual freedom, but ironically employed toward achieving the same goal of creating community. The elements of black rock city correspond with the elements of city image: paths, edges, districts, nodes and landmarks – which Lynch identified as a means of creating an identifiable and navigable cityscape (46-48). The Man is visibly located at the centre point of the radial and bilaterally symmetrical layout. Streets radiate out from and concentrically circle around the Man. The layout is generally divided into two districts: camping and the "Playa" – the area of desert within the first 2,000 feet of the Man ("Designing"). Center Camp – the official social node of Black Rock City – is located on axis to the Man at the edge between camping and the Playa. Theme Camps also define this edge. Burning Man organizers intend this arrangement of elements to create a landscape that participants can easily relate to such that they feel unified with each other and the Man "by some transcendent principle" ("Designing"). To create community, Burning Man organizers have imposed context through the layout of Black Rock City.

In fact, Burning Man is physically contextual to just that – the Man. Organizers have created an elaborately self-referential landscape that is physically and psychologically oriented on the Man, and generally disregards the indigenous landscape. This contextual tunnel-vision parallels the thematic, in which Burning Man organizers, occupied with an attempted critique of a mass-market society, fail to recognize their passive consumption of the landscape they temporarily inhabit. It is also reflected in the ambivalent relationship between Burning Man and the landscape. Burning Man organizers purport to have designed the physical arrangement of Burning Man to include

[6] Since his original 8 foot inception, the Burning Man has varied in size from 20 feet to 50 feet, and has reached 80 feet including the base. The height of the Man itself appears to have stabilized at 40 feet ("Burning").

the landscape in their community ("Designing"). The camp extends around only two-thirds of an arc, with the remaining one-third included in the Playa. No camping is permitted in the Playa, although many camps incorporate art. This configuration is intended create a connection between Black Rock City and the landscape: the open edge is an area of flux, where the landscape is drawn into the city and participants are drawn out, enticed by the art installations.

However, beyond this perfunctory link, no attempt is made to reference the contextual landscape. Nowhere is this more apparent than in the interactive art installations, which, created in conformance with an arbitrarily chosen yearly theme[7], generally express no relationship to the landscape, either in their construction, their message or their physical positioning. Rather than include the landscape in their community, Burning Man has transformed the Black Rock Desert into an art gallery, available for use by whomever is willing to pay the entry fee. That this entry fee goes toward the cost of the U.S. Department of the Interior Bureau of Land Management permit required to hold the event only exacerbates the fact that that Black Rock Desert has been commodified.

Burning Man organizers have mired the event in a failed critique from which Burning Man is contextually dissassociated. In attempting to reconcile this condition, Burning Man's organizers vacillate between the imagined creative freedom of decontextualiziation and the instinctive urge to create and respond to context. The insistence of contextual freedom has inhibited Burning Man organizers from recognizing and forming a relationship with their physical context – The Black Rock Desert. Although, the use of interactive art does succeed in the creation of community, this community is limited to Burning Man participants. For, unlike traditional nomadic people who, using an axis mundi to mark the location of their temporary settlement, dwell within their contextual landscape, Black Rock City has been superimposed onto rather than integrated into the desert. So, although Black Rock City is made imageable by its attentive layout, the landscape is not an integral part of the resulting community. Black Rock City could be located anywhere.

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[7] Yearly themes were introduced to Burning Man in 1998 and have included, to date: "Nebulous Entity," "Wheel of time," "The Body," "Seven Ages," "The Floating World," "Beyond Belief," and "Vault of Heaven" ("Burning").

Chapter Three:

Connection Through Interactivity, a Design Proposal for the Granville Bridge

As illustrated by the Burning Man model, interactive art may be used to create community through participation. Used without referencing the context within which it is located, the community created by interactive art does not integrate or integrate into the landscape. But, used to celebrate or reveal elements of the landscape, interactive art has the potential to make those elements an identifiable and memorable part of the landscape. The goal of this design for the Granville Bridge, then, is to use interactive art in this way to make manifest community by fostering social interaction and creating an imageable landscape considered integral to the community.

With no shelter and narrow sidewalks, the Granville Bridge is not only uncomfortable, but also unsafe for pedestrians[8]. But the bridge is an important conduit for the movement of people; it directly connects downtown Vancouver with surrounding neighbourhoods and Granville Island. City Council has recognized the need to address this issue and, in July 2003, commissioned civil engineering and architecture firm Delcan to undertake a study to appraise potential False Creek crossing options (Pledger). Along with options for crossings at the Burrard Street and Cambie Street bridges, two alternatives were presented in association with the Granville Bridge at three public open houses: reducing the number of lanes on the bridge deck to make space for separate bike lanes and widened sidewalks; and, a suspended crossing mounted to the west side of the bridge (Vancouver, Municipal). In March 2004, City Staff recommended that Council pursue improvements at the Burrard Bridge, but supported the suspended crossing as the preferred option for the Granville Bridge, should Council wish to pursue further improvements at a later date (Pledger).

The suspended crossing is a 6 meter wide platform connected to the west side of the Granville Bridge. The crossing continues from north of Beach Avenue to Island Park Walk in the south, ramping up from either end at a 5 percent slope to a central level

[8] Again, for the purpose of this design, pedestrians are considered to be all those who would normally cross the bridge by way of the sidewalk, including: people on foot, skateboard, rollerblade, bicycle or other non-motorized recreational vehicle; people in wheelchairs, on scooters, or using other motion-assist devices; and animals, primarily dogs.

section that generally corresponds with the channel crossing. The suspended crossing extends the full length of the central steel span, continuing 250 meters beyond on the north end, and 50 metres beyond on the south end. The suspended crossing features a 1.4 meter guardrail on each side and is described as having separated pedestrian and bike lanes. Where the platform of the suspended crossing is situated lower than the bridge's structure, it is mounted by reverse cantilever and supported by cable stays. Where the platform is level with the Granville Bridge's structure, it is cantilevered.

Having been carried out by an engineering firm, it is not surprising that pragmatic rather than image considerations guided the design of the suspended crossing. The bridge is not considered by the City to be a heritage structure and, while the evaluation summary of the options lists the potential for views of the bridge to be impacted, consultants' only conclusion is that there remains "the opportunity to enhance/degrade the existing features of the bridge with respect to the current image provided" (Vancouver, Municipal). But neither does the suspended crossing fully ameliorate physical crossing conditions for pedestrians. The suspended crossing largely resolves some of the safety, space and shelter issues; physical separation from vehicles and between pedestrians and cyclists, and location on the sheltered western side of the bridge are all elements of the proposal. However, separation from the street could be less safe in terms of personal attack, and, although sheltered from the sun and rain, the suspended crossing will receive only limited screening from wind. Of the two options considered for the Granville Bridge, the suspended crossing was preferred by the consultants primarily because it creates a more direct route between downtown Vancouver and Granville Island. The imageability of the bridge in the city and quality of the journey in terms of interest for pedestrians appear to be negligible considerations.

However, while the suspended crossing does not perfectly meet all of the needs of crossing pedestrians, it comes close. And, the suspended crossing inadvertently locates crossing pedestrians directly adjacent to the one memorable element of the bridge – its steel structure. These qualities make the suspended crossing an interesting and feasible concept within which to begin incorporating the design goal of this thesis.

This design makes visible pedestrian use of the Granville Bridge toward identifying community and does so through the metaphor of movement. The Granville Bridge is a

structure both dedicated to and consisting of movement from one place to another. While people use the bridge to travel across False Creek, the bridge itself also passes over the city landscape. And as it moves from high ground over False Creek to high ground, the structure of the bridge changes from concrete to steel span to concrete. Within these sections, there are further refinements of structure, so that as the bridge moves, it does so in a series of steps. This design specifically references the choreography of bridge and pedestrians to create a memorable identity for the Granville Bridge. The design achieves this with three elements that correspond with Granville Bridge's separation into three separate construction contracts: the central span Freeze Form Crossing, the north end approach Troll Club, and the south end approach Graffiti Dance Rooms. Because this design celebrates the bridge of a conduit of motion, it further references the movements and forms of break dancing and the associated street art, graffiti as a metaphor to unify the three design components. Together, these three elements combine to transform the Granville Bridge into an imageable element in the city.

The Central Span: Freeze Form Crossing

The movements of break dancers consist of a series of moves generally involving contorting the body into shapes supported at one or two points by hands, elbows, the head, or the back, with the limbs in the air, followed by a "freeze" or pose in one of these shapes. Graffiti has its source in the same urban Hip Hop culture as break dancing ("Hip Hop"). Not surprisingly, the shapes utilized in graffiti, particularly those in a tag – the artistic rendering of a graffiti artist's name – are reminiscent of those formed by the bodies of break dancers. The highly stylized letters of tag graffiti, with varied thickness within each letter, some element of perspective, and deliberate strokes, create a dynamic and intentional expression, which captures the essence of the break dance in graphic form. This design references break dancing and graffiti. It incorporates into the suspended crossing nineteen large, three dimensional, hollow "Freeze Forms" modeled after the shapes found in graffiti and each representing a move, or freeze, in the break dance. The Freeze Frames are constructed of powder coated aluminum framework with taut acrylic fabric skin and weave in and out of and are mounted to the cable stays of the suspended crossing. The Freeze Forms appear to balance on one or two points. Like a graffiti tag, the shape of the Freeze Forms exhibit varied thickness and have deliberate

lines. As three-dimensional objects, the Freeze Forms naturally achieve perspective, and this is enhanced by their twisting from side to side as they weave through the steel support stays.

The form of the Freeze Forms relates to the structural changes in the steel span. The central span consists of cantilever sections and four span types: suspended, simple, and anchor – mounted on reinforced concrete footings over wood pilings (Vancouver, Archives). The steel span passes over False Creek in a series of steps marked by the change in structural type. The bearings that connect these structures to each other and the footings also vary between pin, rocker, roller and fixed. Each Freeze Frame corresponds to one structural step of the bridge: the length of each corresponds to the length of the particular structural type it runs parallel to, while the form of the termini of each – small and closed; large, open and angled to the east; large, open and angled to the west; and, large, open and facing directly west. – corresponds to the type of bearing used. Where the suspended crossing continues beyond the steel span, shorter sectional pieces of the Freeze Frames are situated in conjunction with the location of concrete footings. These correspond to the cadence of both the structure and the break dance step known as "toprocking" ("Hip Hop"), which preceeds the more acrobatic steps of the dance as a means by which the performer becomes accustomed to the music's rhythm. Together, the shape of graffiti tag letters and break dancing freezes, and the form of the bridge structure inform the design so that the Freeze Forms appear to be moving across the bridge according to a series of choreographed dance steps.

Mounted within the Freeze Forms are light-emitting-diode ("LED") fixtures, which are capable of creating a uniform colour wash when projected onto the inner surface of the Freeze Forms. Whether viewed from below or at a distance, the Freeze Forms appear to glow with colour. This light will gradually change in both colour and intensity: LED fixtures are capable of creating a gentle transition using over one-hundred shades. The intensity of light is controlled by computer and, using information gathered from motion sensors at all thresholds, directly corresponds to the number of pedestrians using the suspended crossing at any one time. The colour of light is controlled directly by pedestrians who, by stepping on pressure sensitive panels located on deck of the suspended crossing platform, can increase or decrease the amount of red, green or blue light contributing to the light being seen. These "Colour Steps", like the dance steps

illustrated on the floor of a dance studio, draw pedestrians into patterns of motion, causing them to 'dance' across the Freeze Form Crossing. When the crossing is empty, the Freeze Forms are dimly lit but, as more people enter the crossing, the light becomes more intense, reaching its brightest when many people are on the Freeze Form Crossing, such as during special events. LED "cat's-eye" lane dividers – mounted in the deck of the bridge between the lanes over the length of the bridge corresponding to the extent of the suspended crossing –display the same colour and intensity of light. The nuance of light brings the choreography of pedestrians moving on and off the crossing into the dance of the Freeze Forms.

The Freeze Form Crossing celebrates the Granville Bridge as a conduit of motion. The Freeze Forms are interactive art pieces that, through motion sensors and the Colour Steps, physically engage pedestrians in contributing to the full expression of the piece toward revealing the movement of pedestrians on and off the Freeze Form Crossing. Their shape and form – derived from the shapes of break dancing and graffiti, and the step-by-step changes of the Granville Bridge's structure – evoke the steps of a dance performed alongside this section of the Granville Bridge. Although the Freeze Form Crossing relocates many pedestrians on the side of the Granville Bridge, their presence is made visible to drivers on the bridge in a subtle, unobstructive manner. The Freeze Form Crossing makes the Granville Bridge identifiable and memorable to both those using the bridge, and those viewing it from afar. With the addition of the Freeze Form Crossing, the Granville Bridge will become an imageable element in the city. But, the Granville Bridge is a massive intervention in the city landscape and, as such, this image must extend beyond the steel span crossing of False Creek to the bridge's outer extents. To do this, this design manifests literally the dance metaphor under the north and south bridge approaches.

The North and South Approaches: Dancing Under the Bridge

This component of the design – for the north and south ends of the Granville Bridge – continues the celebration of the bridge as a conduit of motion to the ends of the bridge, and connects this image to the context of adjacent use. The section of Granville Street at the north end of the Granville Bridge has been designated Vancouver's nightclub district. Many city clubs have relocated there and, on weekend nights, that length of Granville

Street is brimming with revelers. This design locates a twenty-four hour dance club – the Troll Club – under the north end of the bridge, and three public break dancing spaces – Graffiti Dance Halls – under the south end.

The Troll Club occupies the space between the Continental Hotel and the Black Top Cab Company, in four spaces created by the footings and bridge deck as it slopes down to meet Granville Street in downtown Vancouver. These spaces are converted to rooms, with the addition of walls, doors and interiors. The programme for the club includes: a comfortable place for people to form a line outside, ticket booth and coat check room; lounge and bar area with visual projections; a separate dance are with DJ booth and visual projections, washrooms, an office, a staff lounge, and storage and delivery space. In-ground LED fixtures marking the corridor to the dance floor glow with the same light as emitted from the Freeze Forms. The area under the north end of the Granville Bridge is an ideal location for the Troll Club. Its location at the edge of Vancouver's nightclub district extends this use into an otherwise underutilized space. The bridge's concrete construction will muffle the noise of music. And, as the club is located adjacent to the Black Top Cab Company, dancers will easily find safe transport home. The club is programmed as a defensible and privately managed space, with secure walls and doors – it is the troll under the bridge.

The Troll Club enacts literally at the north end of the Granville Bridge the dance metaphor used for the Freeze Form Crossing to anchor the bridge's identity on the north side of False Creek, and conceptually connect it to the context of the Granville Street nightclub district. At the south end of the Granville Bridge, beneath each of the concrete approaches where the bridge is closest to the ground, a continuous concrete footing meets the bridge deck, creating the roof and wall that define a small outdoor room. In three of these spaces – one each under the Hemlock Street on-ramp and the Granville Street approach adjacent Fourth Avenue; and, one under the Fir Street off ramp adjacent Seventh Avenue – this design locates a Graffiti Dance Hall. Intended for the free use of break- or other dancers, the programme for the Graffiti Dance Halls consists of a level concrete platform incorporating seat stairs, an electrical outlet and water fountain. The walls of the Graffiti Dance Halls are finished with graffiti art, and LED fixtures under the nosing of the seat stairs glow with the same light as emitted from the Freeze Form Crossing.

The three components of this design – Freeze Form Crossing, Troll Club, and Graffiti Dance Halls – create a unified image that reaches the length of the bridge. The Freeze Form Crossing uses interactive art to celebrate the bridge as a conduit of motion, and makes visible this celebration to those on the bridge, those viewing the bridge from afar, and those using the three design components. The Troll club and Graffiti Dance Halls extend the metaphor of dance, used to guide the form of the Freeze Forms, to ground the design in the outer extents of the bridge, just as the concrete approaches anchor the steel span to the north and south side of False Creek. The Troll Club also connects the bridge to its adjacent context, and extends Vancouver's nightclub district over and under the bridge. The light of the Freeze Forms is also incorporated in the Troll Club and Graffiti Dance Halls – just as on the deck of the bridge – subtly revealing the presence of pedestrians on the Freeze Frame Crossing to those using either of the spaces. Together, the Freeze Form Crossing, Troll Club, and Graffiti Dance Halls make the bridge an imageable element in the city.

Chapter Four:

Conclusion and Future Work

Conclusion

Giving identity to community is one way in which a landscape can engage the mind an spirit of those who use it. To achieve this, a landscape design must be grounded within its physical context; a community is defined by a shared identity, both social and physical. Burning Man is successful in its use of interactive art to create community between the participants of the event. But, focused on a decontextualized critique, Burning Man organizers fail to recognize or reference the landscape in which their experiment is located. As a result, the Black Rock Desert is not made an imageable and integral part of the Burning Man community. Black Rock City could be located anywhere. But, used as a means by which to celebrate landscape elements, interactive art has the potential to involve people in the identificaiotn of community based on a shared social and physical identity.

The design for the Granville Bridge proposed herein does just that. Using an existing proposal for a suspended pedestrian crossing, which has support for future exploration by Vancouver City Staff, this design makes the Granville Bridge an identifiable element in the city using interactive art that specifically references the bridge as a conduit of motion. This design is further contextualized though the metaphor of dance, which cognitively connects the central span to the concrete approaches, and the adjacent nightclub district. Made unique through contextuality, this design could be located nowhere but on the Granville Bridge.

Finally, in its use by this design to give identity to community, the Granville Bridge has come to signify not only motion, but also connection. Whereas the Granville Bridge previously only provided a conduit of movement from one side of False Creek to the other, through this design it is connected to its context and its community. While the desire to move from one place to another may support the bridge, ultimately, it is connection that supports its position in the community.

Future Work

Burning Man is a complex and interesting social experiment. Drawing from the conclusions of this thesis, interactive art could be specifically applied at Burning Man to celebrate the Black Rock Desert toward grounding the event in its context. As an addendum to that exploration, it would be interesting to experiment with the form of Black Rock City to see how it would have to change to integrate and become integrated into its context. Alternately, it would be interesting to relocate Burning Man in its context – the city – and examine how the expression of the event, including the form of Black Rock City, would have to change in response to that context. The choice to utilize the suspended crossing as the foundation of the design experiment contributed to the resulting design solution. The alternative solution presented to Council involves reducing the number of automobile lanes on the bridge deck to provide separated bicycle lanes and widened sidewalks. It is possible that the alternative solution could be selected. In this case, this same design experiment should be carried out under the alternative conditions to ensure that the resulting crossing not only makes crossing the bridge a better experience, but also makes the bridge an identifiable element in the city.

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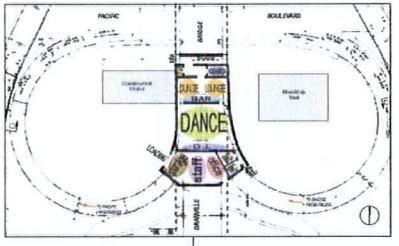
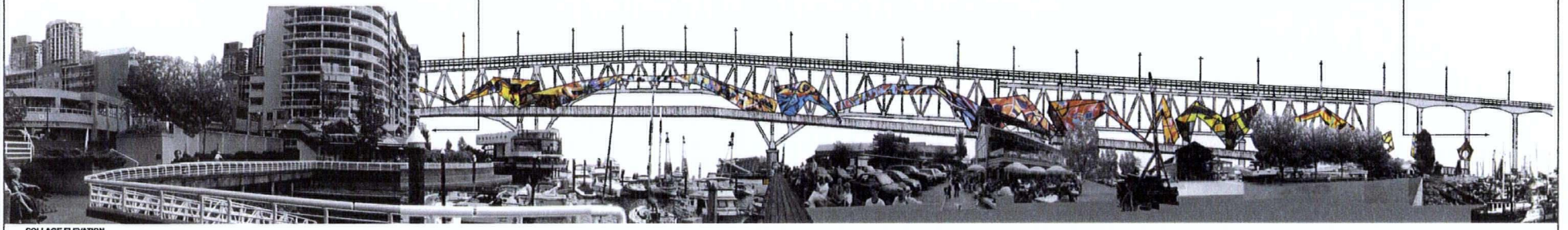
Appendix One:

Design Boards

TROLL CLUB concept



DANCE ROOM concept



COLLAGE ELEVATION

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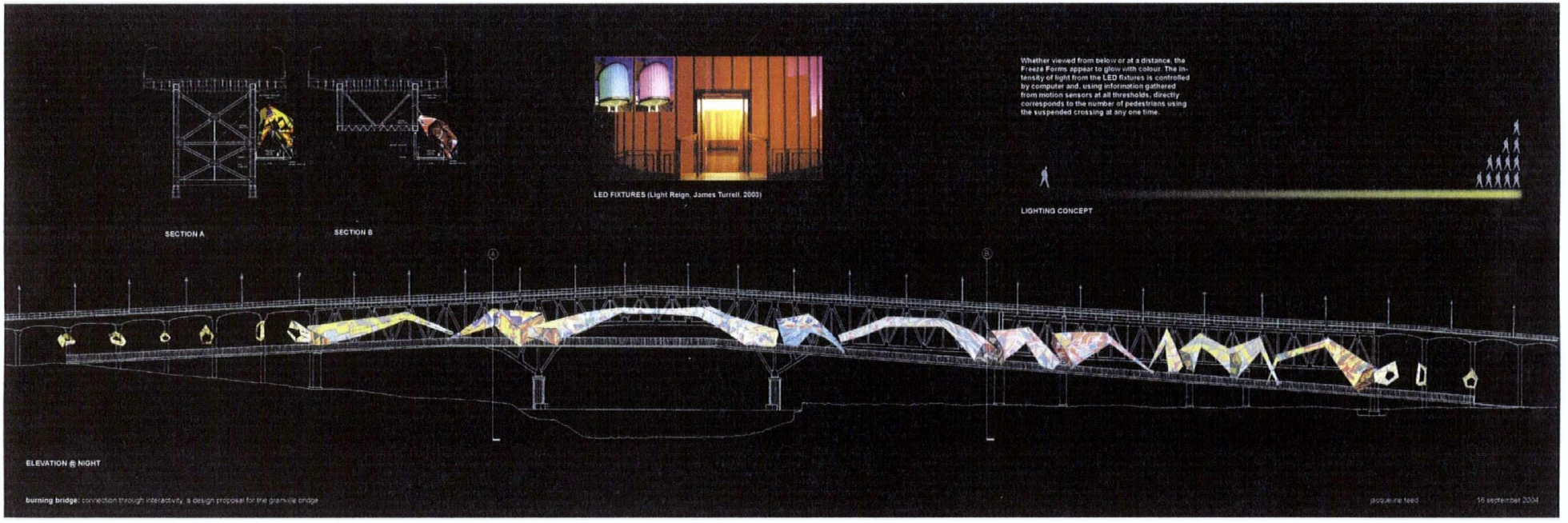
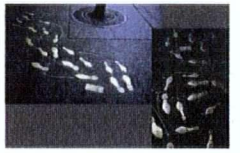
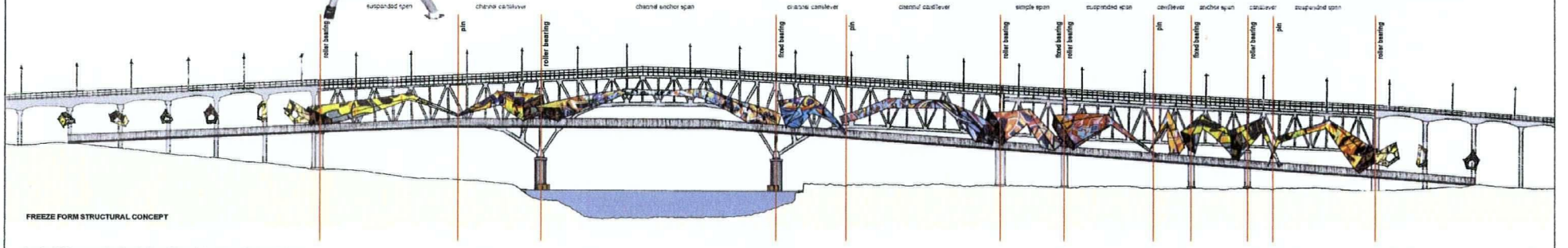

SECTION A
SECTION B
LED FIXTURES (Light Reign, James Turrell, 2003)
Whether viewed from below or at a distance, the Freeze Forms appear to glow with colour. The intensity of light from the LED fixtures is controlled by computer and, using information gathered from motion sensors at all thresholds, directly corresponds to the number of pedestrians using the suspended crossing at any one time.
LIGHTING CONCEPT
ELEVATION @ NIGHT
burning bridge: connection through interactivity, a design proposal for the granville bridge
jacqueline teed
16 september 2004

FREEZE FORM SHAPE CONCEPT



FREEZE FORM COLOUR STEPS (Dance Steps, Jack Mackie)



FREEZE FORM STRUCTURAL CONCEPT

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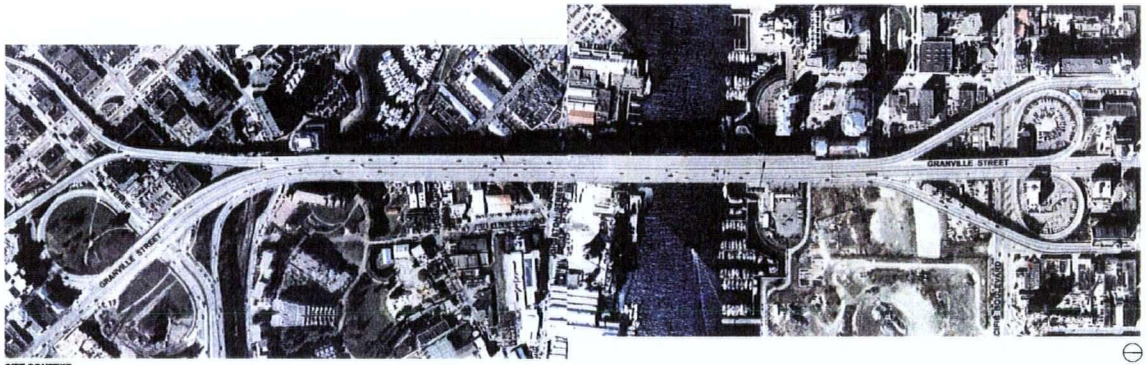
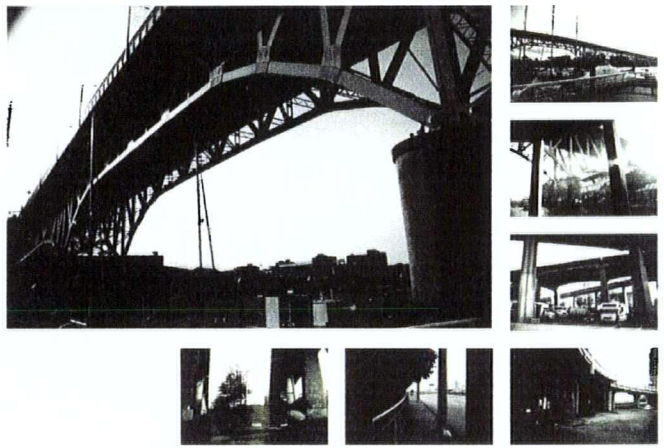


SITE CONTEXT



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Department LANDSCAPE ARCHITECTURE

Title of thesis: BURNING BRIDGE: CONNECTION THROUGH INTERACTIVITY, A DESIGN PROPOSAL for THE GRANVILLE BRIDGE

Accompanying Materials: ☐ Yes ☑ No

If yes, indicate type: N/A

List keywords that describe your thesis topic (be specific and use as many as possible:

landscape architecture, design, bridge, imageability, Burning Man, Granville Bridge, Vancouver, pedestrian, art, interactive, place, graffiti, break dance, night club, lighting, motion controlled, contextual, festival, critique, desert, motion, connection, community, identity, visibility, sidewalk, crossing, Black Rock Arts Festival, Nevada, Black Rock Desert, interactive art, dance

Thank you for your assistance.