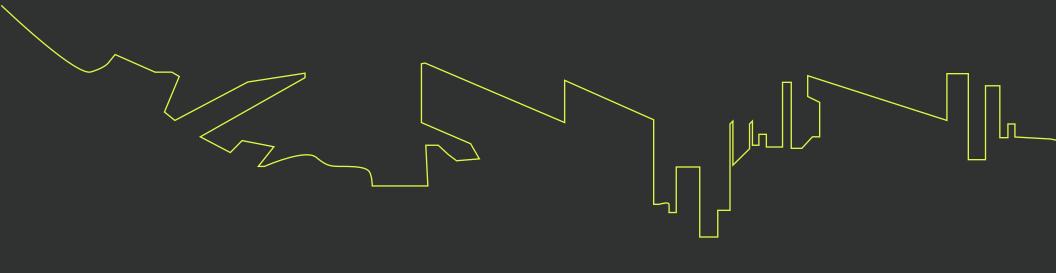


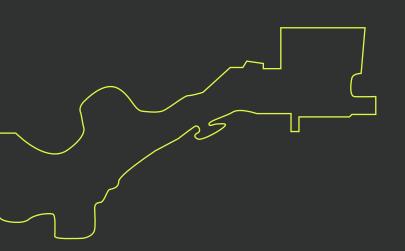
metrocore

architecture
landscape architecture
planning
transportation engineering



CONTENTS

PREFACE	
THE STUDIO	2
VISION	
DESIGNING THE CITY FALSE CREEK FLATS HASTINGS/STRATHCONA MOUNT PLEASANT CLARK DRIVE	3
METROCORE FRAMEWORK	4
IN THE STUDIO	5



PREFACE

THE STUDIO

"The city is a solution"

- Jaime Lerner former mayor of Curitiba, Brazil



The MetroCore Interdisciplinary Urban Design Studio, held in the fall of 2009, was a semester long course focusing on urban design approached through multi-disciplinary lenses. The course was available to University of British Columbia masters students in Planning, Architecture, Landscape Architecture and Transportation Engineering. The studio was structured into four modules, beginning with an in depth study of several precedent cities and culminating in the final comprehensive design strategy. Students were divided into four groups, each focusing on a particular study area within the metro core for the final design project. The studio also featured a variety of guest lecturers from the design, planning and engineering communities. Using strategies gained from the precedent cities study, an investigation into various lenses of planning, information from guest lectures and site visits, the students formulated master plans for each of the study areas; the False Creek Flats, Hastings/Strathcona, Clark Drive and Mount Pleasant. More detailed and discipline-specific design interventions were integrated into the master plan to create a comprehensive plan, implemented at various scales and stages. The final studio presentation was a full day event, attended by many well known and influential individuals and specialists from a wide range of disciplines within the City as well as private firms.

SCOPE+CONTEXT



central area plan

metro core



VISION

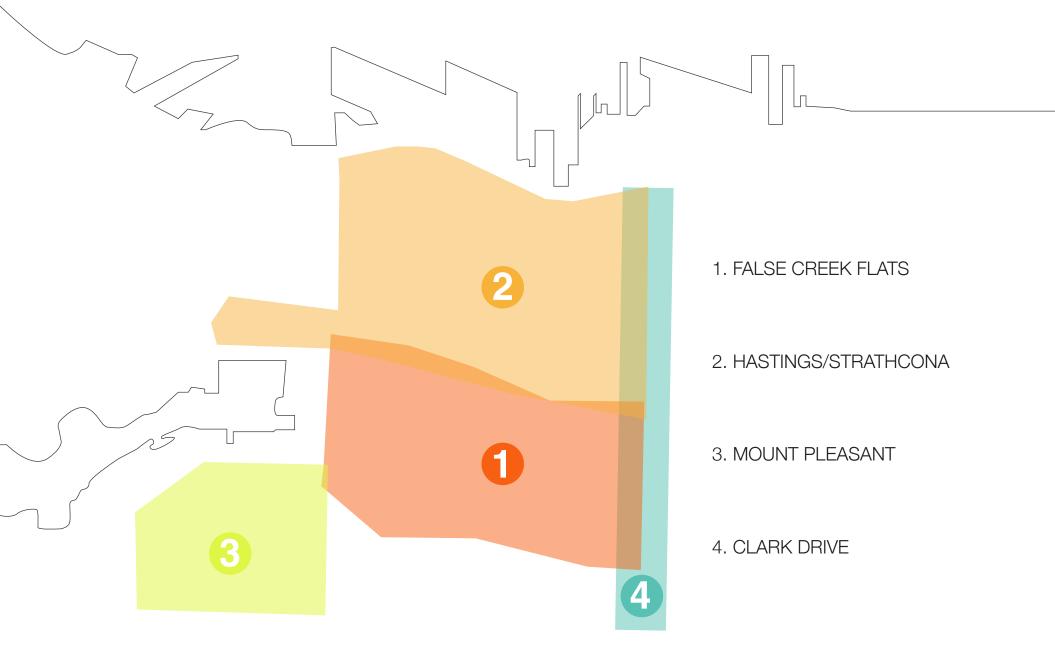








SUBAREAS



- DESIGN GUIDELINES
- OPEN SPACE
- BUILDING TYPOLOGIES
- TRANSIT VILLAGE
- FOOD PRECINCT
- GREEN SPACE FACTOR

FALSE CREEK FLATS



The vision for the False Creek Flats is to create a complete community by layering industry with homes, habitat, local production and job diversity. Over a 30-year period, the population of The Flats is proposed to increase from, in essence, zero to nearly 10,000 and the number of jobs will increase from 6,000 to nearly 20,000. This is all being done while enhancing the industrial function of the Flats with a 60% increase in industrial floor space, with industry mandated through policy and regulatory measures.

The backbone of our proposed mixed-use community would be a new green corridor, which replaces the existing CN rail yard. The green corridor would re-connect The Flats with present-day False Creek and would include a canal system from False Creek to a new lake. By consolidating the yards north of Terminal Avenue, the opportunity arose to create a vibrant, mixed use community to the south.

The south of the rails would be largely mixed-use with residential, commercial and office being integrated with compatible industry which might include print shops, technology, woodworking and textiles.

This vision came from a rigorous analysis that identified Vancouvers need more housing to address a growing population, industry as important for job creation, a strong economy and a resilient future. The Flats provide a great opportunity to create a vibrant green community and activity hub for the greater region.

GROUP



Anita Yufe *architecture*

Mandy Yu architecture

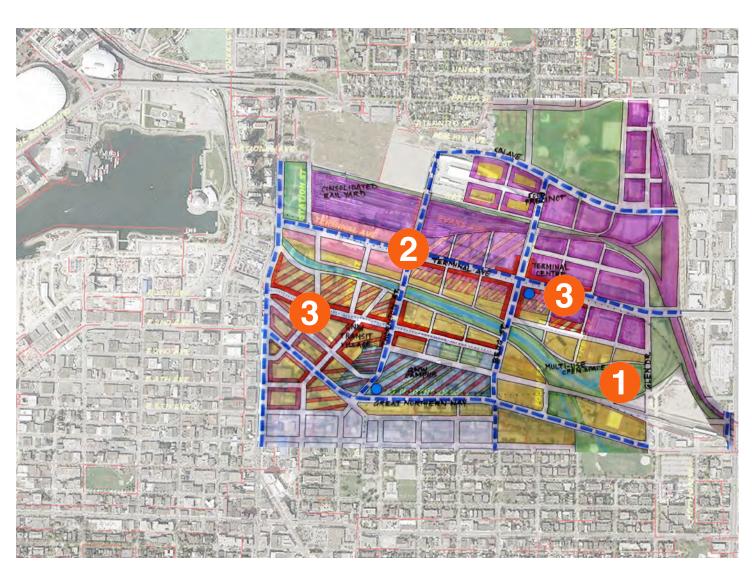
Sarah Primeau *landscape architecture*

Waleed Giratalla *planning*

Joanna Clark planning

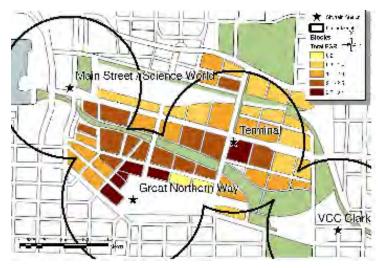
James Johnson *landscape architecture*

CONTEXT



- 1 putting open space first
- 2 connectivity
- 3 innovative mixed-use typologies

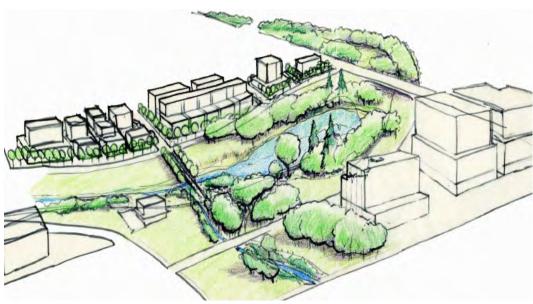
DESIGN GUIDELINES





- 1 Diversity of land uses, neighbourhoods and housing types
- 2 Open space multifunctional green corridor
- 3 Enhancing ecological health
- Density and intensity for all land use types
- 5 Unique mixed-use typologies
- 6 Transit oriented development focused around nodes at two new SkyTrain stations
- 7 Sustainable economy promote and support sustainable industrial and commercial based economy

OPEN SPACE



ECOLOGICAL

- storm water management
- wildlife habitat
- microclimate mediation
- daylighted creek

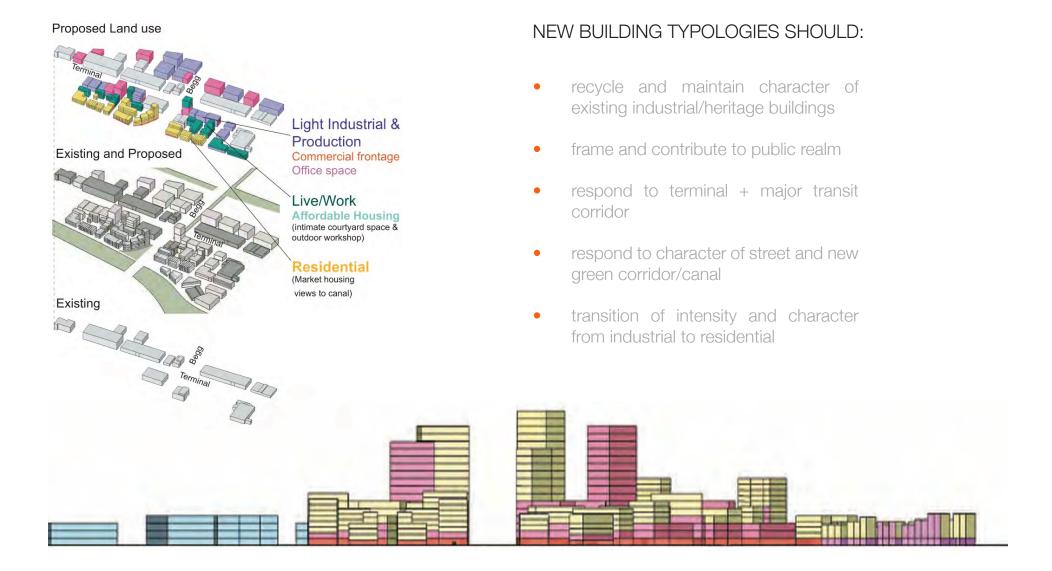




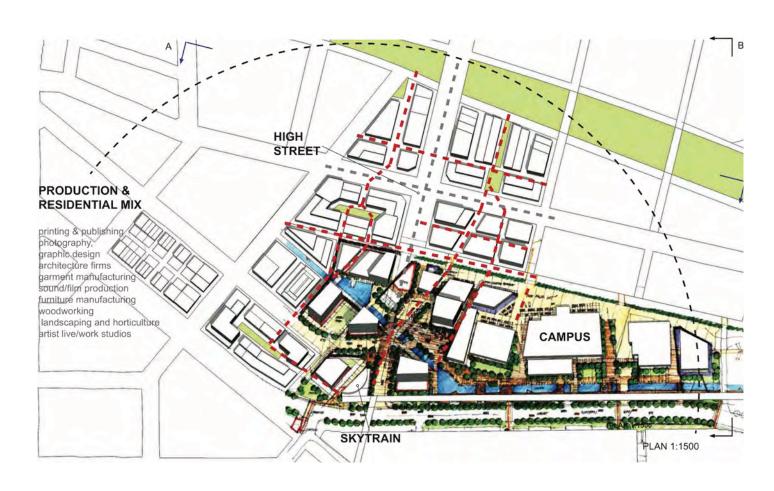
RECREATION

- biking/walking paths
- canoe/kayak
- wildlife opportunities

BUILDING TYPOLOGY



TRANSIT VILLAGE





FOOD PRECINCT







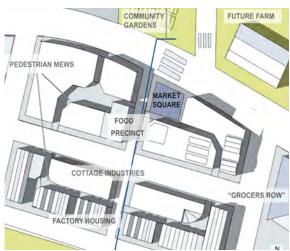


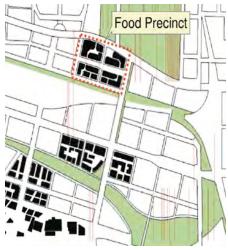












FOOD PRECINCT PROGRAMS

MARKET

- market square
- indoor market
- community kitchens /cooking school
- non-profit organizations
- public art

PRODUCTION

- textiles
- food processing
- breweries
- composting/recycling depot
- woodwork/metal work

URBAN AGRICULTURE

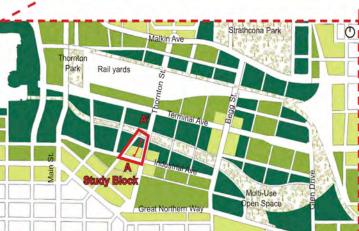
- future farm
- greenhouses
- green roofs/vertical farming

GREEN SPACE FACTOR









GREEN SPACE AS A BUFFER

green space factor zoning to act as a buffer to areas around habitat refuges

Green Space Factor Calculations

Key Design Practices Used	Green Factor Multiplier	South Parcel		North Parcel	
		Area m	GSF	Area m²	GSF
Soil depth over 60 cm	0.6			107	64
Infiltration garden / sware	1.0	120	120	350	350
Shrubs > 60 cm at matumy	0.3			750	300
Trocs with carregy of 4 - 7 m	0.4	8	26	83	35
Trees with canopy of 7 - 10 m.	0.5			64	32
Green roof, extensive (5 - 10 cm)	0.4	674	270	1176	470
Green roof, intensive (>10 cm)	0.6			404	242
Green wall	0.6			568	341
Approved water features	0.6			300	180
Ripanian / aquatic planning	0.6			100.	30
Permueble paving (> 60 cm base)	0.5	430	86	539	270
Incurporation of downed wood	0.3			100	:00
Incorporation of berry shrubs/frees	0.2			600	120
Incorporation of native species	0.1			2000	200
Subtotal (numerator)			500		2714
Parcel area (denominator)			2430		4523
GSF score			0.2		0.6

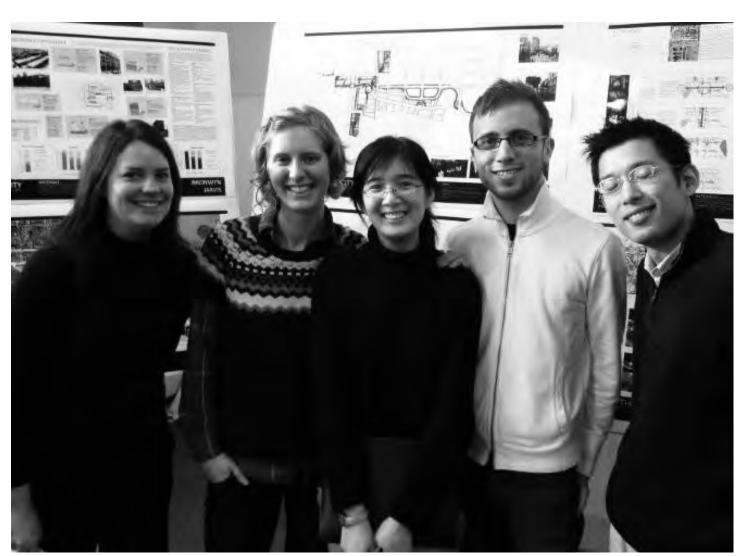
- DESIGN GUIDELINES
- OPEN SPACE
- TRANSPORT
- BUILDING TYPOLOGIES
- MAIN AND MALKIN
- MALKIN CENTRE

HASTINGS / STRATHCONA



This group considered a variety of interventions that ranged from the preservation of critical areas and demographics to new large-scale urban moves in the city. The area of Hastings and Strathcona is known as the Downtown Eastside and is home to a strong community and historic neighborhoods. The proposed framework plan developed new neighborhood profiles rooted in affordability and that could support the needs of a diversity of income groups. A new streetcar corridor along Hastings would become more dense and also provide better transportation access from this area. This group also worked with the existing Georgia Viaduct, proposing an alternative condition that would bring the bridge down closer to the Downtown, and opening up more land for parks and development. The new community would be aligned with existing civic axes into the city, and provide a gateway experience. The Dunsmuir Bridge would become an elevated greenway, connecting Eastside residents to the Downtown. Georgia would then continue through a dense mixed use community, reconstructing historic Hogan's Alley, and then connect through to Malkin Avenue. The group also proposed to daylight a buried creek that could tie together parks and open space with stormwater management and urban landscape. The community along Malkin Avenue would be a new kind of mixed use that emphasized industrial uses and flexible spaces.

GROUP



L Stacy Passmore *planning*

Bronwyn Jarvis *planning*

Micole Wu *landscape architecture*

Adam Hyslop *planning*

Edward Wu *transportation engineering*

CONTEXT

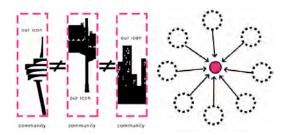


- 1 connectivity
- 2 streets as public realm
- 3 putting open space first
- 4 innovative mixed use typologies
- 5 livable density

DESIGN GUIDELINES







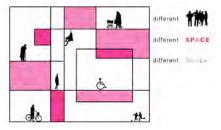
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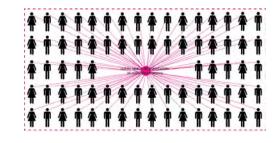
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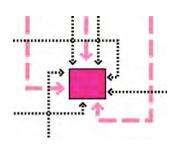
5



3



6



1 Community identity

strengthen distinct neighbourhood character of each district, centred around civic nodes

2 Local resilience

maintain, intensify and celebrate industrial role

3 Complete communities

enhance the level of diversity of services and amenities for area residents and workers

4 Ecosystem thinking

green industrial areas in a safe and economical way

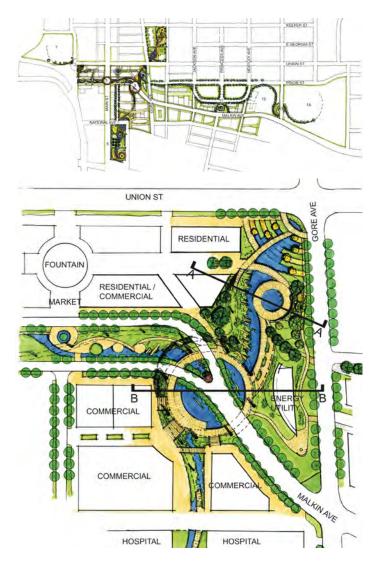
5 Social equity

ensure growing community continues to be supportive, diverse, inclusive and politically active

6 Healthy systems

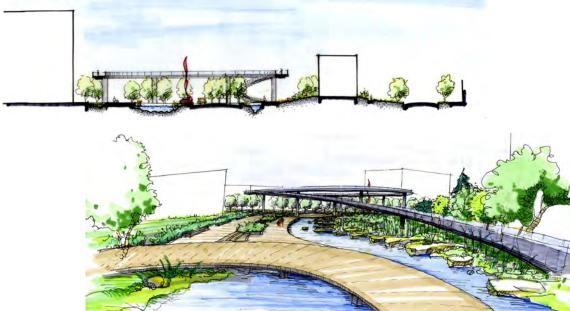
nurture healthy human and natural systems

OPEN SPACE



STRATEGIES

- apply key patterns to the plan to reinforce the open space system of the Malkin area
- highlight water movement with water features throughout
- use pedestrian bridges to create safe and exciting circulation modes
- offer plazas in commercial and high density areas for public use



TRANSPORT



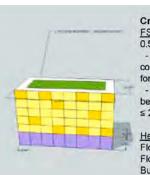




RETHINKING THE VIADUCT

The Dunsmuir Viaduct currently carries westbound traffic to downtown Vancouver. It is a vital gateway to downtown Vancouver. As Vancouver strives to become a greener city, sustainable transportation modes other than driving should be encouraged. The Dunsmuir Viaduct can be turned into a Green Corridor that accommodates pedestrian, bicycle and tram only. With the Viaduct acting as a superstructure, a sub-structure can be built under and around it tapering to provide a multilevel group of high density buildings and corridors.

BUILDING TYPOLOGIES



Creative Apartments

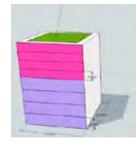
FSR 0.5-1- light ind. (art creation) - creation space along creek corridor should be equipped for visitors and retail

- ≤ 0.5 of this category can be live/work space ≤ 2.5 - residential

Height Restrictions

Floor 1 - 5m±1 Floors ≥ 2 - 3-4m Building - ≤ 21.4

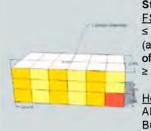




Industrial

FSR ≥ 2 - Heavy Industrial ≤ 4 - Heavy or light industrial, retail, office, civic or non-profit

Height Restrictions
All Floors 7m±3m
Building - ≤ 31m



Stacked Townhomes FSR

≤ 0.5 - light industrial (art creation), retail, office, civic, non-profit ≥ 2 - residential

Height Restrictions
All Floors - 3-4m
Building - ≤ 14m





TYPOLOGIES AND TENURES

These typologies prescribe heights and mix of uses, with various possible inclusions of affordable housing marked in darker yellow. Most of the districts in the map below propose a similar typology within each district. The work and residential district and a greenfield development, provides more creative opportunities for meeting its FSR requirements, which are explored later.

While separating income groups may create less conflict within buildings and allow a full expression of that groups lifestyle, it can also lead to a disrespect and ignorance of others in the community and conflict on a community scale.

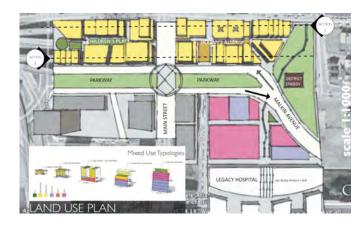
When low, moderate and high income households truly mix

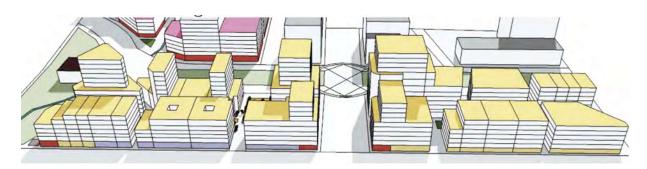
in a building they can learn from each others experience and support each other.

MAIN AND MALKIN

OVERVIEW

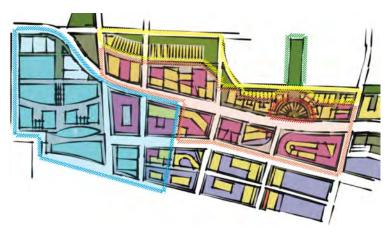
The community at Malkin and Main will be The vision for this neighborhood is very resilient through its close association centred around local production, with the existing Vancouver context. Proximity provision of ample artist and light to the new Hospital makes district energy industrial uses, along with ground cogeneration viable, while heath related floor access for sales and delivery. services and public open space amenities This combined with affordable such as parks and green roofs enhance the and market housing will make this lives of community residents and workers. neighborhood vibrant and diverse.







MALKIN CENTRE





OVERVIEW

Malkin Centre will become a new sustainable mixed-use hub at the convergence of industrial, institutional and residential neighbourhoods. The design will reveal the sites historic shoreline setting on the False Creek Inlet and reflect the areas more recent industrial heritage.

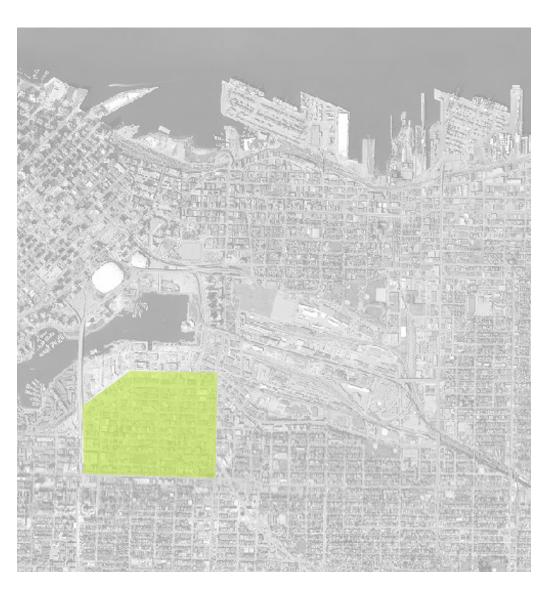


DESIGN OBJECTIVES

- develop a complete, compact mixed use community with a focus on sustainable, high-intensity industry and production
- cultivate a distinct sense of place for a new precinct centered around Malkin and Thornton
- improve community resilience through flexible built form and open spaces

- DESIGN GUIDELINES
- OPEN SPACE
- TRANSPORT
- BUILDING TYPOLOGIES

MOUNT PLEASANT



The Mount Pleasant design process began with a review of the two precedent cities of Portland and Barcelona, where the group adopted urban design ideas such as active public realm, efficient multi-modal transportation networks and the promotion of civic engagement through amenities. In Module 2-4 the group's efforts were focused on the Mount Pleasant Industrial District, bounded by 2nd Ave to the north, Broadway to the south, Main St to the east and Cambie Street to the west. This district possesses a swath of opportunities as it is located at the crossroads of variety of neighbouring land uses from commercial, retail to waterfront amenities. It is also an area that is well serviced by transit and road infrastructure. Our proposal for the Mount Pleasant industrial district includes intensification of the existing industrial functions while adding a mix of residential and retail to promote a vibrant streetscape and create a dense, multi-use neighbourhood. Our vision can be manifested through i) introducing new building typologies that will serve commercial, office, and industrial uses ii) connecting the neighbourhood with transit and pedestrian routes featuring an alternating pedestrian and heavy vehicle movement street grid and iii) promoting a strong public realm by focusing high street activity on Manitoba street - which effectively links Broadway, Jonathon Rogers Park and the False Creek waterfront.

GROUP



Anjali Varghese *planning*

Sarah Rankin *landscape architecture*

Jack Tse planning

Marlaina Rhymer *transportation engineering*

Alicia Medina architecture [not pictured]

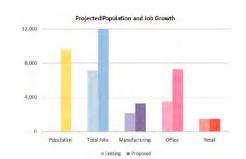
CONTEXT

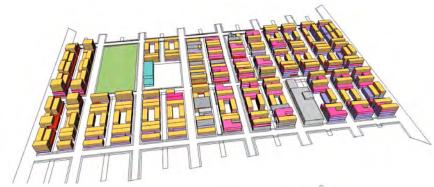


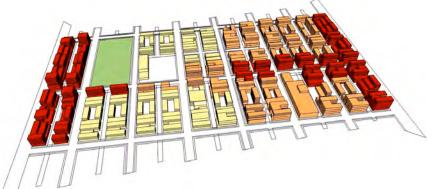
- 1 connectivity
- 2 streets as public realm
- 3 putting open space first
- 4 innovative mixed-use typologies
- 5 closing the loop

DESIGN GUIDELINES









- 1 In-block open space permeable semi-private space for amenity and activity
- 2 Mixed-use over industrial retain importance of industrial role while making neighbourhood more livable
- 3 Dedicated throroughfares
 5 m wide dedicated right-of-way, public access permitted for pedestrian permeability
- Green street frontage
 industrial uses with high aperture for street animation, openings
 allowed for public friendly activity. mid-block residential with
 3m setback from street and lower street wall to maintain street
 amenity
- Service street frontage
 industry with high aperture and street animation as well as
 openings for business related uses. mid-block residential in these
 zones with limited setback to maximize interior open space
- Green amenities
 space dedicated at block scale for green amenities, ie. accessible
 green roofs, rainwater harvesting, collection of organic waste,
 sheltered bike parking facilities, etc.

OPEN SPACE

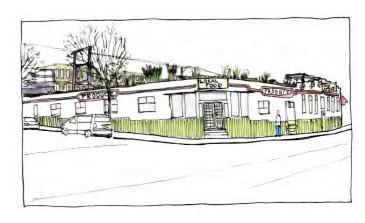


ROOFTOPS AND COURTYARDS

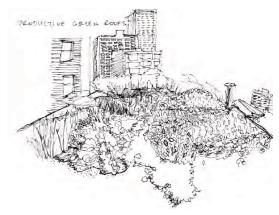
- brown roofs for biodiversity
- rooftops and courtyards for play
- rooftops for urban agriculture and local food production

OPEN SPACE

- new green lane typologies
- neighbourhood pocket parks used to complement existing open space in area and at False Creek
- Jonathan Rogers Park add play opportunities, comfort (seating, food, drinks, shade), integrate uses, increase permeability and improve aesthetics







TRANSPORT





Service Street



5th avenue



Green Street



Manitoba Street

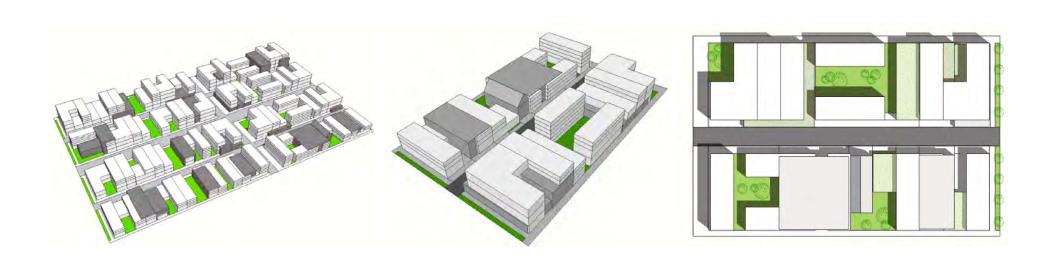
GUIDELINES

- protect the neighbourhood by minimizing through vehicle traffic
- reduce motor vehicle travel speeds to alleviate noise and air pollution, and allow for a safe and pleasant pedestrian and cyclist environment
- use the entire right-of-way in a more sustainable way, including stormwater man agement strategies
- allow motor vehicle movements throughout for wayfinding to local businesses
- allow some on-street parking as convenience to customers, services and visitors for economic development. Most access to parking, however, should be under ground via the lanes.
- maintain truck access, as this is an important part of industry
- encourage all road users (especially residents and local workers) to take advan tage of the walkability, proximity to transit, and pleasant environment by choosing sustainable modes of transportation.
- create a pleasant and comfortable pedestrian streetscape with street furniture, tree canopies, and lighting.
- include marked or divided bikeways whenever possible, as they are superior in both safety and operations to lanes shared with motor vehicles

BUILDING TYPOLOGIES







- DESIGN GUIDELINES
- DYNAMIC STREETS
- LANDSCAPE
- BUILDING TYPOLOGIES
- ZONING

CLARK DRIVE



The corner of Clark Drive and 6th avenue represents an important story of the working class city - the great confluence of industrial activity set against the beauty and rawness of the escarpment. The proposals goal is to celebrate and support the existing character by enhancing connections at all levels - modal, ecological, cultural, social and economic. These steps must be taken in order to create a livable, viable, resilient community that is grounded in industrial productivity.

This will be achieved by retaining the escarpment edge as public amenity, consolidating and intensifying industrial activity along Clark Drive and 6th Avenue, and providing an extensive green network throughout the industrial area. The open space network will create softer edges in this urban/industrial environment, enliven academic and institutional connection between VCC-Clark, Great Northern Way, local elementary schools, and an ecology centre at the proposed Transit Village. The proposal sees the creation of a complete and livable community in two parts; the intensified escarpment edge as a flexible use space with industrial, residential and public amenity functions, and the Transit Village at the valley floor as a hub for entertainment, cultural and ecological sites, student housing and institutional activities and recreation.

GROUP



Zhiwei Lu *landscape architecture*

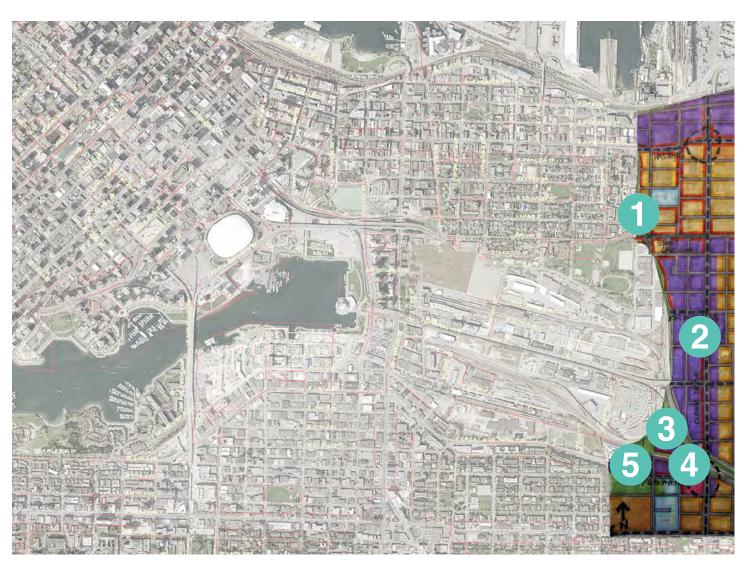
Stephanie Brown *landscape architecture*

Sara Morgan *architecture*

Paris Marshall Smith *planning*

Liliana Quintero *transportation engineering*

CONTEXT



- 1 putting open space first
- 2 connectivity
- 3 streets as public realm
- 4 innovative mixed use typologies
- 5 vibrant economy

DESIGN GUIDELINES



- Open spaces

 open space network derived from the natural

 context and at the scale of urban experience
- 2 Livability

 focus on mixed use between 5-10 minute walking
 access points
- 3 Reinvestment of resources investing profits from resource extraction into local infrastructurey
- 4 Identity celebrate the distinct features of this pace through visual language. Preserve and incorporate historic buildings and other cultural artifacts
- Micro + macro

 achieve a zero carbon neighbourhood by

 minimizing the effect of interventions on

 microclimate while expanding habitat and

 ecosystem functions
- 6 Governance
 weave into the city physical space for
 neighbourhood level democracy and activism

- Adaptable + resilient

 establish spaces with flexible uses and allow for
 incremental change
- 8 Mix it up experiment with atypical mixed use typologies
- 9 Mystery + surprise innovative use of nooks and paths to invoke a sense of playfulness and intimacy
- Supporting rural find opportunities to develop institutional support of rural communities
- Circulation
 recalibrating modal share and encouraging
 alternative transport
- Multi-ensory experience creating informal and formal opportunities for sensory stimulation through music, the arts and food

TRANSPORT











LANDSCAPE

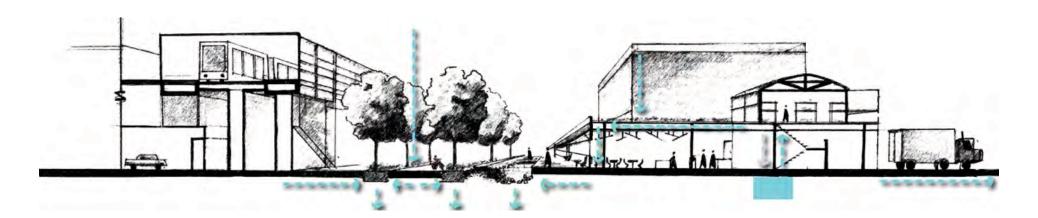






GOALS

- ecological enhancement
- soil rehab, water treatment, habitat, black water treatment
- green infrastructure
- storm water management, constructed wetlands, grey water, greening the matrix
- food security
- urban agriculture for education and local communities



BUILDING TYPOLOGIES





GOALS

- enhance industry
- provide access to industrial properties at escarpment summit and base to increase usability of full industrial property
- protect panoramic views
- mandate 60 degree angle cut within build for envelope to protect Clark Drive views at green intersections
- increase livability
- link pedestrian networks along escarpment, increase horizontal and vertical density, provide open space networks linked to community amenities

ZONING



TOTAL AREA: 44.46 ACRES

575 RESIDENTIAL SPACES

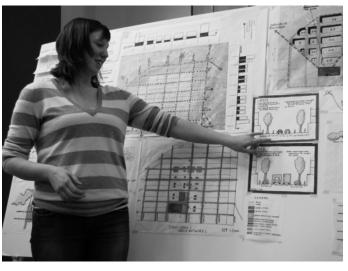
LAND USE TYPOLOGIES

- residential and artist studios
 4-5 storey small stacked unites that rise above the flats, creating a vantage point as well as a distinct architectural contribution to the area. Live-work artist studios that blend production into the public realm
- industrial row houses
 new typology that allows for 2 storey industrial with 1 storey
 residential one top. Each unit is individually owned and can
 accommodate a variety of manufacturing and professional
 services (automotive, garment, food, print, etc.). Each unit
 includes roof top gardens.
- mixed-use
- retail and community amenity
- large scale industry food storage, auto manufacturing, hi-tech industry tucked into the escarpment under retail and residential development of 6-storey towers and 2 storey retail at Clark Drive
- retail, professional services + student housing
- family housing

METRO CORE FRAMEWORK











OPEN SPACE



TRANSPORTATION



major route

street car

passenger rail

skytrain route

skytrain station

LAND USE



- residential
- commercial
- office
- industrial
- institutional
- open space

THE RESULT

A new direction for the MetroCore...



IN THE STUDIO...











IN THE STUDIO...

Larry Beasley distinguished practice professor



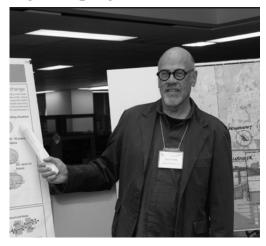
Joyce Drohan *adjunct professor*



Larry Beasley is the retired Director of Planning for the City of Vancouver. He is now the Distinguished Practice Professor of Planning at the University of British Columbia and the founding principal of Beasley and Associates, an international planning consultancy. He is also vice president for planning of a major Canadian development company, Aquilini Development. Over thirty years of civic service, Mr. Beasley achieved land use and transportation plans along with careful development management that have dramatically reshaped Vancouvers inner city. He also led the revitalization of neighbourhoods, a strong heritage preservation program, the City's urban design studio and a successful civic fundraising initiative. For the last thirteen years of his civic service, he was a principal decision maker for Vancouvers development approvals. He now teaches and advises the private sector and governments around the world. He chairs the National Advisory Committee on Planning, Design and Realty of Ottawa's National Capital Commission; he is the Chief Advisor on Urban Design for the City of Dallas, Texas; and he is the Special Advisor on City Planning to the government of Abu Dhabi in the United Arab Emirates. Mr. Beasley has studied architecture and has degrees in geography and political science (B.A.) and planning (M.A.). He has also been awarded an Honorary Doctorate Degree (Hon. L.L.D.) from Simon Fraser University, one of his alma maters. He is a Fellow of the Canadian Institute of Planners, an Honorary Member of the Canadian Society of Landscape Architects and has been recognized as an Advocate for Architecture by the Royal Architectural Institute of Canada. In 2007, he received the Kevin Lynch Prize from the Massachusetts Institute of Technology, the most prestigious award in American planning. Mr. Beasley is a Member of the Order of Canada, the nation's highest honour for lifetime achievement.

Joyce Drohan is an architect and urbanist with extensive experience in the design of public sector projects and sustainable communities. Most of her projects have begun with a master plan from which designs for specific building projects have been developed. Richmond City Hall is an example where, as project architect for Hotson Bakker/KPMB Associated Architects, she delivered a civic mastrer plan with the new building as its centrepiece. This has given her a unique perspective, bringing to the envisioning of innovative communities the specific realities of building design and delivery. Joyce was a key member of the design teams for Vancouver's flagship sustainable communities, South East False Creek (including the 2010 Olympic Village) and East Fraserlands, working on the Official Development Plans for both of these complete communities of about 14,000 people. She subsequently carried out the Phase 1 Rezoning for East Fraserlands - the largest in Vancouver's history.

Frank Ducote *adjunct professor*



Scot Hein adjunct professor



Frank Ducote is the Principal of Frank Ducote Urban Design. Resuming private practice after 20 years at the municipal level, Frank consults on several planning and urban design studies in the Lower Mainland and elsewhere in Canada. He is currently the prime consultant to the City of Coquitlam, along with HB Lanarc, Urban Systems, Aplin & Martin and Allan Jacobs for the Great Street Design Guidelines and other urban design projects. An expert in conducting design charrettes and facilitating design workshops, Frank is currently involved in re-visioning and master planning initiatives efforts for a wide range of public and private sector clients in Canada, the United States and India. At the municipal level he seeks to foster a meaningful link between high-level policy, public participation and what ultimately happens on the ground, through private development. He continues to teach urban design courses at Simon Fraser University's downtown campus and the School of Community and Regional Planning at UBC. His professional affiliations include memberships in the Canadian Institute of Planning, the National Charrette Institute, the Congress for the New Urbanism, the Vancouver Urban Design Forum, and is a former member of the Vancouver City Planning Commission. He is a Registered Architect in the State of California. With Susan Taylor, Frank co-manages the Blood Star Gallery on South Pender Island. His work can be seen at the website www.bloodstargallery.com.

Scot Hein is the City of Vancouver's Senior Urban Designer. His current work is focused in the downtown core on such initiatives as Woodward's, Southeast False Creek/Olympic Village, a New Housing Plan for Chinatown, the revitalization of Gastown/Victory Square/Hastings Corridor and related public realm opportunities such as the Carrall Street Greenway/Pigeon Park, Downtown Historic Trail, CPR ROW and the Silk Road. He has been with the COV for 12 years acting as both an urban designer and development planner on major projects. Prior to joining the COV, he was in private practice where he specialized in research and development, health care, resorts and transit related developments. He is an associate architect with the AIBC and is also a Registered Architect in the State of Washington. He holds degrees in Environmental Design and Architecture, as well as a minor in Economics Studies. He has also established environmental awareness/built environment education programmes in Canada and the United States and has served as Canada's representative for this work.

IN THE STUDIO...

Elsa Snyder teaching assistant



This document was compiled from students work by Elsa Snyder, a graduate of the University of British Columbia's Environmental Design programme. Elsa acted as a teaching assitant for the MetroCore studio during the fall semester of 2009. Along with helping out in the studio Elsa aided in the graphic and organizational tasks of compiling an overview of the student's work for their final presentation in December as well as other graphic material for the course and presentations. She is currently studying for her Masters of Architecture at the Delft University of Technology in The Netherlands.