Abstract

This century is immersed in a new paradigm based on an economic model called globalization, which is the suppression of free trade barriers and greater level of integration between regional economies.

Having this in mind, how can architecture respect the landscape, environmental, social, cultural and historic values of a place?

The research includes the acceptance of globalization experiencing new possibilities, not copying the successful result of one locality. We can make use of commercial freedom and information technology to find solutions that will enrich our world with the cultural diversity.

A fundamental objective of architectural composition, based on the theory and history of the locality, since "...life is lived by inhabiting and inhabiting presupposes the locality". Christian Norbert Schulz.

The challenge is to mediate the impact of globalization with elements derived indirectly from the peculiarities of a particular place: Vancouver. It would have to be inspired in the range and quality of the local architecture, the tectonic of the selected place and the topography.

Identity is based on distinguishing Coal Harbor's high rises for being part of Vancouver's architecture. The harmonizing, humanizing language of architecture for a place like this has to give a motive to what is willing to be interpreted. I find that the scenery is a very important fact for this project, being Vancouver a city with a very specific setting: having the ocean, mountains, trees and wind as a fundamental part of the domestic scheme that extend as far as it wants to and makes no demands.

I propose that via careful study and imagination one can develop a local idiom of architectural integrity and interest that I believe all truly world-class cities or regions possess.

This study of architectural identity in Vancouver Coal Harbour high rises and urban rooms are based on the study of the area, its surroundings, the views and the way people occupy the space surrounding these buildings. My intention is to bring the identity into clearer focus.
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1.1 Introduction

Local identity can be attributed to high rises built in Coal Harbour and an investigation into the strategies and constituencies that produced and promoted this become the basis for a more careful, contextual design that acknowledges and expresses locality.

High-rise apartments are ubiquitous. They mark the revival of an architectural market based on the politics of the image rather than poetics, a rhetorical exercise rather than an ethical practice.

It seems like the concept of the “original” has faded away, buildings look the same in many different countries. These copies are very remote to an architecture with the aspirations of originality and permanence, main issues that are becoming part of a memory outside the autoreferential formalisms.

The preoccupying issue of architectural identity are not the conflicts and contradictions its absence rises, but the fact that the ‘look’ brings to millions of people the illusion of an answer through a play of appearances.

Phenomenologists, like Heidegger, for whom space consists not of disembodied in space, but of places of myth and history, where people belong and dwell, and where things matter, because they have meaning. Hence for architects following in the wake of Heidegger:

“The existence of a focused architectural ideology as a point of beginning, modified by factors of people, places and events, allows solutions to become part of a greater artistic discourse. The problem is the reconciliation of high art with popular culture. Critical regionalism mediates nostalgia and technology, past and future, ideal and local truths.”

Consider it a theory of process, critical regionalism generates an architecture of place, time and ideals.

Towers tend to attract meaning, so the task is to give them the meaning of the city they are built in. Besides thinking of the high rise as an isolated vertical element that is enhanced by its locality, we should consider the spaces created on the ground around them. These “urban rooms” are basically defined by the buildings adjacent to them, they are in between spaces where people have the opportunity to interact with one another and be a part of an urban life.

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1 D. Kristine Woolsey in *Critical Regionalism* (California: College of Environmental Design California State Polytechnic University, 1991). 325
These urban rooms, become promenades, sites of interaction among the inhabitants of a place, and the people are what constitutes the identity of a place. In Coal Harbour the promenade along the water integrates a main character of the identity of Vancouver, it constitutes an essential part of its urban vocabulary.

"What remains unique about Vancouver, certainly in the Canadian context, and in the global scale, is the extent to which the surrounding natural landscape, as opposed to the built form, is the source of inspiration in the creation of urban form. There is a strong sense in this city, almost a moral sense, that splendorous Nature is superior to human artifact and that urban construct is an intrusion on, and not a complement to the landscape".  

Most of these urban rooms, in Coal Harbour are envisioned as spaces for contemplation, for a passive viewing of the splendorous nature and lacks public activity or vitality. My goal is to combine the virtues of the setting with those of architecture and urbanism. The conjunction of natural landscape and a sense of city results in a sequence of powerful urban spaces that are part of the natural context, specially around Coal Harbour, which has a very privileged location in the city. Interconnections between urban rooms, can reinforce the locality. Buildings constitute a pattern created by the spaces between them.

My interest in Coal Harbour is based in finding out the way local identity is referenced and created there, seeking to enhance its locality in response to the dwellers, environment, and place.

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1.2 Background theory

I begin the extended theoretical explorations that also grapple with the issues of local identity and global production and conceptual models, and their intersection in architecture. The problems raised by the high-rise specifically is succinctly articulated by Rem Koolhaas when he argues that “it is through volume alone, life inside the high rise is involved in a hostile relationship with life outside: the lobby competing with the street, presenting a linear display of the building’s pretensions and seductions.”

Others have argued for an attentive reassessment of the local. John Naisbitt argues: “When the situation is constantly changing as it is in today’s world the process of reconceptualization must itself be a constant process.” A city should not look to other cities for its architectural cues and inspiration. It should look to itself, without being myopic, sentimental or provincial. It results from a design attitude not a design style.

Antonio Velez Catrain asserts that it is necessary to stress the issue of context as “it encloses also the meaning contextualism and realism…this regional approach always is useful for us to be protected from the danger of waves of styles and from the poison of fashion that comfort us.”

Contextualism does not mean blind conformity, and there is scope for invention and creativity for the future.

Herzog & De Meuron assert that the design aspects become effective according to each place, and ultimately give the buildings their special character. It is important for architects to find the right architecture for each place, which, if possible, is then completed by the city.

For Lefebvre “the modern is novelty and brilliance, daring and transitory, proclamatory in its initiative; the everyday is enduring and solid, humble and “taken for granted”, it is the ethics underlying routine and the aesthetics of familiar settings.”

Lefebvre for example, posits everyday life as “festival”, and source of “liberation in all spheres of existence” as a counter force to global economic forces and as “a precondition

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4 John Naisbitt in Critical Regionalism 184.
5 Antonio Velez Catrain in Critical Regionalism 135.
for revolutionary changes” and “the emergence of the euphoric moment, which seemed, at least briefly, to fulfill his vision of collectivity, community, spontaneity, and play.”

All of these theorists are attempting to identify alternatives to the worldwide tendency to uniformity that we see today. Rationality dominates, accompanied but not diversified by irrationality; signs rational in their way, are attached to things in order to convey the prestige of their possessors and their place in the hierarchy.

“The every day can be defined as a set of functions which connect and join together systems that might appear to be distinct.” It is a product, the most general of products in an era where production engenders consumption, and where consumption is manipulated by producers. The everyday is therefore the most universal and the most unique condition, the most social and most individuated, the most obvious and the best hidden. “A condition stipulated for the legibility of forms, ordained by means of functions, inscribed within structures, the everyday constitutes the platform upon which the bureaucratic society of controlled consumerism is erected.”

Technology is also related to the issue of place identity and is a force encounter to its realization. This is the thesis of Louise Pelletier and Alberto Perez-Gomez who argue that: “In creating or filling physical spaces, architects are also creating positive and beneficial spaces for our spirits, including our societal spirit.” They also identify an ethical dimension in the conflict between place identity and the forced counter to it affirming that: We can look for ethics in the architectural realm to counterbalance the trends towards uniformity and depersonalization from, and disidentification with, our world and the people in it. These trends sometimes relate to the development of new technologies since the latter challenges our concepts of who and what we are.

“The search for ethics represents our generation’s revolution in consciousness, and a major part of this search is being carried out in the professions, which include architecture”.

“Architecture requires ethics rather than moral prescriptions. No more rules and systems of values, but rather attitudes and ways of being, the poetic and philosophical basis for action: the action of opening itself to life and endowing it with immanence”.

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7 Steven Harris and Deborah Berke, Architecture of the Everyday (New York: Princeton Architectural Press, 1997) 26
8 Architecture of the Everyday 34
9 Architecture of the Everyday 34
11 Philip Madec in Architecture: Ethics and Technology (Quebec: McGill-Queen’s University Press, 1994) 71
People are not separated from their worlds; rather, they are immersed through an invisible net of bodily emotional and environmental ties. Place, of course, is only one point from which to clarify the person-world relationship, but it is a crucial starting point for the human sciences, since people are physically, bodily beings who must establish and identify themselves spatially and environmentally.

Every building contains definite proportions of shape and size, it is, whether or not, part of a distinct cultural pattern, far more so than even its creators may have realized. The volume of buildings in production is often uniformity. In an age when everything is seen from the commercial point of view, buildings too are likely to be regarded primarily from the economic angle.

In new countries an evolving cultural milieu, mostly undefined, architectural identity offers very few accepted cultural values as references, leaving primarily the natural environment as the main source or reference. Even though many frontiers have been broken we have to respect the place where our designs take place. This respect has to respond to the culture, landscape, and environment of the site.

Having the same style of buildings all over the world without them responding to their site, has led to a loss of identity for the place and the making of architecture into a very commercial issue. When architecture started to become so predominately market-driven, it started losing its sense of being an artistic discipline.

This thesis explores the identity offered by the incorporation of local elements into design in more recently settled cities, such as Vancouver, which have tended to reference the natural environment. However, I propose to find a sense of identity via the architectural expression. I focus on tectonic expression because this I believe, serves to distinguish architecture from all other arts.

The significance now attached to the concept of place identity as the interrelation of cognitive processes and formal attributes and is one of the more important aspects of this research.

High rises offer dwelling the wide open spaces of a man made, a frontier in the sky.

In high rises in some ways we are talking of two architectures: the architecture of the metropolitan exteriors whose responsibility is the city as sculptural experience, the

12 Architecture: Ethics and Technology 98
waterfront and the mountains behind this scenery; the other is a branch of interior design, that registers and manipulates shifts in metropolitan culture.

Various analogies have been drawn between the symbolic function of architecture and the formation of personal and social identities. "Their accumulation has reached the point where the idea of architecture as identity now rivals that of architecture as space and architecture as language as one of the principal metaphors and themes in architectural discourse."^{13}

Several reasons have been put forward in support of the claim that architecture should, and can, express local identity. Some give psychological reasons and reference individual sense of well being, others refer to the social importance of invoking the past to afford a sense of cultural continuity, still others see an economic benefit in bestowing a historical cachet to buildings and hence attract tourists and foreign investment. "If one of the negative tendencies of globalization is to blur differences, then any sign of cultural differences becomes a precious commodity."^{14} Very often, cultural and historical issues can be fused, and confused, with political and economic interests.

It is according to John Naisbitt, a question of intelligence and sensitivity, and in the end it is a question of a sense of place, of nature, of history, of crafts and of limits.

Architecture that is technologically sophisticated, as it is in high rise apartments, but also aspires to contribute to local identity, is related to the concept of regional architecture. (H.H. Harris, K. Frampton, A. Tzonis) By definition, regional architecture is never considered neutral since it is rooted in a particular people and place. It is also understood to play a role in not only physical shelter but also spiritual preservation. The goal in regional architecture is to assure that design is inevitable to a particular set of regional definitions. The question is, what determines the particular set of regional definitions?

An architecture of local identity would counter certain contemporary trends. One is the use of land and architecture as packaged items to be sold and consumed in the global marketplace. Another is internationalism, which as a cultural goal has been found

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^{13} Chris Abel, Architecture & Identity: responses to cultural and technological change (Boston: Architectural Press, 2000). 190
sterile. It is a product of commerce, not culture. "The universal expert has been devastating, economically and culturally."\(^{15}\)

Also an issue in the consideration of high rise apartments is typology. Typology is, in many ways, the opposite of regionalism in that the former seeks truth and beauty through typicality and universality, rather than uniqueness and particularity.

Chris Abel and others have argued that globalization also renders problematic if it does not undermine a regional or locally inflected architectural idiom. Globalization is a one-way street, an irredeemable, centralizing phenomenon, concentrating economic and cultural power into fewer and fewer centers composed of ever larger economic units, most of them based in Western industrialized countries.\(^{16}\) However, Stuart Hall argues that globalization has its own unanticipated imperatives, and that the very processes which typify global economic and cultural activity carry within themselves their own tensions and contradictions.

Josep Lluís Mateo: The global/local alternative corresponds at a physical level to the generic/specific dialectic: the generic as a point of arrival of the pressures of globalization, pressures understood as homogenization, and the specific as an expression of the singular. This dialectic expression is reflected in buildings like Jorn Utzon’s Opera House that finds it’s way into public consciousness as well as critical approval via the readily comprehensive images it communicates.

"The tendency to 'rise above the self' by building is a fundamental human urge. Building into the sky satisfies a primary instinct" is the posture of Burckhardt.\(^ {17}\)

Krafft called high rise buildings the "monuments" of the "artistic renaissance of the nineteenth century."

One of the biggest advantages of the towers is that they filter light through spaces in high density dwellings, as well as they permit views.

"Gropius argued that best housing types were either the one-family house on the outskirts of the city, or the ten to twelve storey apartment building. He believed that medium-height buildings were inferior, and their disappearance would only be a way of progress."\(^ {18}\)

\(^{15}\) Jeoffrey Cook, A post-industrial Culture of Regionalism (Critical Regionalism: College of Environmental Design California State Polytechnic University, 1991) 169-170.

\(^{16}\) Architecture & Identity 193.


2.1 Defining global cities

The decade of the 1970s was a starting point for new forms of geographic dispersal and internationalization. In the 1990s took place a high recommencement of innovations, particularly the development of new and increasingly complex derivatives, and in speculative endeavours, primary the rapid growth of hedge funds as important actors in the financial markets.

Global production processes by corporations requires a particular form of international regime. An example is the United States, being the star exporter of investment capital, consumer goods, and capital goods as well as economic and military power.

In the 1980s the dispersal of manufacturing was very strong; Japan and the United States took the biggest role in this, shifting the garment production to less developed domestic and foreign areas, as well as the shift of auto parts and electronic components manufacturing to Thailand, South Korea and Mexico.

The geographic dispersal of economic activity can be conceived as a redisposition of growth poles. Since the development of export processing zones represents an arraying of manufacturing capacity from highly developed to less developed countries.

The increased mobility of capital brings new forms of concentration, which are as much a part of this mobility as is geographic diffusion. These forms of mass collecting are associated with new forms of geographic dispersal, they do not simply represent a persistence of older forms of agglomeration, but respond to a new economic logic. The transformations in the capital/labour relation mobility is a constitution of new relations among the various components of a particular location. Each type of location contains a specific form of these newly constituted relations.

Multinational firms are central to the internationalization of services, with foreign direct investment one of the leading forms assumed by this activity. Foreign sales account for a very large share of all revenues among leading firms, reaching well over half in the case of accounting and advertising. This intensifies the global market orientation in large cities that are key locations for such firms.

The large-scale increases in foreign direct investment in a multiplicity of locations during 1970s, central to the internationalization of production, were followed by a subsequent phase of large increases in financial flows in the 1980s and 1990s.

In these days tradability is utility. The more rapid the buying and selling afforded by an instrument, the greater the utility. The markets become bigger in size, complexity and
scope to the point that they support a large array of specialized firms, a massive volume of trading, and a highly advanced capability for the production of more and more instruments. The greater value added in the financial industry comes from the skill and capital-intensive activities of financial institutions: market making, product development, mergers and acquisitions, and risk management.

Specialization and mass economies have contributed to making cities favoured locations, especially for the most strategic and complex of these services. The growing importance of the new information technologies for the production and distribution of these services contributed both to dispersal and concentration. Cities are likely to provide through dense networks of firms and markets an intense social connectivity.

High-income urban residences in luxury apartment buildings depend to a much larger extent on hired maintenance staff than do the less urban homes of middle-level income workers, epitomized by the middle-class suburban home in the United States. As a stratum the new high-income workers have to be distinguished from this core of wealth, of upper class.

The management and servicing of a global network of factories, service outlets, and financial markets imposes specific forms on the spatial organization. The sizableness of the operation and the complexity of the transactions, which require a vast array of specialized services, lead to extremely high densities and, at least for a period, extremely high agglomeration economies, as suggested by the rapid building of one tower after another. This process of rapid and acute agglomeration represents a specific phase in the formation and expansion of an industrial complex dominated by command functions and finance.

In the 1980s the Japanese aimed at building the most advanced form of office complexes and telecommunications infrastructure-intelligent buildings. "The urban form in contemporary cities consist of a concentric or axial pattern characterizing the market-led development."¹⁹

Manufacturing based on aggregated consumption and large scales of production and large scales of production is the leading economic sector, there is a pronounced orientation in the general economy toward the production of housing, roads, and all the other components of the process of suburbanizing that dominated economy and society. The cultural forms accompanying these processes, particularly as they shaped the

structures of everyday life insofar as a large middle class contributes to mass consumption thus to standardization.
The global city model is conceived of as a force coming from outside and homogenizing cities. They are sites where global processes are indeed experienced as an invasion, as coming from the outside, but the global city is mainly the site where global processes can be activated inside a country with the participation of some of its local actors.
Methodologically globalization can also be studied through detailed sociological and anthropological examinations of these processes as they take place in cities.
"A common critique asserts that the global city model posits convergence and homogenization among these cities. The development of global city functions in different cities across the world does indeed signal convergence of something. But this is a highly specialized, institutionally differentiated process. It is a very different process from the kind of homogenization/convergence we see in consumer markets and the global entertainment industry."²⁰
The world city concept has some sense of timeless bounded to it, because the global city model is the beginning of a specific socio-spatial historical phase.

2.2 Globalization in Vancouver

In the 1950s and 1960s Vancouver was mainly a distribution and local control centre for the province’s resource industries. Those industries, often part of larger foreign-owned corporations, extracted and processed primary resources throughout the rest of the province using large-scale production methods characteristic of Fordism. Vancouver strengthened relationships with the rest of the British Columbia and the rest of the world. During the 1970s and 1980s, the world and Vancouver recreate themselves. With improvements in telecommunication and transportation equipment, and the spreading out of multinational corporations. “All places are hierarchically linked into an international economic order characterized by a constant global circulation of money, people, information and investment”.21 Vancouver maintains its former role as a local distribution and control centre, but it is a lot more besides that.

Economic decision-makers in the region have always been sensitive to events in the wide world. The local leadership has relied on finding ways and means to take advantage of new conditions such as the opening of the Panama Canal and the postwar expansion of the Asian Pacific economies. The export of management and producer services has also a lot of potential as a generator of regional income as the export of raw and semi-processed materials.

Tourism is a main activity to which the city’s hotels and convention centre, its transportation and shipping companies, and its adventure and conventional tour operators all contribute. Universities and colleges contribute to foreign income through conventions and English-language courses. International research is becoming a more important stimulant to economic change.

The structural rearrange in North American economy is also helping the region of Vancouver: contracting out by large corporations, which were formerly but no longer integrated. Among the variety of activities are the location shooting in the motion picture industry, wheel manufacture for Toyota, and electronic equipment for aircraft control systems.

In the early 1980s was common to think of Vancouver as a ‘post-industrial’ city. “For much of the century the city had been seen as the interface between the raw material frontiers of the province and western Canada an the urban industrial markets reached by sea. This is not saying that it is merely a port through which raw materials flow, value

was added to some of the materials through manufacturing to produce items as toilet tissue, millwork, sashes, and doors."\textsuperscript{22}

"When the controversial world’s fair, Expo ’86, exposed the city to a global gaze, Vancouver’s planning department concluded that citizens were ‘two minds about the way their city should change’. In one way they wanted ‘Vancouver to be a thriving urban centre, a world city, with more jobs and business opportunities and with a greater variety of things to see and do.’ But they also wished ‘to preserve Vancouver’s present small-city character.’\textsuperscript{23}

By the early 1990’s, traditional patterns had been challenged in many spheres in the line with the rhetoric of a world city. The internationalization of the regional economy has several ways of expressing itself, of which the 1989 Free Trade Agreement is only the latest. The resource sector is increasingly controlled by absentee landlords, and its real estate, this includes office space, apartment buildings, and resort complexes that have become part of a more diverse international investment portfolio. “The Expo Board awarded building contracts to non-union companies, a provocative act in light of the high level union membership in the building trades.”\textsuperscript{24}

After the expo the land was privatize by the provincial government and sold to the highest bidder; the city secured sites for social housing, but they didn’t have fund to build it, a big amount of land was sold to a Hong Kong developer, Li Ka-shing, the process of internalizing Vancouver’s land market continues in these days.

\textsuperscript{22} Vancouver and its Region. 230
\textsuperscript{23} Vancouver and its Region. 235
\textsuperscript{24} Vancouver and its Region. 239
2.3 Coal Harbour

In the late 1880s Coal Harbour was an open waterfront, lined with marinas, float plane docks, and the railway freight ferry terminal serving Vancouver Island. At the beginning of the 1990s Marathon Realty planned the redevelopment of the area changing it into a high-density residential and commercial neighbourhood. Coal Harbour is the closest small marina to Vancouver’s downtown and, with False Creek, is one of only two boat harbours in the inner city.

Storage and shipment by rail of unsafely goods from the Coal Harbour area was discontinued in 1986. In 1983, with the project of Canada Place, little development activity had occurred on the Central Waterfront and in the Coal Harbour area.

The most important goal of the residential development in Coal Harbour was to fit people close to downtown jobs, reducing commuting costs. Coal Harbour was developed upon the following:

- Guarantee that the diversity and broad mix of water uses that have evolved in Coal Harbour are preserved and having them as a major role for the shape of the character and identity of the new mixed-use waterfront neighbourhood in a way that reinforces the image of the Coal Harbour inlet.
- Promote the provision of a variety of new urban uses including housing, retail, office, hotel, recreational, cultural and public open spaces as an extension of existing patterns nearby.
- Permit the diversity of activity on the waterfront with the objective of making the area more accessible and enjoyable to the people of Vancouver. The manifestation of the use of the area by outsiders and visitors is a main characteristic.
- Guarantee that the gateway experience to Stanley Park is respected and a sense of the park-like setting as the western end of Coal Harbour is continued into the Coal Harbour development areas.

The Marathon site's historic role of connecting rail and marine operations has existed on reclaimed flatland at the base of the downtown escarpment. Downtown offices have exploited the prominent overlook to the harbour activity below and accordingly lined the escarpment edge, further reinforcing the geographic sense of two completely different places. Since the existing rail and ferry functions were removed, the site can be considered a clean slate and an open opportunity to create a special new place. The Bayshore site's historic role as part of the entrance experience to Stanley Park has been
possible in part due to its surface parking lot open spaces. Georgia Street commuters have enjoyed panoramic views of the mountains, Stanley Park and Coal Harbour. The Marathon site is relatively flat, at sea level and distinctively separated from its land surroundings by an escarpment 40 feet high at its easterly end, but declining westward to disappear at Cardero and Georgia Streets. The escarpment has been a traditional boareder to the downtown central business district. The extent of the natural escarpment in 1990s was primary the two block between Broughton and Bute Streets. Bridging of the flatland has occurred with Granville Square and Canada Place and the approved Waterfront Centre will close the gap existing behind Canada Place.

2.3.1 Topographic Policy
Promote the linkage of the Marathon site with the Downtown but either maintain some of the former 'escarpment edge' by special landscaping treatment along its existing alignment where appropriate, or express a new 'edge' in association with public open space or street design. Make alterations to the treatment of the new ground plane to respond to the variable adjacent downtown topographic context, and bring the sense of escarpment closer to the new water’s edge where it seems harmonious. Development of a new surface grade connecting the top of the escarpment to the waterfront, using the area below for parking, utility areas and a potential service road. This encourages a more convenient connection of the site with the downtown and a gentler transition to the waterfront.

2.3.2 Residential Policy
Recognition of the high density context of the immediately adjacent downtown and West End areas, the overall City objective was based on encouraging residential opportunities close to downtown work places to minimize transportation impacts, the relatively small size and narrowness of the site, and its high amenity potential next to the large expanse of the Burrard Inlet waterfront – allowing high average residential densities in the Coal Harbour area comparable to those permitted on or near other waterfront locations in the downtown peninsula. Promote a density transition in the Coal Harbour area that relates to its downtown and waterfront context. Allow higher densities at the eastern and rear portions of the site.
adjacent to the high-density Downtown District. Encourage lower densities adjacent to the waterfront edge and at the western part of the site that is closer to the West End and Stanley Park.

Density is only one measure of community character. Other aspects that were considered in evaluating residential communities include the creation of areas of distinctive character, the creation of identifiable spaces with a sense of private enclave, appropriate integration of community/commercial services, linkages, and open space character, as well as other good site planning principles.

Residential neighbourhoods throughout the area should have diversity in densities and other traits in response to neighbouring characters, area-specific characteristics and household mix.

All housing designed for households with small children should meet the criteria contained in the Council-approved publication “Guidelines for High Density Housing for Families with Children”.

Supply a density incentive to encourage the provision of affordable rental accommodation in the Coal Harbour area.

Calculate social and family requirements on the base density only, excluding the rental housing component from social and family housing requirements.

2.3.3 Social Diversity

Reach a diversity of household types and incomes, including seniors, households with children, special needs, singles and couples, in each Coal Harbour community while recognizing that this diversity will vary by area based upon site characteristics.

2.3.4 Household Mix

Overall, achieve a minimum of 25% of the units as suitable for household with children, and establish an area target of housing enough families with young children to support at least a K-3 school annex located on the Marathon site.

2.3.5 Income Mix

Achieve housing for household of low and moderate incomes as well as higher incomes. Overall, achieve a minimum of 20% of the dwelling units on-site in each major development area to be available to core-needy households under the non-market programs with 50% of the core-needy to be for households with young children.
Allow to pay-in-licu alternatives to non-market housing mix on the escarpment sites along Pender Street where because of their small size it is not practical to provide these units, as determined by the City.

2.3.6 Parks and Public Open Space

Neighbourhood park space is referring to land dedicated to and under the care and custody of the Park Board but excludes waterfront walkways and other regional park spaces. Public open space refers to open-air amenity space that is easily and clearly accessible to the public 24 hours of the day, including enclosed atrium spaces.

Guarantee that parks and other public open spaces of the highest quality are an integral part of the Coal Harbour community, and that they are treated to enhance and reinforce the marine character of the Coal Harbour waterfront. The major park space should be at the water’s edge, and its sense of a public space should be enhanced by establishing strong visual and pedestrian connections between adjacent access streets and the waterfront.

Supply parks and other public open space of a size, location and configuration to meet the needs of residents and workers, also provide attractions for visitors that can be compatible with local residential and commercial environments, taking full advantage of the waterfront setting.

Select land which, in location and design potential is suitable for parks and open space use.

Neighbourhood parks should accommodate both active and passive activity and be capable of modification to meet changes in community recreation needs. Park and open space design should differentiate areas used mostly by local residents from those used regularly by outsiders.

Locate some parks to enhance and reinforce access opportunities from the existing city. Ensure that private and semi-public open spaces are sufficient in size and configuration to provide adequate spaces between buildings.

Encourage the provision and integration of public art into the design of parks and public open spaces. Ensure that these art features are of a quality and character that is appropriate to this high profile waterfront location.
2.3.7 Built Form Policy

Ensure buildings massing.
Contributes to street edge definition, through ‘street wall’ building particularly on north-south streets and along the waterfront promenade. Shape street walls to provide ample, hospitable public streetscapes with landscaping, allow gaps for views through and sun access to open spaces, and have some setback from the property line to accommodate landscaping and semi-private open spaces.

For tall buildings on this waterfront site, require comprehensive wind studies to ensure that potential downdraft wind conditions are mitigated and nearby public open spaces meet acceptable criteria.

Design a high quality streetscape and building base treatment that provides for urban design continuity and coherency, defining the character of the area.

Guarantee that the commercial ambience of the retail development reflects a marine character appropriate to the variety of adjacent waterfront uses, and reinforces the atmosphere of the working small boat harbour.

Views

The Vancouver Rowing Club building is an historic landmark currently seen from the west part of Georgia Street, though the Bayshore site.

Ensure that the development preserves most predominant views and maximizes potential views of the city’s natural setting and unique features contributing to its special identity.
2.4 The Vancouver Style

- The point towers range from fifteen to forty stories, separated from one another by a minimum of 80 feet for preserving public views and maximize privacy.
- The towers have small floor plates, about 7000 gross square feet set on top of a streetwall podium with no blank walls.
- Heights are capped at 300 feet; each tower’s base must be 30 to 70 feet high.
- Each project must be set back twelve feet from the existing sidewalk. Six feet are reserved for sidewalk widening and street trees and six feet for landscaped zones that include outdoor seating and entrances to individual units.
- The podiums are lined with three-story townhouses or retail storefronts. Landscape on top and parking underground.
- Scissors stairs provoke the towers to be tall and slim. Two stairways in the same tower, one over the other, and a firewall separated.
- The towers are set in a grid of streets that extend the existing urban fabric, supplemented with separated bikeways and sidewalk boulevards.
- Double rows of trees line the streets, with landscaping setbacks and separate entrances for the townhouses. Vancouver has a high emphasis on pedestrian safety and accessibility.
- Abundant parks and green spaces, along with public art and amenities.
- Mix use neighborhoods with mixed income population.
- Neighborhood street life should get enhanced with every project.

Fig. 2.1-Floor plans of the Carina and Shaw tower as examples of the most recent high rises in Coal Harbour.
3.1 Existing project

The high rises chose for this case study are Harbour Side Park towers. The main fact is to incorporate and take advantage of global technology to reinforce the sense of locality in Harbourside Park, giving a strong character to this specific building. Architectural identity at Coal Harbour may be achieved in high-rise buildings and urban rooms by exploiting the potential of new materials to respond to, and express, local conditions of wind, light and rain.

Architecture can reflect the identity of a place and those who live within it. Reciprocally, both the place, in this case study—Coal Harbour, and the user can be a basis for the creation and enhancement of architectural identity.

The towers are entirely clad in Jade green high performance glass complete with dark green aluminium mullions. They rise 28 storeys high overlooking Coal Harbour, the high rises are multi-faceted to maximize views. They project was completed in 1996.
3.2 Reasons for intervention

- They were the very first towers built in Coal Harbour and sought to keep the escarpment line.
- The landscape in between the towers looks merely ornamental without reflecting any local idiom of the neighbourhood.
- This project wasn’t built with the same guidelines as the rest of the complex like the use of a more transparent glazing and the podium hosting townhouses or retail storefronts.
- The use of a reflective glass gives a corporative character to the towers, nothing happening inside the high rises is able to be measure from the street.
- The shape of these towers has a good intention of giving views to most of the apartments, even though analyzing the plans I notice that the inhabitants don’t have the opportunity to step out to balconies, unless they live in the penthouses or in the southeast and southwest units.

![Diagram](image)

Fig. 3.2-Spatial conditions and typical floor plan and penthouse floor plan of Harbourside Park
3.3 The Site

The main circulations surrounding the chosen high rises are Georgia street and Coal Harbour’s sea walk. The streets for accessing the buildings are Jervis and Broughton. The spatial characteristics of the site is the closeness to Burrard inlet, a visual continuity of open space going from the building behind the project down to the water, and a project planned by the City of Vancouver of building an elementary school where the parking lot of the community centre is located at the moment.

![Diagram showing circulations and spatial conditions of the site]

- main circulations: sea walk and Georgia St.
- ways to access the site
- continuity of open space
- actual parking lot of the community centre
- that will become an elementary school
- Burrard Inlet

Fig. 3.3-Circulations and spatial conditions of the site
When Harbourside Park was built, Hastings did not exist in that part, there was just a cliff with the railway underneath. The architects built a new road for pedestrian and vehicular access to the towers.

The urban room proposal consists on using the secondary road parallel to Hastings to reinforce neighbourhood identity and community life. The only part of that road that is remaining the same is the pedestrian access.

Fig. 3.4 - Current conditions of the site and space used for the new proposal
4.1 Wind patterns

The Canadian Climate Normals from 1971 to 2000 indicate that the strongest wind at Vancouver Harbour are from the West, Northwest and Southeast. In Vancouver the strongest winds concentrate between October and May, but the seasonal variations of peak and average winds is not clearly marked. The wind circulation during the day is more vigorous than at night.

Fig. 4.1-Wind speed in Vancouver Harbour
4.2 Sun patterns

The north shore mountains exert dual influence on solar radiation in Vancouver. As the mountains present a greater cloudiness condition the receipt of solar radiation is reduced. When the mountains present cloudless conditions, “radiant energy values increase with height upslope because the sun has a thinner depth of atmosphere to penetrate, the lower terrain may be fogged.”

Fig. 4.2-Vancouver’s solar graph

4.3 Precipitation patterns

The Canadian Climate Normals from 1971 to 2000 show that the amount of precipitation received at Vancouver’s Harbour is an average of 1588.6 mm per year. The project is based on this date for the calculation of the vessel collecting the rain water during the rainy season in Vancouver, that goes from September to May.

5.1 Concepts

The concepts for the building envelope were based on what makes Vancouver and Coal Harbour unique.

- Multicultural city: different nationalities or backgrounds unified in the same culture and language.

- Individualistic and not so rooted society that still needs to look for identity.

- Natural environment is still stronger than the created identity. We recognize a picture of Vancouver for the setting rather than the skyline.

- Balconies
  An important element in Vancouver that allows people to contemplate its unique setting are their balconies.

  The existence of the balconies in Vancouver was a created identity. When the West End was first built, its towers didn't have balconies, people asked for them.

- Each dweller can create its own identity

  I believe that every person in the building can 'personalize' its own space, introducing some elements that could be moved in different positions according to the privacy, amount of light, protection from the wind and sun; offering the opportunity to enjoy their balconies.

- In Coal Harbour, even when the ocean is very close, the access to it by swimming is denied, if people is to have some contact with the water it is usually by boats or just contemplation it is a setting to look at not really to interact with.

  The concept of identity is enhanced by doing the opposite in the project, make it an architecture where the interaction between the urban elements and the people will be provoked and enhanced.

- Very rainy place

  Rain water is considered as a design element, in rainy days the movement of the rain water down the façade can change the way it looks from the non rainy days.

  The design of a 'vessel' that can collect the rain water during the rainy season and release it between June and August.

Fig. 5.1-Pictures of the models through which the concepts were generated
5.2 Building envelope

The floor plans are extended to improve the spatial qualities of the towers, giving the users a place to step out and enjoy the natural environment. The main idea of the balconies position is based on a resemblance of a water fall, strengthening the sense of identity in Vancouver that has a high precipitation level.

The balconies in the north side of the building rotate from east to west as the go up the towers. The railing of the balconies in the south side of the building does the same rotation, but going from west to east as they move up the high rises. The area in black is the extension proposed.
In the hot sides of the building (east, west and south facades) some form of solar shading is required, controlling the glare and quality of light entering the spaces. The wind direction at Vancouver Harbour moves the vertical shading devices material reinforcing the identity and the main activity of the area that is sailing.

The east and west facades besides having the wind responsive elements, they have some troughs that lead the rain water down along them for strengthening the idea that the building skin changes through out the different climate conditions of the year.

Fig. 5.4-North and South elevations showing the proposal and existing condition

Fig. 5.5-East and West elevations showing the new project
The structure of these wind responsive elements is operated by the inhabitants of the apartments that reflect their own identity in the way they position them, either by closing or stacking them. These wind responsive devices besides being able to be adjusted to suit outside conditions to allow maximum benefit from the sun and provide protection from glare and excessive heat gain; in winter they can be closed to reduce heat loss.

Fig. 5.6-Isometrics on the positions the moving elements can be placed
Since the wind from the east is not the predominant, the east façade has longer moving elements positioned randomly in different places along it.

Fig. 5.7—Details of how the moving elements are operated
A high-end development such as Coal Harbour, pays strong attention on the people's security and privacy. The moving elements proposed in the facades are also functioning as privacy screens for the occupants; sometimes the reflection of the light on the exterior glass of an apartment allows people to see in somebody else's unit.

It is necessary to show some of the views people will have with the extension of the balconies, since in architecture what really matters is the way people experience the space. The second most important fact is that with the impressive setting Vancouver possess, we have to make sure that people's view don't get obstructed with very opaque elements.

Fig. 5.8-Views from the balconies
The fifth façade of the building hosts a vessel (water collector) that gives a unique identity to the Vancouver’s skyline. This vessel collects the rain water through out the year and can be used for gardening during the summer. The roof of the building is also used as a private gathering place for the people living in the towers, creating a roof garden for social purposes.

The size of the vessel is a little over what the Canadian Normals for precipitation in Vancouver Harbour indicate, this is for the water to overflow in a flat reflecting pool under the vessel, that latter is lead through canals to the troughs in the east and west facades.

Fig. 5.9 - Vessel floor plans and picture
5.3 Urban room

The urban room proposal consists on using the secondary road parallel to Hastings to reinforce neighbourhood identity and community life. The pavement of the urban room is based on two pier-like platforms where the arches stand, and perpendicular to them a series of narrow canals that define the space and leads the water down to the ocean. The idea of the pier is mainly to enhance the identity of the urban room, resembling sail boats. The canals are paved with different colours pebbles.

Perforations at the edges of the arches will drain the rain water to a series of canals in the floor plan.
The secondary structures of the arches have the ability to open and close according to the weather conditions and the use of the space. This is accomplished by rotating and bending the bearings upwards, creating sails arranged in different positions that move with the wind as the sail boats in the Harbour.

Fig. 5.12-Arch plan with the materials used for the design

Fig. 5.13-Sail movement detail and model with the three positions of the sails
The activities proposed under the canopies are seasonal, allowing the space to adapt to the season of the year (spring, summer, fall and winter), weather conditions, and the needs of the community. One of the main ideas of the canopies is to support the activities of the elementary school besides the community centre and a project for the seniors in performing arts at 1616 Bayshore Drive.

<table>
<thead>
<tr>
<th>Season</th>
<th>Activities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spring</td>
<td>flower sale / contests, sail boats parts repair, gathering of inhabitants</td>
</tr>
<tr>
<td>Summer</td>
<td>gathering of people, music players in the road, marine market, garage sales</td>
</tr>
<tr>
<td>Fall</td>
<td>coffee/tea vendors, local wine tasting, school kids performances, fund raising, pumpkin carving competitions</td>
</tr>
<tr>
<td>Winter</td>
<td>Christmas sale, bazaar</td>
</tr>
</tbody>
</table>
The public realm in such a privileged neighbourhood as Coal Harbour needs special treatment to express community identity and provide community social life. One of the goals of city hall is to use and special treatment of the public realm are necessary to express community identity and provide community social life. The side walks must be effective living rooms of the neighborhoods.
6.1 Importance of materials for the research

With the increasing focus on the surface, the nature of the materials becomes one of the primary focus for contemporary architecture: material as such emerges as a concept. "The initial thrust is not just fashion, but the simultaneously essential and superficial 'nature' of coverings, the latent eroticism of clothing, the secret language of mask and skin-natural or artificial."\(^{26}\) Skin is, paradoxically, the most profound thing on the human beings. It is a border that defines within and without, a protective frontier, the envelope of the flesh, the body’s armour-skin separates and isolates. An interface of pains and pleasures. Skin is a way of communication, several things can be perceived in a person when blushing or sweating. As a surface, the skin is the frontier of personal identity and simultaneously the tangible wrapping of our essence. In these days, stretched, and manipulated by technology has become a changeable shell. The same is happening with architecture, where we are finding a genetic manipulation of its surfaces. The skin of architecture has changed its density for diaphanous qualities, it does not imply closing it but a threshold to it. Architecture is not only an alive art, but a living-in art that has to manifest its changing condition, for this reason it becomes a veil or a mask in its structure.

The main layout of the building is defined by the original structure; contents are emphasized by in fills, like screens, placed behind or in front the original walls. In this way the character of the existing building is used to define the communal and personal identity, by using material, colour and composition, the various in fills work towards a recognition of identity of individual residents, without overshadowing the interior of the buildings.

For responding to an specific place, in this case Coal Harbour, the research first based on materials that could change colour or any property according to the weather. After going over the design for several times most of them were taken out the final project. The ones that are used for enhancing identity in this project are the aramid and carbon fibre sailcloth for the moving elements in the façade, as well as the sails in the urban room; and the Teflon coated fibre glass is used in the vessel, the same used in Canada Place.

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6.2 B. lab Italia

This Italian company researches on materials and objects that change their characteristics with people’s interaction. The company aims to overcome the accepted limits that constrict the projects, offering a unique form of expression. The flexibility of the surfaces allow the user to play, and enables him to move and mix colours and chase bubbles in the top plane of its products.

The line of products consist of layered acrylic panels which contain a pigmented membrane, this membrane actively transforms with vibration and touch. It enables people to move and mix the colours at their own will. This technology is currently available in B.Lab’s so-called Flex-Interactive tables and is being developed in a line of floor tiles.

Fig. 6.1-Material changing colours
6.3 Shading Net

Foiltec designs, engineers, and manufactures Texlon Foil Systems, one of the most innovative roofing and cladding solutions available. No other system matches Texlon’s transparency and durability, and its lightweight or insulating properties. It is an intelligent and dynamic system that has the capability to adjust its shading, thermal, and aesthetic characteristics as the sun moves across the sky, responding to specific program and climatic requirements.

The profound ecological characteristics of TEXLON foil systems impacts not only the environment within product selection, but the sustainable design opportunities that are presented to the designer. The foils have an extremely low energy consumption during their manufacturing process; and the complete system weighs between 50-90 percent less than systems made from other materials with comparable properties—further conserving on the structural system needed to support the cladding. Part of the system is manufactured from recycled materials and the entire system can ultimately be returned to our facility to be recycled at the end of the project’s life. The longevity and low life cycle costs make TEXLON systems effective solutions for sustainable in long life and low maintenance.

The foil cushions, with a 3% pattern overlap, are pneumatically able to transform the wall envelope from a translucent to an opaque system. After each performance, the wall transforms back to a 45% transparent state.

The foil products have an extremely low energy consumption during their manufacturing process; and the complete system weighs between 50 and 90 percent less than systems made from other materials with comparable properties—further conserving on the
structural system needed to support the cladding. Part of the system is manufactured from recycled materials and the entire system can ultimately be returned to our facility to be recycled at the end of the project's life. Architects can explore sustainable design solutions for responsive, intelligent day lighting and dynamic thermal properties that can alter spatial characteristics and building performance. These opportunities and capabilities put Foiltec Systems in a category to themselves.

Advantages:

• exceptional light transmission
• UV transparency
• active solar shading
• outstanding insulation
• catalyst for natural ventilation
• ecologically friendly / energy efficient
• acoustically transparent
• long-span / any shape capabilities
• fire self-venting
• extreme durability
• unaffected by atmospheric pollution • life expectancy - greater than 30 years
6.4 T-Opal

The product provides a very elegant solution is by windows that automatically produce their own shade. Researchers at the Fraunhofer Institute for Building Physics IBP, Stuttgart, under contract to industry, are developing window panes which transform to a milky white when temperatures reach a certain level, thus serving as protection from the sun.

It consists of a cast resin glass with an integrated polymer layer. The polymer is placed between two panes of glass like a thin liquid mass. When exposed to UV rays the polymers turn into a continuous solid mass.

The system is transparent during winter time and opaque during summer for reduction of energetic radiation.

Fig. 6.3-T-Opal changes colour with different temperatures
6.5 Lumisty film

The film is experienced as a completely clear, transparent glass surface that within one or two steps becomes partially fogged. After some more steps, it is completely fogged. Walk backward or forward, and it’s clear again. As the viewer’s angle shifts, so does the transparency or translucency of the film.

Fig. 6.4-Lumisty film changes opacity with different view angles
6.6 Skatelite

It consists of multiple layers of paper from certified managed forests impregnated with a low-v.o.c. phenolic binder. The end product is a dense, smooth, and durable material that may be modified with conventional woodworking tools.

Skatelite has been recognized as the long-sought solution to problems of wear, rot, heat, maintenance, performance, etc. in high-wear exterior applications such as skate parks. Skatelite is available in 5’ x 12’ panels and has a 30,000 psi compressive strength. There is no wear off of the material when logos are printed directly onto it.

It is fire resistant material and self-extinguishes even under intense flames. Chemicals do not affect it, and is a long lasting material despite its excessive use and weather conditions.

Another property is that it does not bend or break under regular use. The product is recently used by architects that find it very useful because it does not require an additional support; it holds long spans and cantilevers. As a rule of thumb, 3/4”-thick material is structurally stable with a 12” overhang, 1”-thick material is stable up to an 18” overhang, and 1 1/2”-thick is stable up to 24”.

Fig. 6.5-Pictures of skate ramps manufactured by skatelite.
6.7 Kinetic Light Sculpture of the Zeilgalerie

The sculpture consists of a perforated surface of a sheet metal placed in front of a blue façade. The metal sheet remains grey and only oscillates with the play of daylight. When dusk falls, it starts transforming itself into blue and yellow floating figures, that change colours depending on the prevailing weather conditions and sound.

Three groups of lights reflect from the inside and outside of the metal sheet in front of the building's wall. They move upwards and downwards through the surface, varying the degree of yellow particles. The sculpture changes in real time according to the wind and rain.

On top of the building a computer terminal and weather station directs the image, the temperature determines the amount of blue and yellow particles. The yellow moves sideways with the direction of the wind that also determines the speed on which they move. The blue moves vertically with the rain.

The upper area of the facade is crossed horizontally by the wide, rapidly changing line graphic that visualizes the degree of noise made by the passers-by in real-time. When music performances are held outside the gallery, this part of the façade reflects the sound of the instruments.

Fig. 6.6-Blue and yellow particles moving with different weather conditions
6.8 UK Ultra sailcloth

The goal of the manufacturer was to create a lighter, stronger, and less stretchy sails, they obtained it by the combination of Spectra laminates and carbon fibre tapes make the most UV resistant sail on the market. They are very light. They perform better with strong wind because they hold their shape. The design and engineering of the laminate and the sail are done in unison:

1. The load map of the sail is followed by the load bearing materials.
2. The density of the materials varies directly with the load concentration.
3. The materials themselves reflect exactly what the sail designer called for.
4. Secondary and tertiary loads are handled by the addition of a tri-axial aramid scrim.
5. Sail shape is introduced by the best and most time tested method, cross cut seam shaping.

They use three different thickness of film and even have a film with a Dacron covering for high performance cruising sails. The difference between these sails and other hi tech products has proven to be their inelasticity. The range of materials used in Ultra sails is extensive: including five different deniers of aramid yarn, two sizes of carbon fibre yarns as well as Pentex and fibreglass. They use tri-axial scrims of two different types of aramid and one of fibreglass. They use three different thickness of film and even have a film with a Dacron covering for high performance cruising sails. Considering the fact that all these various materials can be mixed and matched, it is understood why this company claims to be able to engineer exactly the right product for diverse needs.

Fig. 6.7-Sail cloth made of spectra laminates and carbon fibre
6.9 Teflon coated fibre glass

Teflon coated fiber glass is reputed to be finer than silk but pound for pound stronger by steel. The white fabric reflects 75% of the radiation. It can withstand temperatures up to 1,500F and does not alter colour with the sun's rays. Its life expectancy is about 30 years. Since about seven percent of the sunlight is transmitted by translucent fabric, there is no need for artificial lighting.

- Self-cleaning to insure a lasting good visual appearance.
- Lightweight yet capable of carrying high tensile loads with little or no long term creep.
- Good thermal insulation qualities - Non-combustible and also non-toxic when subjected to fire.
- Easy to fabricate and ship
- Easy to repair on site if required - Maximum 30% strength loss and a leveling off at the value over time

Teflon-Coated Fibreglass fabric derives its basic structural strength from the fibreglass and utilizes Teflon coating for protection and durability.

Fig. 6.8-Projects using Teflon coated fibre glass
7.1 Conclusions

Identity at Coal Harbour high rises and urban rooms may be reinforced by having inhabitants, place and environment as the basis for doing architecture. When people can interact with its surroundings, a strong sense of identity is brought forward, this is the reason sculptures are meant to be touch and feel. The closest and attached dwellers feel with the place and space they live in, the more they identify and establish themselves. In such a magnificent city as Vancouver, a main issue for doing architecture is based on framing the natural views and improve the space where people live; allowing them to enjoy their surroundings. Identity needs to be strengthen in its architecture, since people most likely recognizes Vancouver for the mountains and ocean rather than the skyline.

The respect to an architectural context is a fundamental issue for architects when proposing something new, we must study what already exists and the reasons the buildings are set in certain way, specially as an outsider, this helped me understand Vancouver better.

One of the main concerns for the developing this thesis was the research on materials to bring forward the main activity taking place in Coal Harbour. The materials selected were the sailcloth, wood for being the West Coast main construction material, and the Teflon coated fibre glass for the design of the vessel, as a resemblance of the material used in Canada Place.
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