INFRASTRUCTURE, PRODUCTION, AND THE PUBLIC REALM

by

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This project posits the need for a design approach to the use of urban sub-infrastructural spaces as public space. The potential held within these neglected parts of the city presents opportunities for the integration of architecture and landscape.

The site beneath the infrastructure of the downtown Granville Bridge is one of the last remaining undeveloped parts of downtown False Creek. Surrounded by extreme residential density, the site is formed by the infrastructure creating a unique space unlike any other in the city.

Artists involved in small scale industrial production such as textile, fashion, film, and furniture, rely on the city for survival. The design, prototype, production, display, consumption, and involvement of these activities within the public realm are important components to the identity and vigor of any metropolitan city.

This project will explore, capture, and capitalize on the unique landscape qualities of partial enclosure provided by the bridge structure. This existing condition provides a spatial quality that is suggestive of opportunities for the integration of interior and exterior functions. With appropriate design intervention this place can become a unique public space while fulfilling the need for a production and entertainment space in downtown Vancouver.
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The term 'production' has changed in meaning much like the land uses associated with its processes. Almost every city situated on a water course experienced a period of rapid industrialization and housing for workers. Mid-century post-war activity produced a second wave of industrialization focused on transport infrastructure and the creation of a globalized marketplace. Like an ant colony toiling to build its vast empire, the 'production' associated with production created its own empire and added another segment to the cycle of social striving for a utopian ideal of existence, work, and pleasure.

Although industrial processes have been moved to the peripheries of the contemporary gentrifying city centre and other countries, most North American metropolises contain remnants of these vast industrial complexes. Some cities have become literal fields of ruins resulting from the shift in production from sites dependent on large transportation and production infrastructure to sites dependent on access to globalized technological and skilled personnel infrastructure. Other cities are being forced to respond to the remaining expensive and expansive industrial infrastructure of docks, bridges and highways in ways that are appropriate to the lifestyles of a globalized society. The responses include the conversion of adjacent abandoned lands to landscapes associated with public open space, green space, and recreation. The rethinking of the design of urban public space is an international phenomenon—reactions to our past [mistakes] or a fundamental premise of democracy [Ramoneda, July 2003]? Vancouver is the quintessential model of the 'new' utopian city. Next to New York City, it possesses the greatest amount of land area converted from continuous industrial waterfront to an expansive network of waterfront public open space [Fig. 1.5]. Within this network lie distinct neighbourhood parks accompanied by neighbourhoods that are the manifestation of a mere decade of city planning dedicated to intense densification. During this time, the city has been a rapid production line of residential towers and townhomes.
establishing a downtown population by the year 2021 to 57,000 new residents and 38,000 new dwellings for a total of 139,000 people on 900 hectares of land [Stats Canada, 2001]. These estimates make Vancouver the fastest growing downtown of any North American city.

These figures have attracted international attention ranking Vancouver the #3 'most livable city in the world' below Geneva and Zurich, Switzerland [Mercer Human Resource Consulting, March 13, 2005]. Several reasons for this rating include it's location on the Pacific Rim and influx of Asian development investment, the 2010 Olympic bid, the ubiquitous natural landscape and planning policies dedicated to city centre densification.

Eventually full build out will be determined by the natural barrier of the water's edge. The production of housing will cease, leaving Vancouver with a new set of issues to contend with as it matures. The issues are no longer about providing dense yet healthy living situations but rather how to sustain people in work, lifestyle, and community while attracting and retaining new and young talent - a vested interest for any city [or self-interested system] valuing growth, vitality, and sustainability.
PROJECT BASIS
The basis for this project is an interest in Vancouver's creative production industry and how these activities and economies can inform public space. The project site under a main bridgehead into the downtown peninsula provides opportunities for layering work, consumption, leisure, and entertainment into existing city infrastructure.

VANCOUVER PRESENT
The mass production of residential density and public open space has created an extremely livable, but dimensionally singular city often referred to by locals as 'no-fun-couver'. With the exception of annually programmed large festivals, processions, and events in public spaces, there is scarce multilayering of activity and moreover, scarce provision of partially enclosed public event space. Each component of the urban landscape possesses strict use regulations as well as strict delineation of interior and exterior functions. The only deviation from this is the occasional spilling of a store's contents or cafe seating onto a fronting sidewalk or diminutive outdoor patio. Furthermore, Vancouver's verticality is also regulated by strong distinctions of public and private domain. This separation renders large amounts of otherwise occupiable space either exclusive or useless. Cars reside underground, stores occur at the street, greenspace is at grade, everything above is residential, and roofs are unoccupiable ground. These distinctions, although predictable and helpful for positioning oneself, minimize the occurrence of happenstance civic events, eliminate opportunities for urban wandering and discovery, and limit the potential for flexible use of space and even citizen appropriation of space.

In Vancouver, the masterplanned development of vertical and strictly defined private realm has created high density gated communities with a market-oriented franchise aesthetic [Zukin, 1991]. As we have already started to witness, these developments contribute to an elevated economy that further marginalizes alternative communities and activities. Citizens operating on a non-corporate basis become limited by land and real estate economics and use restrictions. In the case of small-scale industrial arts, these factors separate them from the general public exposure and social interaction vital to their survival.
PRODUCTION AND SPACE

The concentration of diverse social space and the resultant opportunities is a reason why people gravitate to urban areas. Henri Lefebvre discusses the inseparable link between material production and the productivity of space in his book *The Production of Space*:

"Space is a social relationship......

one which is inherent to property relationships [the ownership of the earth] and closely bound with the forces of production [which impose a form on that earth]: here we see the polyvalence of social space, its 'reality' at once formal and material. Though a product to be used, to be consumed, it is also a means of production; networks of exchange and flows of raw materials and energy fashion space and are determined by it. Thus this means of production cannot be separated either from the productive forces, including technology and knowledge, or from the social division of labour which shapes it........the concept of social space becomes broader. It infiltrates, even invades, the concept of production, becoming part - perhaps the essential part - of its content." [Lefebvre, 1974]

According to Lefebvre, the entire city is a network of social spaces formed by the production, movement, and flow of materials imposing distinct patterns upon the earth - presumably in the form of infrastructure. Since production cannot be separated from the social labour that creates, moves, and acquires the products, the space itself becomes the most important part of production - and perhaps the most consumable. Like public parks, these landscapes themselves do not discriminate among consumers.

Some of the most social spaces in our cities - markets, shopping areas, and artisan districts are often formed around some type of transportation infrastructure because of the necessity of material and human movement. Perhaps it is no coincidence that these types of spaces often colonize in the 'leftover' gaps and margins created by transportation infrastructure, but rather it is a logical companionship. The enormous market beneath the tracks at Ueno Train Station, Tokyo, the recent conversion of the Promenade de Plantee, Paris into a linear series of shops and cafes, and beneath the 'L' in Chicago are a few examples of infrastructure interstice colonization. All of these spaces display industrious public use of otherwise neglected brownfield...
urban land where conditions only allow small scale design interventions. Therefore in each example, the outcome is a fine grained, unique contextual urban solution.

Lefebvre's theory of space and production is relevant in the current condition of recovering and inventing finer grained nuances that have been lost to contemporary large-scale single-use development. It is a common condition in contemporary planning to neglect interstitial spaces because of the difficulty of conforming these spaces to the methods used in conventional planning. Most interstitial spaces are bound by infrastructure that cannot be altered to accommodate imposing design solutions. Rather, design interventions must be submissive to the space and the structure - a difficult contextual exercise that is often more laborious than the productivity of the outcome. The result, however, can provide a potential for contributing public spaces that add diversity and identity to our towns and cities.

THE FUTURE ROLE OF INFRASTRUCTURE
Similarly comparable to the colonization of subinfrastructural spaces by production forces is the conversion of them into designed open space, parks, and entertainment uses.

Infrastructure is increasingly providing the public spaces of cities as they connect elements one to another. Roads and bridges are required to perform multiple functions and this is driving new design approaches. They have to fulfill the requirements of public space and they have to be connected to other functioning urban systems for public transit, pedestrian movement, water management, economic development, public facilities and ecological systems.
"Infrastructure is an operation that combines different kinds of spaces and activities - a park, a road, a building - within its domain and is able to sustain program beyond its own logistical requirements. As an operation it works strategically to create conditions for future events, as opposed to a conventional understanding of infrastructure as an artifact that exists for the sake of a technical program. It is through this combinatorial role that the operation of infrastructure has the potential to mediate between architecture and landscape in order to contribute to the reconceptualization of the urban realm. Infrastructure can be significant in urban terms because of its capacity to reveal unsuspected kinship between elements long known, but assumed to be incompatible with one another, such as a park or public square with a highway."

[Berrizbeitia and Pollack, 2004]

This project is based on a very literal comprehension of Lefebvre’s theory on the production of space whereby the actual acts of artisan production in combination with commercial, market, park, and event spaces is an appropriate [and hopefully promiscuous] collision of programs to produce a diverse, small scale, and unique series of spaces that are more important and consumable than the actual materials being produced.

Fig 2.8 Park under Cambie Bridge, Vancouver
Vancouver’s ‘production’ culture and economy is most clearly explained by the pervasive presence of the Hollywood movie industry. Caravans of people come to Vancouver for a short time whereby business is conducted, resources are exchanged, the landscape is consumed and quickly left behind. The commodification of Vancouver’s ambiguity has become a self-fulfilling prophesy affecting how the city conducts business. Every creative industry is affected by the ambiguity of the place - great to live and work but the real opportunity, identity, and community is often found elsewhere. Combined with exorbitantly increasing land values, the difficulty of finding support outside of an institutional framework is a difficult endeavor in Vancouver.

DIGITAL PRODUCTION
There are 3 independent film schools in Vancouver. The largest of the three, the Vancouver Film School attracts 500 students per year from over 15 countries [www.film.bc.ca]. Most of the graduates complete at least one production locally. They struggle in competition with the American production companies and for local exposure to their films. Last year’s Vancouver International Film Festival entertained 150,000 attendees to the three weeks of continuous screening. Of the 537 films showcased, 13 were produced by Vancouver film makers [www.viff.org]. In 1995, 2 local film students began a film production co-op in a three storey non-descript building on 37th and Cambie. It is consistently occupied by 10-15 local film makers who consider Toronto, Montreal, and the larger American cities as their primary audience.

Fig 3.1 37th and Cambie Film Co-op, Vancouver, 2004

Three of the world’s largest digital arts and animation companies are located in Vancouver, Electronic Arts, Inc., Mainframe Entertainment Inc., and Radical together employ over 3800 digital media artists [www.digitalcareerscanada.com]. The impact of this industry materializes itself in everyday life in the form of small multi-media video events often held at clubs in the Downtown Eastside.

TEXTILE PRODUCTION
In 2005 organizers planned 2 large textile and fashion event blitzes days apart in order to “emerge Vancouver as a fashion capital” [www.fashionwindows.com]. Vancouver Fashion Week and BC Fashion Week collectively drew 2,500 people to the convention center to view over 150 local high-design textile and fashion artists [Georgia Straight, April 2005]. South of Main Street [SOMA] is becoming the center of Vancouver street fashion. Six merchandisers have connected their stores to ‘The Incubator’ in Toronto - a local government funded collaborative industrial arts facility for living, working, and marketing - to create a cross city promotion of locally designed and produced goods. Support from the neighbourhood has grown into a community interested in it’s designers reputation and success as a reflection of it’s own.

FURNITURE PRODUCTION
Vancouver’s furniture industry has been gaining attention with a recent showcase at the Stockholm Furniture Fair. Thirteen furniture designers from Vancouver exhibited at the event - the largest number ever. The designs and production methods from Vancouver attracted a press release
calling the work ‘fresh and simple - Vancouver: a utopia for design?’ [www.stockholmfurniturefair.com]. In addition, Vancouver design also attracted attention at the 2002 International Contemporary Furniture Fair in New York. Several Vancouver exhibitors were labeled “honest, good, solid design - people to be watching for the next decade” [www.pure-designonline.com].

PRODUCTION FACILITIES
Vancouver has 3 live/work facilities that include basement collaborative production space, but no display space. All are located on the Eastside - Railtown Studios in Japantown near Oppenheimer Park, The ARC on Powell near Commercial, and Parker Street Studios on Venebles which is not technically zoned live/work. The ARC has the most comprehensive facilities and also a 1 year waiting list for occupancy interviews [Interview with Roy Mackey, May 2005]. In addition, there are dozens of live/work zoned buildings that do not provide collaborative work space, but ample display space. With the exception of Gastown, there are no live/work buildings on the downtown peninsula. However, both the new Shangri-La and the proposed Fringe Tower by Aurthur Erikson and Hillside Development will include live/work zoned units for non-production oriented small businesses.

The Video In Resource Centre on 4th and Main was founded in 1973 and now has state of the art facilities and provides ongoing educational workshops. They promote video production, exhibition and international distribution of documentary films. A yearly membership fee gains access to equipment and space rentals [www.videoinstudios.com]. Recently a warehouse on Alexander and Dunlevy has been appropriated by a group of 12 local fashion and furniture designers as a collective workspace. The space is illegally occupied because of the exorbitant cost of permits and the fact that there is no zoning designation that properly meets this type of shared accommodation and use. But nonetheless, it has become an exciting space with an unfortunate legally limited lifespan.

DISPLAY FACILITIES
Besides dozens of local galleries, industrial designers promote themselves through a single annual event, the Eastside Culture Crawl. Held every November, the Culture Crawl invites the public into over 200 private studios, all located in East Vancouver [www.culturecrawl.
Arnt Arntzen, founder of The Crawl and furniture designer said his impetus for starting the event was to liberate designers from the construct of the gallery-designer relationship which he says dominates Vancouver [Arnt Arntzen Interview, November 2004]. With the exception of small pockets of stores geared towards marketing locally designed and produced goods in Gastown, Main, and Yaletown, galleries are currently the main consumer venue, which according to Arntzen, has more negative implications than positive because it keeps the designer unseen and drives up sales prices to accommodate gallery commissions.

EVENT SPACE
Vancouver hosts numerous annual festivals and events most of which are held outside in temporarily constructed tents and stages in public parks. The only permanent outdoor event spaces in the city are the Plaza of Nations and the amphitheatre on Granville Island, but neither of these host regular events. The most regularly scheduled outdoor events in Vancouver are the steps of the Vancouver Art Gallery, the large covered hall under Robson Square, and the front steps of the downtown library. All of these spaces are appropriated by varying social groups, and performers with props, video projection, and music amplification.

Public Dreams Society has had the most success in large scale event planning with it's annual Lantern Festival and the Parade of Lost Souls. Both events appropriate large areas of the Eastside for a night of performance, procession, and art installation.

The most used outdoor event spaces in Vancouver are the steps of the Vancouver Art Gallery, the large covered hall under Robson Square, and the front steps of the downtown library. All of these spaces are appropriated by varying social groups, and performers with props, video projection, and music amplification.

Existing on the project site is L'Espace Dubruiel, established by Montrealer Alain Dubruiel in 1980. He originally leased the building from The City for architectural salvage and has since resided there while establishing one of the most prominent unadvertised cultural production entities in the city. It is the headquarters of Vision Quest Productions movie company as well as host to numerous free impromptu jazz events and fashion shows from around the world several times a year. The space has been a preferred event facility of the CBC and international ambassador groups. In January 2004, The City of Vancouver imposed a reprieve on Dubruiel for not acquiring proper fire escapes, toilets, and sprinklers for a public venue, despite over 250 letters and 3,000 emails recieved by The City in favor of keeping the venue open [The Courier, January 2004]. As a result, this unorthodox example of ‘mixed use’ no longer actively exists.

The bridge above L'Espace Dubruiel is an informal gateway onto Granville Street: the city's primary downtown entertainment district - a frightening proposition in it's current state of physical neglect and social and economic marginalization. The street houses the city's finest and most historic theatres dispersed throughout smaller street fronting facades. The entire street is plagued by high vacancy, graffiti, panhandling, and drug activity.

Fig 3.5 L'Espace Dubruiel, Vancouver
PROJECT SUMMARY
Although Vancouver is aplenty with places for living and recreating, there has not been equal emphasis on the other elements that comprise a comprehensive urban landscape. As Granville Street 'entertainment district' struggles for survival and real estate is consumed by high priced residential condos, more and more people are leaving downtown for many aspect of living.

As the flow and production of materials and goods lessens in lieu of high density living and open space, so lessens the amount and quality of social space that is intrinsically tied to production.

PROJECT SCOPE
The project scope is limited to a 1 1/2 block area directly under the north end of the Granville Bridge. The project will address pedestrian access from the bridge to the ground and also pedestrian activity on all edges of the project boundaries. The project seeks to create a unique work and entertainment district in-between two high density residential areas.

PROJECT GOALS
1. to create a unique district that is simple but vibrant with program 15 hours a day, 7 days a week
2. to create a multitude of varying sized spaces for the production, display, and consumption of goods
3. to actively engage the bridge structure in the design solution to avoid creating a place that is only a byproduct
4. to utilize the bridge as structural support, experiential possibility for people, and mediation between interior and exterior
5. to address the current lack of pedestrian connections from the bridge deck to the ground
6. design to encourage happenstance civic events, urban wandering and discovery, flexible use of space, and citizen appropriation of space
LOCATION

The project site one block inland on False Creek North displays the remains of past and current industrial uses and the affects of a gigantic imposing bridge structure. It’s current condition is contributing very little to the city in terms of attraction and productive land use.

The overhead bridge connects the central city core to the southern part of Vancouver, including Granville Island across False Creek.

The site lies in between Pacific Boulevard to the northeast and Beach Avenue to the southwest, and Howe and Seymour Streets parallel.

The total project site is 2.7 hectares in size and is completely in light industrial uses.
HISTORY
The industrial history of the site and its surroundings in no way indicates that the future use of the land should stay as such. However, it does provide a dialogue about the changing nature of production as a reflection of culture and land use, and more importantly about the role of transportation infrastructure in the city.

- First bridge was a low timber trestle extending from Beach Ave. on the north to 3rd St. across the water
- Bridge widened for streetcar
- Wallace Shipyards opens directly under the bridge head
- Wallace Shipyards moves to North Vancouver and becomes the Burrard Dry Dock, now Versatile Shipyards.
- New steel bridge built slightly to the east from Pacific Ave. to 4th
- Various small industries move in and out of old shipyard buildings; all machine-driven harbour activities
- New [current] bridge built in location of first bridge, 27.4 m above False Creek
- Site has ongoing history of industrial use. At present, automotive storage and repair and ironworks

[City of Vancouver Archives, http://vancouver.ca/cty clerk/archives/about/index.htm]
JURISDICTIONS
The City of Vancouver is divided into planning jurisdictions. The project site is part of the Central Area - or main downtown jurisdiction. This area includes everything north of False Creek to the Georgia Straight, and South False Creek to Broadway, and east from Stanley Park to Main Street. The jurisdiction has a population of 100,000 [City of Vancouver Planning document, 2001].

NEIGHBOURHOODS
The Central Area is comprised of 15 distinct neighbourhoods [Fig. 5.8], all containing some type of central business area. The most unique feature of the Central Area is it's severing by False Creek. The neighbourhoods that have been built on the creek have a unique role of addressing and engaging the waterfront. Intermittent ferries and marina activity link the two sides from the water. Three large vehicular bridges, all within the Central Area, link the land and are relatively short distances from one another.

Burrard Bridge enters the downtown at the boundary of the West End neighbourhood [largest in land area] and the more commercial oriented neighbourhoods to the east. Cambie Bridge enters directly into False Creek North separating the stadium district from new Concorde Pacific Development. [Fig. 5.9]

The Granville Bridge is in between the other two bridges and is the entry to the Granville Street entertainment district. The bridge hits ground at what is called the 'Bridgehead' neighbourhood - which includes a taxi depot, motel, and strip club. The bridge essentially severs Granville Slopes and False Creek North, creating a desolate 'no-man's-land' that doesn't definitively belong to either.
POPULATION
Granville Bridge enters downtown in between the second and third largest population areas [Fig 5.10]. Both False Creek North and Downtown South will experience the greatest population growth in the next 10 years - each individually adding 11,000 people to the downtown core - for 22,000 combined [City of Vancouver Planning, August 2003]. Although the West End is the largest, it is near full capacity and will experience very little growth in the next decade. Granville Slopes, the neighbour to the west of the bridge, is an older neighbourhood and is also stable in its current numbers.

These trends lead to the conclusion that the vacant space under and around the bridgehead is a prime location both as a gateway to Granville Street and as a common public space in between several highly populated and growing neighbourhoods.

![Fig. 5.10 3-D Model of adjacent neighbourhoods](image-url)

**Fig. 5.11 Estimated Central Area population growth chart**
ZONING
The entire site is zoned within the greater False Creek Comprehensive Development District, meaning that future development is regulated by the Official Development Plan and limited to the following uses: residential, institutional, industrial, marinas, commercial, commercial-recreational, and parks/open spaces [FCCDD Comprehensive Development Bylaws, 1997].

Both False Creek North and Downtown South are exempt from Vancouver DCL By-Laws because they have Official Development Plan's in place with agreeable public benefit strategies.
The entire site is owned by the City of Vancouver and leased lot to lot by tenants. The city has intentions of establishing a central neighbourhood district and is slowly relocating each tenant [Interview with city planner Eric Lott, October 2004]. The longest term resident on site is the Iron Works facility at 1429 Granville - 19 years.

**PROPERTY/LEGAL**

**CURRENT LAND USES**
- Open Space
- Commercial/Retail
- Residential
- Industry
- Hotel
- Entertainment

**CIRCULATION AND ACCESS**
- Pedestrian
- Seawall
- Vehicular

Fig. 5.13 Site property line divisions

Fig. 5.14 Site and adjacent land uses

Fig. 5.15 Circulation on and around site
CURRENT USES [ON-SITE]

- Taxi Headquarters
- Automotive Garage
- Mini Storage
- Taxi Repair Station
- U-Haul storage
- Iron Works/L'Espace Dubriel
- Vehicle storage
CURRENT USES [OFF-SITE]

New Residential Tower

Gran Table Park

Commercial and Residential

Marina-side restaurant

Fig. 5.19 Off-Site Uses

Marina

Senior Housing

George Wainborn Park

Small Restaurants

Hotel District

Tower Residential

Fig. 5.18 Site Adjacencies
TOPOGRAPHY
The site slopes down from northeast [downtown] to southwest [False Creek] 6 metres - inversely to the slope of the bridge structure.

The grade change most significantly effects hydrological cycles and at-grade infrastructure, including pedestrian and vehicular circulation.

HYDROLOGY
The site is difficult to map hydrologically because it is 99% concrete. The dripline from the edge of the main deck drains to catch basins - since there are no permeable surfaces on site. The diagram below describes how water would move according to the topo lines and with influence from the bridge deck dripline.

VEGETATION AND HABITAT
There is little vegetation on site and no obvious habitat. The site is barren except for a few planted trees and weeds. However, the site is within half a block of significant passive park space on either side - both a small neighbourhood pocket park, and a large waterfront park.
PEDESTRIAN CONNECTIONS

The Granville Bridge is one of the most challenging pedestrian problems in the city. Overcrowding on the Burrard Bridge is being dealt with by converting automobile lanes into full-time bike lanes, and the Cambie Bridge was built recently enough to have considered pedestrian needs including wide walkways and ramps connecting to the ground.

The central deck has sidewalks on both sides and the extension arms only contain them on the outermost side [Fig. 5.24]. The sidewalks are 1 meter wide - below standard for even secondary city streets, and too narrow for passing pedestrians, let alone bicycles [Fig. 5.25]. Bridge car speeds are too high for comfortable on-road bicycle sharing and the sidewalk is edged by a 10 inch curb, compounding the difficulty for road bicyclists.

Pedestrian crosswalks exist connecting each ramp sidewalk to the central deck, but it is not possible to cross the central deck because of a concrete median [Fig. 5.26]. Therefore, if a pedestrian ascends the bridge on the central deck, they can access only that side, but not the other until they fully cross the bridge where then they can cross via a con-
voluted underground passageway.

The connections to the ground are either by completely descending the bridge to where it meets land at Drake Street, or via stairs adjacent to the entrance of the strip club on Pacific Boulevard [Fig. 5.24]. The stairs land in the most unpleasant part of the under-bridge structure where to reach directly under the bridge from here requires walking through a serious of fenced parking and storage lots darkened by the low bridge structure and then crossing the giant median on Pacific Boulevard.

Fig. 5.27 shows the only options for getting from point ‘A’ and ‘B’ on the central bridge deck - each accessible from the adjacent arm - to point ‘X’ directly under the bridge. Route A is 464 meters and Route B is 504 meters. Route B includes stairs and is not handicapped or bike accessible. Doing so would add an extra 74 meters to the original route for a total of 578 meters.

These analyses justify an involved solution for better pedestrian circulation should the space under the bridge and the deck itself ever become a fully active part of the city. The current lack of connection from the overhead bridge deck further separates this space in an already separated condition, and ignores potentials for interaction with the bridge structure at the human scale, rather than vehicular only.
The project quickly called for engagement with the exploratory context of the site, which immediately became about infrastructure as an armature that could produce positive economic and spatial quality, first and foremost for the surrounding neighbourhoods and secondly for the downtown district as the 'gateway' to Granville Street.

Through this site exploration, a series of incidental conditions inherently produced by the bridge structure were chosen to explore how the structure and the site interact:

- Ground
- In Between
- Horizontal/Vertical
- Light
GROUND

"Neither volume nor flat surface, but somewhere in between the two; the area around and belonging to a house or other building; an area used for a particular purpose; a basis for belief, action, or argument; material that serves as a substratum."
[Merriam Webster's Dictionary, 2003]

"A surface that lies in between object and space."
[Tschumi, 1996]
Movement of building roof heights under deck; building roofs with park in background; human use of rooftop;

bridge deck versus true ground; ground scale contrast - 6 inch curb and 40 foot deck; street-curb-sidewalk-hill-bridgedeck

Fig. 6.8 continuation: 'Ground' photographic essay
IN BETWEEN

“Inside/outside; back/front; up/down; a residual space made of accidents; the place of unexpected events; leftovers, gaps, and margins; interdisciplinary.” [Gausa, Gual-lart, Muller, Soriano, Porras, Morales, 2002].

Interstices happen when different city grids collide; these are the leftover edge spaces, offering special opportunities for the creation of identity at a human scale.

Fig. 6.9 Bridge in between model with population numbers [City of Vancouver, August 2003]

Fig. 6.10 Bridge in between
Bridge in between two neighbourhoods; building in between columns;
space and column in between buildings; in between column and building;
building in between columns and two grounds; in between roof and deck.

Fig. 6.11 'In Between' photo essay

Fig. 6.12 Sections of intermediate spaces at 15 m
HORIZONTAL/VERTICAL

Each element of the bridge structure takes advantage of the adjacent beam to provide horizontal stabilization.

The basic function of a bridge connects two pieces of the city horizontally AND the city floor to a new level of existence/experience.

"Within a bridge structure, and therefore the site it forms, none of the horizontal members can exist alone; however, no one must depend on the others in order to exist. Meanwhile, events cut across them and establish ephemeral relations between them." [Gausa, Gual­lart, Muller, Soriano, Porras, Morales, 2002].

<table>
<thead>
<tr>
<th>bridge impact and human experience on it</th>
</tr>
</thead>
<tbody>
<tr>
<td>need for pedestrian crossing</td>
</tr>
</tbody>
</table>

Fig. 6.13 Horizontal connection between land

Two horizontal planes of bridge; merging of multiple horizontals into one; horizontal support member; three horizontals.

Fig. 6.14 Horizontality in the structure photo essay
Pedestrian movement through the site is most prominent east and west because of the potential to connect with surrounding circulation. North/south movement stops at the north by the median in Pacific Boulevard and the bridge hitting the ground, but connects to the seawall to the south.

Vertically emphasizing infrastructure; building vertically meets deck; column.

Fig. 6.15 Linear connection through site

Fig. 6.16 Linear connections diagram

Fig. 6.17 'Vertical' photo essay
LIGHT

Shade. Shadow. Day. Night

Natural light: 6 hours, limited areas.
Artificial light: 24 hours, any area.
Especially under a bridge.

Shadow diagrams cannot appropriately display the effects of double and triple shadows, such as those on the site. Shadows from surrounding towers layer on top of shadows from lower buildings, which are all in the shadow [and shade] of the bridge structure.

However, seasonal patterns of shadow can be seen and used in planning for vegetation and the placement of uses according to the time of day and year in which they will be most used.

Fig. 6.18 Shadow diagrams January-June
As seen from the diagrams, the site remains in shadow a good portion of the day except for a few hours around high noon when the only darkness is directly below the bridge structure. The sunrise shadow moves just a few degrees to the south from January to July when it then begins to move back towards the north. This shadow pattern would most affect what happens at the furthest southwest corner of the site, leaving it in complete shadow every morning, but lightening up by mid-morning.

The late afternoon shadow is the heaviest and deepest on the site due to the closeness of the towers to the southwest. This shadow pattern leaves no part of the site untouched but does lighten up in the southeast part of the site in November and December.

Fig. 6.19 Shadow diagrams July-December
site exploration

Fig. 6.20 Shadow diagrams September-December
The shadow diagrams allow for macroanalysis of the site, but upon closer observation, there is a complex pattern of lighting created by the forking of the deck structure into two V's. These openings act as skylights to the site. The light they allow into the site is then filtered through the columns according to the shadow diagrams above. While analysis of the patterns of light caused by the columns is a whole study in itself, it can quickly be deduced that the V's allow ample light for smaller shade-tolerant vegetation and any uses that require some natural light.

Fig. 6.22 V's as skylight above site

Fig. 6.21 'V' openings created by ramp extensions

Fig. 6.23 Sunrise, Noon, Sunset mid-August
The nighttime light qualities of the site are phenomenal. From on top of the bridge, many points of prospect allow for a view of either side as a pixelation of nondescript residential lights. Right now the site is one of the few that does not join in the pixelation. It is relatively dark from the bridge looking down with the exception of a few street lights. However, once on the ground underneath the bridge, a quality entirely different is discovered. The bridge streetlights create a datum atop the ones on the street beneath which light the structure like a theatre. The lighting is ‘warm’ in stark contrast to the daytime coolness of the site.
Fig. 7.1 Methodology diagram
A set of four organizing principles have been derived from existing conditions on site. These principles provide a starting place from which to begin to give form to the site.

THE SLAB
The site is dominated by the slab and the column. This simple system will be a defining characteristic of the new landscape.

Fig. 8.1 Bridge Slab
SIMPLE GRID
The center columns dominate the overall structure of the site. These columns will be extrapolated across the site in the form of a grid which can help to organize onsite elements.

Fig. 8.2 Grid of columns

Fig. 8.3 Grid overlaid on plan
LINEAR SITE ARRANGEMENT

Prioritized connections on the ground between the two neighbourhoods. The connection towards the city centre will be made via the bridge deck.

Fig. 8.4 Linear condition of buildings

Fig. 8.5 Plan of major linear configurations on the site
PERMEABILITY AT THE GROUND
The bridge is a structure that allows the ground plane to be completely permeable. All work structure walls are able to be opened completely continuing the free groundplane created by the bridge.

Fig. 8.6 Openness of ground plane

Fig. 8.7 Plan highlighting doors that open to create a fully permeable landscape
A critical aspect of programming urban space is the designer’s inability to control the outcome. Henri Lefebvre’s analysis of the contradictions of the built environment describes the complexity of the city as “a space of differences” [Lefebvre 1991]. This space is about tension, which includes nature, as evident in his definition of social space as the “encounter, assembly, [and] simultaneity of everything that is produced by nature and by society, either through their cooperation or through their conflicts” [Lefebvre, 1991]. This vision of a city establishes relationships between social and natural forces, acknowledges conflict between them and denies absolute control to one over the other [Pollack 2004].

Whether inside or outside, one way of conceptualizing public space is as everyday space - the non-monumental aspects of urban life that allows and supports social interaction. In the case of this project, there is a driving program that gives primary definition to the space. However, that program is about everyday work activity and the many facets that comprise it’s successful function. The crucial component is how to design social space around that program in a way that allows for a multitude of appropriated uses that can happen in conjunction with, as a result of, or even in opposition to the activities of the primary program. One way of doing so is by encouraging a project to embody and facilitate difference by considering how different functions operate at different scales and then create links between these scales. This includes an intense layering of multifunctional, multi-scale activities within a single formal gesture. For example, creating slabs as pedestrian circulation off the bridge, stopping points for a production freight elevator, potential nighttime performance space, and as viewing platforms to a film screen and activity occurring on the ground below.

This example from the project utilizes ‘ground’ as an active surface in two senses - not only a surface that supports activities, but also a performative element whereby the space itself is continually being produced, whether intended by the design or not. Rather than a space existing in an a priori, “black and white” entity, it is developed performatively, that is, happening as a process similarly to how much of the world operates [Pollack 2004].

The following active programs will be the focus of the project, with an overarching emphasis on the ultimate production of public and social space:

* small scale production
* product display and exhibition
* shopping and restaurants
* theatre
* market
* movement on and off bridge
Fig. 9.1 Site intervention in reference to downtown Vancouver
Fig. 9.2 Site model aerial
Ground Level Plan  Scale: 1:400  
Fig. 9.3  Ground level plan of design intervention [scale not accurate]
Second Level Plan

Fig. 9.4 Second and third level plans of design intervention [scale not accurate]

- Large concrete paver
- Small concrete paver
- Concrete slab
- Gravel

Third Level Plan

- Turf - semi-shade variety
- Tall Grass - sun/shade mixture
- Water
- Tree - Maple

Fig. 9.5 Material key to all three plans
SMALL SCALE PRODUCTION

Figure 9.5 illustrates the four main industrial arts facilities in Vancouver, in relation to the project site. All of these are publicly available [with a 1 year minimum wait list] and represent 4500 square feet of collective production space, 44,000 square feet of private live/work space, and 50 square feet of display space.

Four are located in the boundaries of the downtown eastside which accounts for the disproportion of allocated display space. None of the four are in an area of high public traffic.

The ARC [Artist Resource Center] is located in between the waterfront trainyards and a large chicken processing plant - therefore plagued by repulsive noise and smell. The facilities provided at The ARC are among the best in the city and acquiring a space requires a 1 year wait and indepth interview and selection.

Railtown is similar to The ARC and is also in a less-than-desireable location being separated from Gastown [and any real amenities] by Oppenheimer Park and Japantown.

The Alexander Warehouse, as previously mentioned, is illegal according to current zoning standards, and therefore probably not sustainable, but could be a model for the types of shared and inclusive facilities that provide community and independence for local producers. It is in the middle of a cluster of small scale industrial buildings, and like the other facilities, segregated from nodes of activity and public exposure.

Overall, all facilities retain a very low profile in city activity and therefore are kept from significantly contributing diversity to Vancouver’s urban landscape.

Fig. 9.5 illustrates the lack of such facilities from the downtown core and thus the types of zoning being neglected and marginalized.
All of the above facilities were visited and documented at the beginning of the project. The criteria taken into account on these visits focused mainly on the collective production space, its location within the building, access to the outside, access to appropriate docking and movement of materials, and level of exposure to the public.

Figures 9.6 - 9.8 diagram the production spaces of three of these facilities based on this criteria. All three of these spaces are collectively shared by 10 or more people. Two of the three are located in basements with no access to the exterior and only accessible by elevator and stairs.

None of the three are located within any visual access to the public, nor contain any significant display space - of process or product.

Furthermore, none of the three are located with any proximity to significant public space.
The visits to local facilities revealed several things.

- almost all located in basements
- limited outdoor connection
- limited docking space
- overall lack of shared workspace for the number of artists in the city

Therefore, the following programs and sizes have been prioritized for this project:

*10,000 sq. ft. active workspace on ground floor with open plan, freight elevator, air, light, ample docking, easily accessed outside

color key
- active workspace
- less active workspace
- private workspace
- exterior work/exhibit
- docking

work/exhibit space, and permeable walls for ventilation and public exposure when desired

*4,000' less active shop workspace freight elevator, washrooms, air, light, easily accessed outside work/exhibit space

*3,000' private workspace open plan, easy access to other workspaces, air, light, outside access

Fig. 9.10 Ground level production spaces
Fig. 9.11 Second level production spaces
Fig. 9.12 Third level [rooftop] production spaces
Fig. 9.13 View into ground level production spaces from descending coil
Fig. 9.14 Main plaza production space
Fig. 9.15 Section 'A' as indicated on production plans [Scale roughly 1:1000]

Fig. 9.16 Section material key

Corrugated Aluminum
brushed silver, square ribbed, coated finish

Concrete
form-tie slabs, medium aggregate

Glass
tint, double pane

Vegetated Panel
steel structure with meshed growth medium

Tall Grass
shade/sun combination of Liriope, Panicum and Pennisetum
Fig. 9.17 Section ‘D’ as indicated on production plans [Scale roughly 1:1000]
DISPLAY
Active display is impossible to map in Vancouver. Although there are dozens of galleries with large street windows, and numerous local stores promoting local designers, the concept of 'display' is greatly underplayed by city ordinances that very strictly control means, size, and location of display.

The following types of display are based on what appear to be lacking at local production locations:

*500 sq. ft. static product display
[this is 10x the cumulative amount provided at current workspaces]

*active display
places where actual work processes are viewed

*exhibition space
temporary exhibit space, in view but out of reach of the public

color key
- static display
- active display
- special event display

Fig. 9.18 Ground level display areas
Fig. 9.19 Second level display areas
Fig. 9.20 Third level display area
9.21 View onto rooftop production spaces from ramp off bridge near elevator
9.22 Second level display 'boxes' on Howe Street
Fig. 9.23 Section 'E' as indicated on display plans [Scale roughly 1:1000]
SHOPPING AND RESTAURANTS

Downtown is not lacking in quantity of shopping and restaurant experiences. Rather, the lack is in distinctiveness between these districts, and quality of the experience and goods being sought.

Gravnville, Robson, and Denman form a continuous high street fabric that definitely works from a planning perspective. But in comparison to high streets in comparable sized cities, the experience of these streets leaves much to be desired.

In addition, the 'pocket' areas of such activities in Vancouver are small in comparison to the population. Gastown, Yaletown, and Granville Island are substantial 'pockets' that serve their own unique function and define very specific characteristics.

The following programmatic uses will be incorporated into the design:

* mix of clustered eating and shopping
* flagship restaurant
* manipulable space (awnings, seating, plants, signage)
* ample patio space
Fig. 9.27 Ground level production space with restaurant and accompanying patio above
THEATRE
Vancouver contains six downtown movie theatres for a total of 8,000+ seats. In sharp contrast is an extreme lack of outdoor theatre space. The Plaza of Nations accommodates 500 people but its separation from active city space deems it a special-events-only stage. The amphitheatre on Granville Island is also secluded from activity and is used only for special planned events. It can comfortably hold 100+ people, but the informality of its seating and lack of overhead covering makes it a fully seasonal venue. The Vancouver International Film Centre on Davie and Seymour is to be completed in 2006 as a headquarters for the VIFF and 175 seat theatre.

The following outdoor film theatre will include the following elements:

* 1000 seats - 600 informal, 400 formal

* retractable film screen on bridge columns

* live performance stage[s] at various levels
Fig. 9.29 Ground level theatre space

Fig. 9.30 Second level theatre space

Fig. 9.31 Section ‘F’ as indicated on theatre plans [scale roughly 1:1000]
Fig. 9.32 Main amphitheatre space, retractable video screen, and viewing platform slabs
MARKET
The ultra-dense downtown only has two summer weekend farmer's markets. Both markets are humble in size compared to the communities that surround them. The West End Market consists of two rows of vendors down Comox street for 2 blocks with approximately 30 vendors. The Yaletown Market is located in a parking lot with 20-30 vendors with a majority being arts and crafts.

The following market elements will be incorporated into the design:

* 25 - 30 outside vendor stalls articulated on ground, but not a 24 hour designation

* production facility vendor space

* appropriate movement of goods
4 m. wide delivery drive with turnaround

Fig. 9.33 Seasonal outdoor markets in downtown Vancouver

Fig. 9.34 Potential ground level market activities

color key
- outside vendor space
- production vendor
- delivery/movement
Fig. 9.35 View of potential market areas
Fig. 9.36 Section 'G' as indicated on market plan [scale roughly 1:1000]
Addressing the pedestrian problem discussed in Chapter 4 is imperative for this design. There are few solutions that could be worse than the current situation.

Best case scenario is to provide all three possible options for decent to the ground from the bridge deck: ramp, stairs and elevator. All three of these cover every possible mode of travel for a person not in an automobile.

Also important is that these solutions be more than simple function. Descending off of a piece of infrastructure as significant as the Granville Bridge requires more importance than simple stair circulation.

With these points in mind, the following users will be able to choose how they move on and off the bridge structure directly to the ground beneath in less than 500 meters - the average route from the central bridge deck to beneath the bridge.

*bikes - ramp

*wheelchairs - ramp, elevator

*pedestrians - stairs, ramp, elevator
Fig. 9.38 View of lower coil rings from top coil
Fig. 9.39 Stairs leading up slab roofs to bridge elevator. Cascading stormwater drains follow pedestrian circulation.
Fig. 9.40 Section 'C' as indicated on pedestrian movement plan

Fig. 9.41 Section 'G' [repeat] as indicated on pedestrian movement plan
PUBLIC SPACE
Vancouver has no shortage of public space with its continuous public waterfront. Although the waterfront is extremely active, it is public space focused primarily on physical activity as entertainment. The Seawall has become Vancouver’s linear ‘public square’.

Aside from the Seawall, the primary built spaces where people actively gather on a daily basis include Robson Square, Wall Center Plaza, and the Library Steps.

In these three spaces, the following activities dominate:

* sitting alone
* sitting with others
* something to watch
* performance
* sunning
* water
* stairs
Figures 9.42-9.44 show the high degree of publicness contained in the project. Everything outside of the actual interior production spaces is public and would essentially be publically owned considering the site is currently owned and will be developed by The City.

The project design includes roughly 1200 meters of sitting wall/stairs, a low level water feature positioned to receive the most sun possible.

The design includes over 6000 sq. meters of platformed space for various degrees of prospect/refuge.

Most importantly, a large amount of public space has been devoted to human experiences close, up, and under the actual bridge structure.

- a type of public space not often deemed important by cities.
Fig. 9.46 Aerial perspective into entirely public central landscape
Front Plaza Plan  Scale: 1:100

Fig. 10.1 Front plaza blow-up plan [scale not accurate]
Fig. 10.2 Materials and elements

Section A  Scale: 1:50

Rain Cable  Scale: 1:20

Stair Detail  Scale: 1:5

Sitting/Retaining Wall  Scale: 1:10

Fig. 10.3 Smaller elements detailed [scales not accurate]
City of Vancouver
January 27, 2004

To: Vancouver City Council
From: Director of Current Planning
Subject: A Neighbourhood Commercial Centre on city lands between Pacific Street and Beach Avenue, and between Howe and Seymour Streets, under the Granville Bridge.

Recommendation: That Council endorse in principle the creation of a small local-serving neighbourhood commercial centre under the north end of the Granville Bridge, subject to a report on the results of a study on the uses, form, and amenities for the subject area.

Relevant Council Policies:
1984 Southeast Granville Slopes
1989 Granville Slopes Concept Plan
1990 False Creek North ODP
2002 Downtown Transportation Plan
2002 Pacific Boulevard Redesign

Purpose and Summary: Staff have identified the opportunity to establish a small but unique neighbourhood commercial centre in the area beneath the north end of the Granville Bridge, south of Pacific Street. The centre would serve the needs of adjoining developing high density residential neighbourhoods of the westerly False Creek North neighbourhood, Downtown South and Granville Slopes, as well as provide for local employment opportunities. The development of the centre would also seek to improve pedestrian and bicycle links between the downtown plateau and False Creek. Consultant services for urban design and retail potential are anticipated as technical bases for possible zoning changes.

Study Objectives: The main objective of the study is to clarify land use and urban design policy about development of the subject lands as a mixed use 'neighbourhood centre' to serve the residents of the adjoining neighbourhoods and complement waterfront commercial and marina uses. Activity and built form will also contribute to Pacific Boulevard as a 'great street'.

Character: The situation under the bridge has the potential for creating a very special character of with full year-round weather protection and sidewalks for outdoor retailing, that could lend form to an amorphous area and support existing restaurants and marinas along False Creek. The location of bridge and ramp supports and the Engineering Department's requirement for a 3 m setback from the bridge and ramp decks present a challenge to physical and economic development. However, if addressed in a creative way these challenges may create a unique place in the city.

From report found at: www.city.vancouver.bc.ca/cyclerk/cclerk/20040224/p6.htm

Potential 'high street' from report
To: Standing Committee on Planning and Environment  
From: Engineering Services  
Subject: Urban Design review of Pacific Boulevard - Phase 1

Recommendation: That the geometric design, the conceptual streetscape plan, and the tree planting details and standards developed for Pacific Boulevard be approved.

Background: On May 2, 2002, Council adopted the Preferred Schematic Design for Pacific Boulevard and approved a budget for a consultant and associated resources to finalize the designs for Pacific Boulevard from Burrard to Nelson Street. The report noted that the first phase of implementation of the proposed plan would be the Beach Neighbourhood frontages from Homer to Seymour.

Staff retained the expertise of Allan-Jacobs and Elizabeth Macdonald to oversee the development and Stacy Moriarty to complete the detailed landscape plans and tree planting details.

Discussion: The frontage will consist of a 7.5 m wide multi-way boulevard on the south side, with a 3.0 m wide treed centre median. There is a 1.8 m wide treed side median on the south side which separates the moving lanes of traffic from the side-boulevard or access road. This side-boulevard will be an area for parked cars and pedestrians, and will include a 1.8 m wide lane for cyclists and skaters.

From report found at http://www.city.vancouver.bc.ca/cyclerk/cclerk/020801/csb7.htm
Bridgehead Guidelines

These guidelines are to be used in conjunction with the zoning schedules and the False Creek Official and Area Development Plans, the False Creek North ODP, and applicable CD-1 By-laws. These guidelines should be consulted in seeking approval for conditional uses or for the relaxation of regulations. As well as assisting the applicant, the guidelines will be used by City staff in the evaluation of development initiatives and rezoning applications for sites adjacent to selected bridgeheads.

The intent of these guidelines is to:

- maintain key public views from the bridges,
- reinforce and enhance the experience of crossing the bridges,
- reinforce and enhance existing urban form patterns,
- establish optimum setbacks of towers from the bridge decks,
- limit building height immediately adjacent to the bridges to below the bridge deck,
- minimize views of unsightly roofs from bridges,
- encourage, where possible, improved pedestrian connections
- reconcile public objectives with adjacent private development rights and expectations

Guidelines are bridge specific:

4.5 North Granville Bridgehead

The following siting and height guidelines should be followed for buildings that are proposed on the North Granville Bridgehead:

(a) no buildings should be within 10 m of central bridge deck;
(b) between 10m and 30m, buildings should not exceed the height of the bridge deck (except for sites east of the Seymour ramp). Buildings up to 18.2 m in height may be considered between Pacific Street and Beach Avenue provided that:

- a 20m minimum setback is maintained;
- the roof is positively articulated as a visible elevation
- livability issues are satisfactorily addressed
City of Vancouver
Administrative Report
October 1, 2002

To: Vancouver City Council
From: Manager of Engineering
Subject: Granville Bridge Pedestrian and Cyclist Improvements

Recommendation: That Council seek further public and stakeholder input into the preliminary design and that more funding be put into additional open houses, presentation materials, and further design work.

Background: In March 2002, Council adopted recommendations for improvement from a final study report prioritizing Burrard Bridge Pedestrian improvements, and Granville Bridge second. These improvements included a mid-level walkway/cyclist path suspended beneath the bridge and deck level improvements for pedestrians, disabled users and cyclists.

The mid-level walkway option was seen with merit by stakeholders. Cyclists supported deck level improvements, but cautioned that it would be difficult to make a commuter cyclist connection work underneath the bridge deck because of connection points and grades.

Study and criteria boards presented at open house, City of Vancouver Planning
To: Vancouver City Council  
From: Manager of Engineering  
Subject: Granville Bridge Pedestrian and Cyclist Improvements

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The mid-level walkway option was seen with merit by stakeholders. Cyclists supported deck level improvements, but cautioned that it would be difficult to make a commuter cyclist connection work underneath the bridge deck because of connection points and grades.

Those with disabilities noted the need for crossing with elevators particularly in the absence of effective disabled accessible ferry system.

Other members noted that is an interesting idea but that it warranted further exploration.

Hotson Bakker Architects were selected to explore feasibility options in terms of urban design principles, geometric design and structural loading consideration. They proposed two distinct configurations that the consultant and staff team believe are feasible.

G1 Mid-Level Crossing has Options 1 and 2. It was found that the Granville Bridge lower truss over Granville Island and north of False Creek is not as robust as the main span truss over the creek and therefore not suitable to support a suspended walkway, as per G1 proposal. Conse
To: Vancouver City Council
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G6 Option, City of Vancouver Open House Boards


City of Vancouver Archives. http://vancouver.ca/ctyclerk/archives/about/index.htm


City of Vancouver Planning Department. "Central Area Zoning".


Stats Canada, 2001

Bark Design Collective. www.barkbark.ca

Digital Careers Canada. www.digitalcareerscanada.com

Pure Design Inc. www.puredesignonline.com

Stockholm Furniture Fair. www.stockhomfurniturefair.com

Video In Studios. www.videoinstudios.com

Vancouver International Film Festival. www.viff.org

Vancouver Annual Eastside Culture Crawl. www.culturecrawl.bc.ca