Seven (7) Points for EcoMetropolitanism

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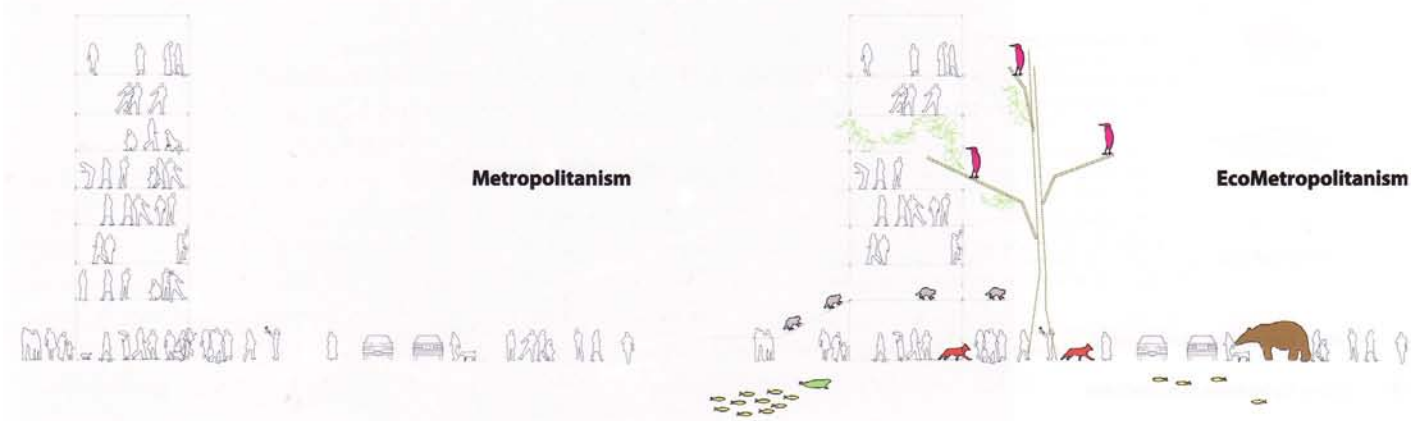
Nowhere does high density urbanism exist in such close proximity to nature as in Vancouver. Rapidly growing and unfettered by history, the city provides a glimpse of a potential new form of twenty-first century urbanism.

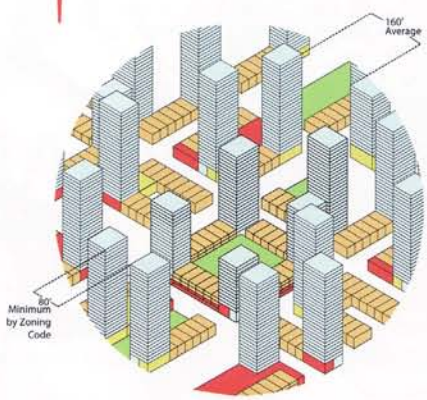
Incorporated in 1886, Vancouver is the youngest of North America's large cities. Its population roughly doubled from 1.2 million in 1981 to 2.2 million in 2006 and is predicted to surpass 3 million by 2020.[1] The collateral effect of this growth is a density of 42,000 people/sq. mile in the core, placing it second only to Manhattan's 65,000 people/sq. mile among Canadian and American cities. This density is all the more remarkable in relation to other relatively recently established cities on the continent, such as Houston (inc. 1837), with 3,300 people/sq. mile, and Denver (inc. 1861), with 3,600 people/sq. mile. Vancouver is an anomaly in a continent where the age of a city is typically directly correlated density: the younger the city, the less dense. This unlikely condition is the product of a fortuitous alignment of local planning initiatives with global real estate development and migration trends. The city's 1991 Central Area Plan, designed to encourage the residential densification of downtown, rapidly became a reality when it inadvertently coincided with an influx of immigrants from Hong Kong.

Vancouverism, a term coined by planners and architects in the late 1990s,[2] has come to describe five basic principles for the city center: high density housing; provision of views; a large amount of green and recreation space; generous spacing between buildings; and ample civic amenities such as community centers and public art. The essential concepts underlying Vancouverism are density and livability. In the opening lines of *Dream City: Vancouver and the Global Imagination*, Lance Berelowitz writes, "Vancouver has emerged as the poster child of urbanism in North America";[3] some critics have gone so far as to claim that Vancouverism has replaced Manhattanism as the apotheosis of contemporary city building.[4]

The formal specificity of Vancouverism is defined by the dominance of the podium tower, the proliferation of variously scaled green spaces, and an emphasis on view corridors. The podium tower is a typology that places one to four residential point towers on top of a podium base that generally includes town homes, commercial space, and amenity programs. This configuration ensures a significant spacing between towers, thereby mitigating crowding and affording views. Zoning guidelines enhance these effects by limiting tower floor plates to 6000 square feet for shorter towers and 4500 square feet for taller towers. The city's green spaces result from both small scale interventions and large scale planning: the aggregation of individual green softscapes creates a patchwork of recreation spaces in the city; the long sea wall encircling Vancouver's central core includes a multi-lane pathway for pedestrians, joggers, cyclists, and skaters. At the most macro scale, the planning department defined twenty-seven 'view cones' that preserve what are determined to be significant vistas. These geometrically defined air spaces start from a specific point and project in plan and section toward the mountains that rise on the city's North Shore, aesthetically interlocking the city with the surrounding wilderness. The cones configure how the city relates to its exterior by determining the form of its interior.

Vancouverism can also be understood as a strategy born of the city's unparalleled natural context: Metropolitan Vancouver extends into mountains to the north, an area covered with vast expanses of temperate rain forest beginning less than five miles from the central core. These forests contain large areas of old-growth trees and substantial black bear and deer populations. Stanley Park, North America's third largest city-owned park, sits directly adjacent to the central core and supports a diverse wildlife population that includes coyotes, bald eagles, raccoons, and Great Blue Herons. (The heron population, for instance, is considered to be one of the world's largest and most successful urban wildlife conditions.) The parks department monitors fourteen eagle nests as part of its effort to support urban eagle habitats. The waters surrounding the city are populated by an array of marine life, including millions of salmon that annually migrate to


Metropolitanism
EcoMetropolitanism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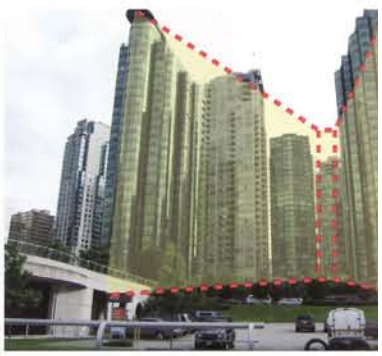
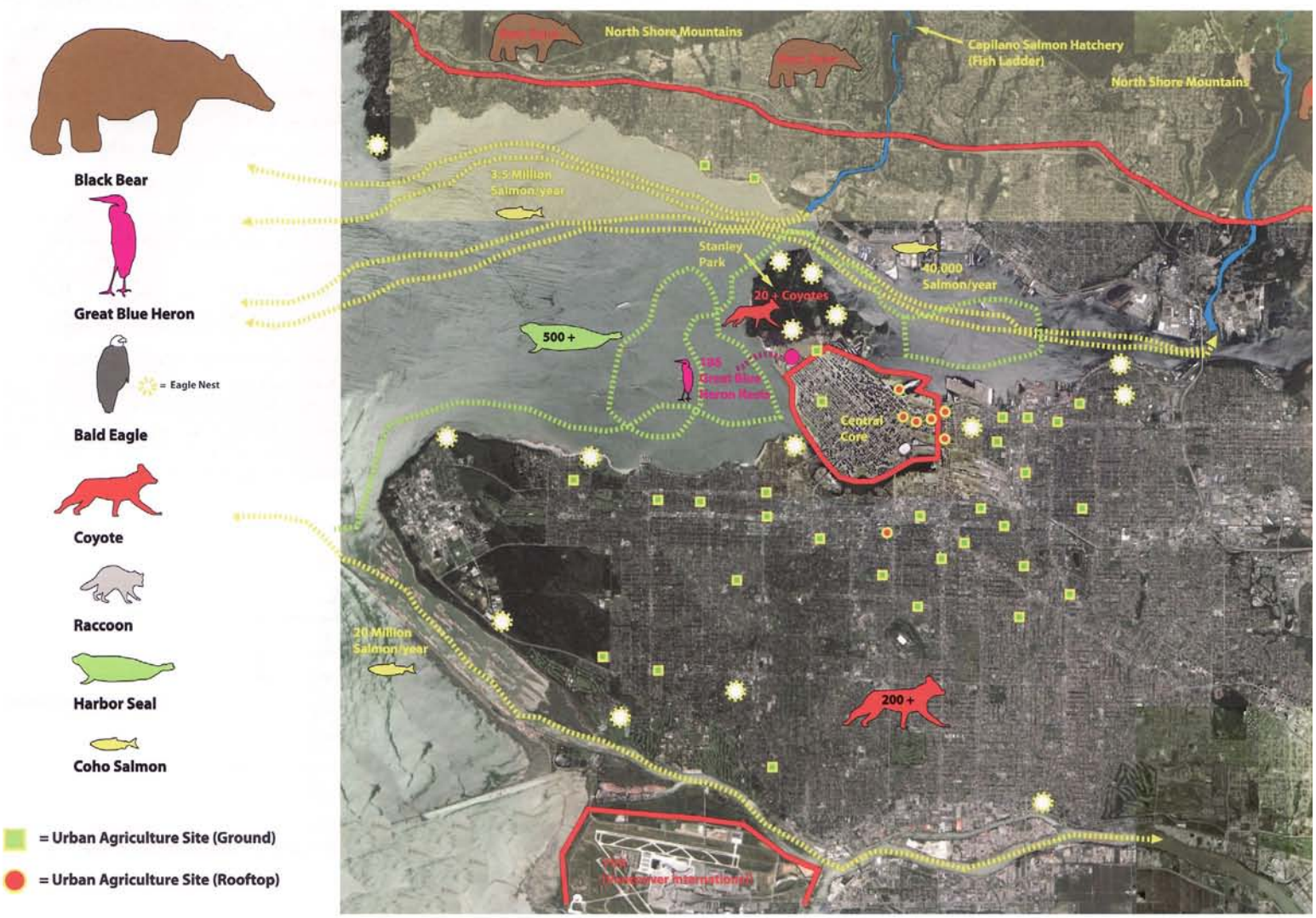



Black Bear
Great Blue Heron
= Eagle Nest
Bald Eagle
Coyote
Raccoon
Harbor Seal
Coho Salmon
= Urban Agriculture Site (Ground)
= Urban Agriculture Site (Rooftop)
North Shore Mountains
Capilano Salmon Hatchery
(Fish Ladder)
North Shore Mountains
3.5 Million
Salmon/year
Stanley
Park
20 + Coyotes
40,000
Salmon/year
500 +
Central
Core
20 Million
Salmon/year
200 +

spawning grounds in the metropolis' rivers. An estimated population of over 200 coyotes roams throughout the city. Collectively, these animals extend their reach directly into the urban environment as part of their routine feeding and habitation patterns.

Vancouverism's tenet of density is rationalized in part as a technique of land preservation and reduced resource consumption; view preservation connects city dwellers to the surrounding wilderness; the proliferation of softscapes bring exterior ecologies into the city core. But these are, in large part, passive and objectifying strategies that reveal Vancouverism's failure to fully capitalize on its natural environment. At the edge of large scale North American settlement, Vancouver's dramatic local context of forested mountains and ocean inlets and bays places it in direct contact with relatively pristine natural ecologies. The dense, compact, and programmatically varied central core is in fact juxtaposed and intertwined with active and vibrant ecological systems. This interrelationship is an enticing provocation to re-think our understanding of urbanism.

With Vancouver and Vancouverism as points of departure, how can landscape architects, architects, and planners reinvigorate the act of city-making by generating new possibilities for hybrid inhabitations that produce a diversity of desired effects? How can the making of buildings and cities move beyond a passive relationship to ecology and actively engage it as an exciting terrain upon which to orchestrate and construct new possibilities?

What is EcoMet?

If Vancouverism is the model of density and diversity within a livable framework, EcoMet(ropolitanism) is an accelerated version. EcoMet increases density and livability while amplifying and exploiting the relationship to the natural environment by synthesizing the production of metropolitan culture with that of ecologically designed architectural environments. From these tenets, the EcoMetropolis emerges: the hyper dense, super diverse, and radically optimized city.

In the production of metropolitan culture EcoMet borrows from *Delirious New York* and the work of OMA in that it celebrates a Culture of Congestion[5] in which design decisions are made to "generate density, exploit proximity, provoke tension, maximize friction, organize in-betweens, promote filtering, sponsor identity, and stimulate blurring."[6] Where Koolhaas' metropolitanism is focused on human experience, EcoMet brings an expanded population of non-human organisms into the mix; proximities and tensions are developed between programs specific to this expanded definition of population. The needs of plants and animals (access, nourishment, domicile, light, precipitation, etc.) within the urban environment are considered equal to human considerations such as entertainment, recreation, and economics. In these terms EcoMet is the heightened programmatic diversification and densification of the city in which mutually beneficial adjacencies are pursued. For instance, a podium roofscape might be designed to accommodate the specific nesting needs of an at-risk bird species, thus providing important habitat opportunities while offering a dynamic programmatic adjacency to the towers' human residents. By intermingling ecological systems within the urban fabric, EcoMet generates a more intense urbanism that produces experiences for an expanded range of inhabitants simultaneous to more traditional goals of sustainability like habitat preservation and biodiversity. This optimized city is made possible because the notion of density is extended into ecological terms and the value assigned to ecology is extended into urban terms.

NOTES

1. Urban Futures Institute, *The Context For Change*, Urban Futures Institute Report 63 (February, 2005) 28. Available at: http://www.urbanfutures.com/research.html.
2. Trevor Boddy, interview by Julie Bogdanowicz, in *Vancouverism in Vancouver*, dir. Julie Bogdanowicz and Robin Anderson, 2008. Pasadena: Architectural Film Festival.
3. Lance Berelowitz, Dream City: *Vancouver and the Global Imagination* (Vancouver: Douglas and McIntyre, 2005)1.
4. Trevor Boddy, "Vancouverism vs. Lower Manhattanism: Shaping the High Density City," *ArchNewsNow.com*, September 20, 2005, http://www.archnewsnow.com/features/Feature177.htm.
5. Rem Koolhaas, *Delirious New York* (New York: The Monacelli Press, 1994) 10, 125.
6. Rem Koolhaas, *SMLXL*, (New York: Monacelli Press, 1995), 692.

top: The Vancouver Planning Department identified twenty-seven view cones that must be preserved to protect what they deemed as significant views of the surrounding forrest. The five view cones indicated in the panoramic photograph are results of these visual set-asides.

facing page, center: Vancouverism has emerged from the concurrence of increased population and the implementation of new building codes that mandate light, air and views.

facing page, bottom left: Vancouver's location between water and mountains places the city in direct contact with the relatively pristine nature that surrounds it. As a result, the urban environment supports an extraordinary variety and quantity of non-human inhabitants.

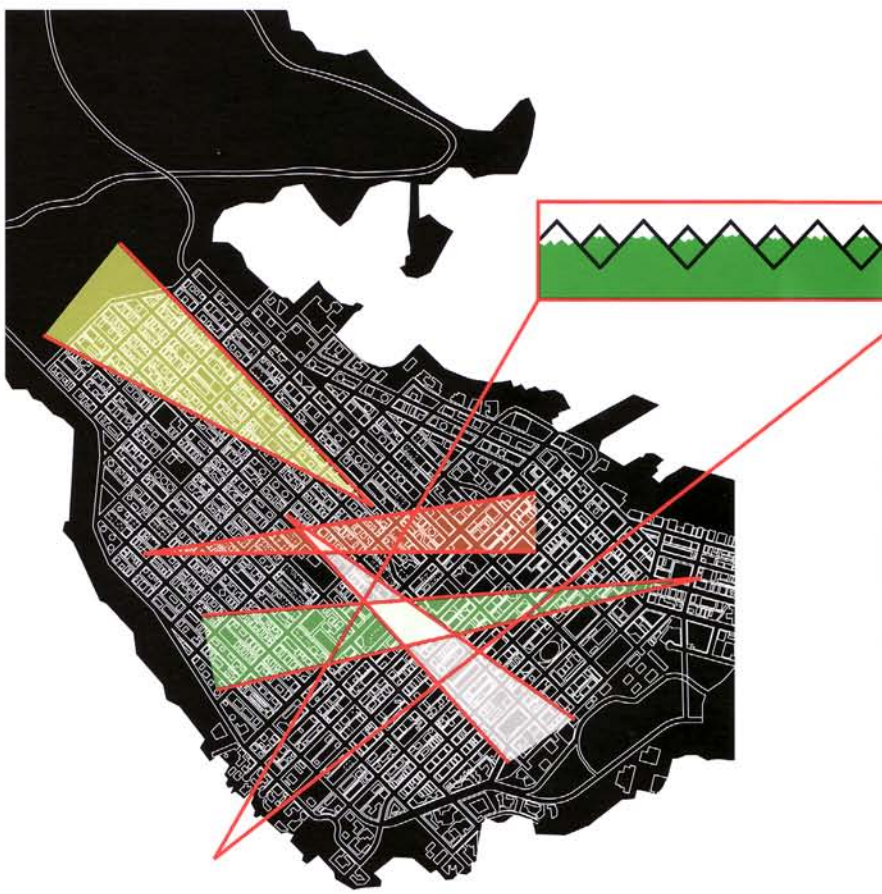
facing page, bottom right: The need to maintain view cones determines location and spacing of residential towers.

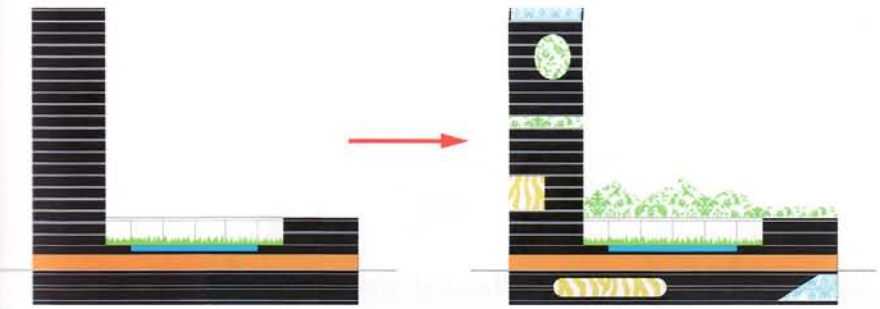
POINT 1 › Make ecoMAX

EcoMet first requires that we reconsider received definitions of density. While common measurements such as FAR and human population density remain necessary, they are insufficient. EcoMet, with its expanded reach and interests, requires indices that represent a broader spectrum of systems and inhabitants that include the quantification of plant and animal life. GPP, FPA, UFI, and WMPP reveal a more diverse and dense city by systematically measuring inhabitants that include humans, flora, and fauna. Correlations between discrete data sets—such as FPA, bird populations, and human density—reveal interrelationships between animal and human populations, enabling designers and planners to modulate factors to produce desired effects (increasing one population while keeping another constant, for example). A careful interplay between accounting and modulation can maximize ecological density, thus achieving ecoMax. So while New York City's current GPP is 0.3% and Vancouver's is 0.5%, via operations such as optimizing podium roofscapes as park space the EcoMetropolis could reach a GPP of 9%.

POINT 2 › Invert the View Cone

EcoMet extends Vancouver's view cone system by proposing four new types of view cones that start and end within the city at a new scale and orientation: Urban Habitat Cones, Urban Agriculture Cones, Density Release Cones, and Mixer Cones. Urban Habitat Cones and Urban Agriculture Cones visually interconnect particularly prominent zones of these programs with zones of more pure residential density. Density Release Cones function specifically to provide air space adjacent to a hyper dense node or edge; counterposing the very dense with the very open allows for even greater densities. Mixer Cones slice through the city strategically to reveal the diversity of its programs and inhabitants; reorienting the view cone so that the urban environment itself (and not only the mountains beyond the city) are valued serves to frame and register the city's diversity and foster density.



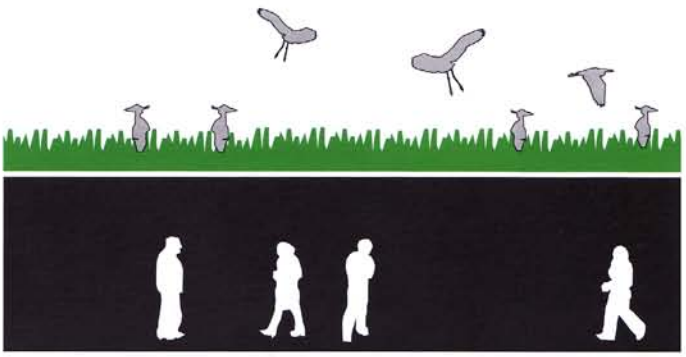


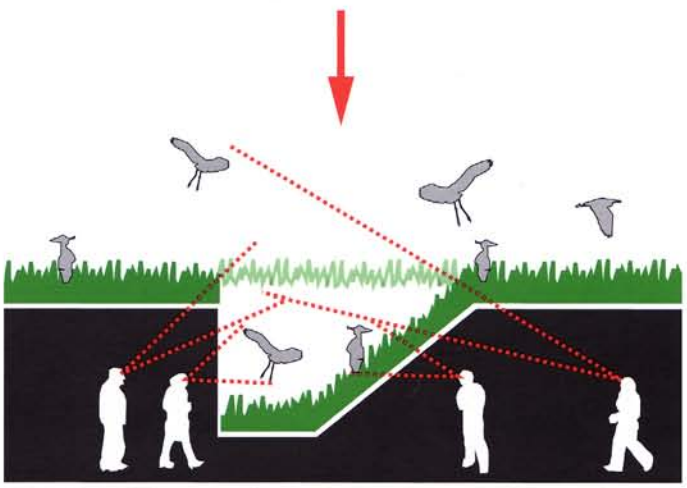
POINT 3 › Intensify Use

Optimizing EcoMet necessitates that every form and surface accommodate multiple functions incorporating agriculture, wildlife circulation corridors, and habitats throughout the city. The current manifestation of the Vancouver podium typology which most successfully approaches this condition (what is here termed the 'Intensive Block Podium') contains an internalized, elevated landscape which is simultaneously a circulation route to the townhouses that wrap the block's perimeter; a recreation and leisure space for residents; and an elevated, artificial ecology capable of supporting a range of plants and species. The Aquarius, an intensive block podium designed by James Cheng, includes a fish-stocked lake on the podium. The lake provides hunting opportunities for the city's birds of prey, producing the remarkable condition of fish taking refuge under overhangs adjacent to the tower's structural columns, next to residents entering the tower. EcoMet proliferates this and similar conditions through the Eco-Intensive Podium Block. This new typology more aggressively seeks opportunities along the surface, as well as inside the volume, of the podium tower by juxtaposing the performative demands of an increased array of species programs: wildlife corridors slice through commercial spaces at ground level; birds nest on floor thirteen next to the workout room; and agriculture extends between tower one and tower three to capture sunlight.

POINT 4 › Exploit Co-existence

The EcoMetropolis exploits the coexistence of a full biological spectrum. While certain aspects of new projects in Vancouver—such as the butterfly-friendly green roof at the expanded convention center—provide programmatic space for a broader population, they do not yet spatially and experientially exploit the potentials of these juxtapositions. MSD's design for Eclipse Awards' offices near Vancouver's waterfront includes a rooftop layer of plant life chosen specifically to act as a food source for native birds such as Steller's Jays. By cutting a wedge from the rectangular block, the feeding surface descends into adjacency with the workspace below. Birds are thereby juxtaposed with the building's human inhabitants in an enlivened urban choreography. EcoMet envisions a range of habitat scenarios such as the Fish Ladder Tower and The Harbor Seal Podium that all seek similar forms of tensions and heightened frictions within the city.

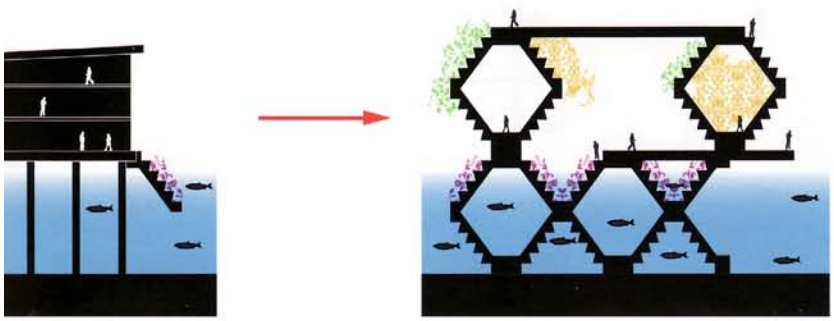


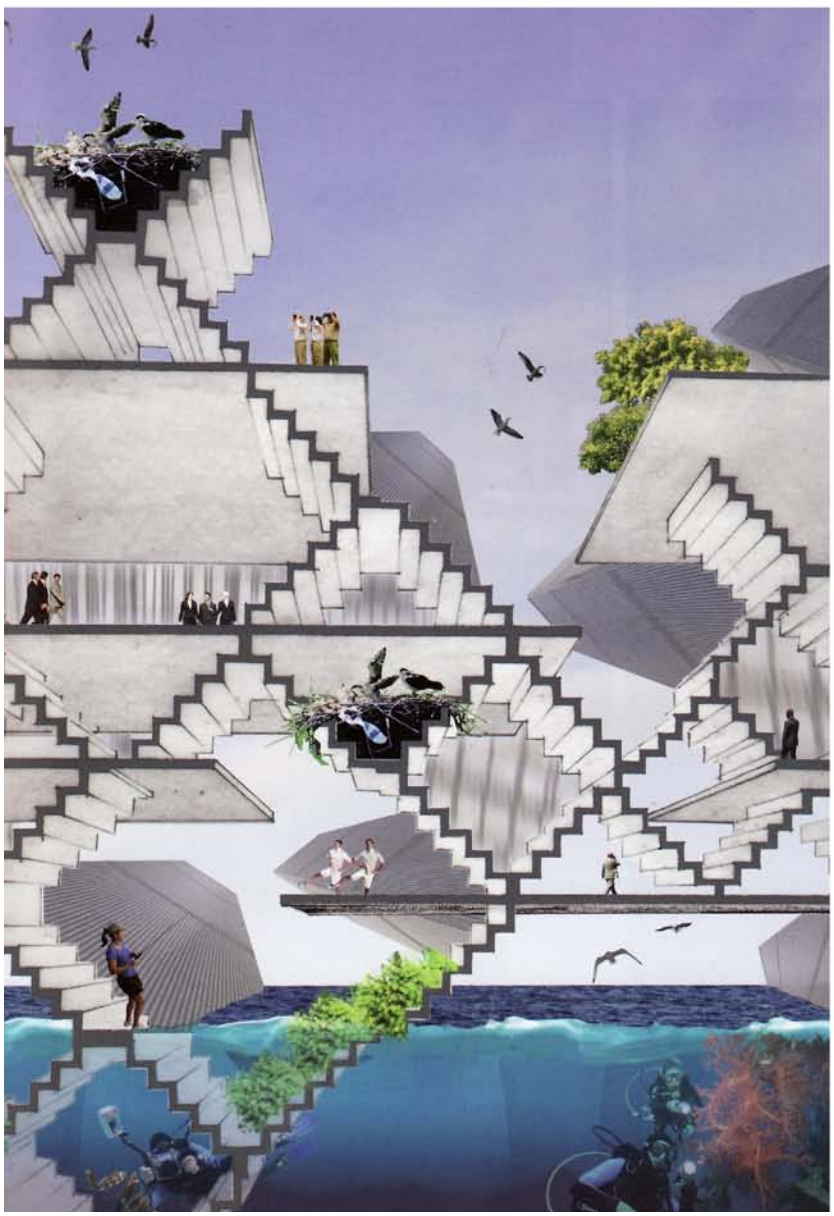


POINT 5 › Broaden Structure

EcoMet augments structure and infrastructure's extant functions of supporting humans by capitalizing on their potential to service the city's expanded population. Often a simple adjustment of existing configurations can transform a structure into a polyvalent component for multiple systems. The underwater piles supporting Vancouver's convention centre expansion are a case in point: the pile system was designed to simultaneously bear the weight of the building and support a bioengineered structure for an artificial fish habitat. The 'Habitat Skirt' consists of a series of pre-cast concrete frames that support concrete slats much like a stringer supporting stairs. A central trough runs along the length of each slat to act as an artificial tidal pool. The slats' rough surfaces are designed "to facilitate the effective initial colonization and subsequent long-term utilization of the bench habitat by a broad range of typical inter-tidal flora and fauna."* In its current application, the Habitat Skirt is relegated to the periphery of the convention center, but what if it proliferated and looked for opportunities elsewhere? Bioengineered structures can include programmatic roles for what are otherwise solely building structures, thus adding nesting locations for bald eagles and fish ladders for spawning salmon.

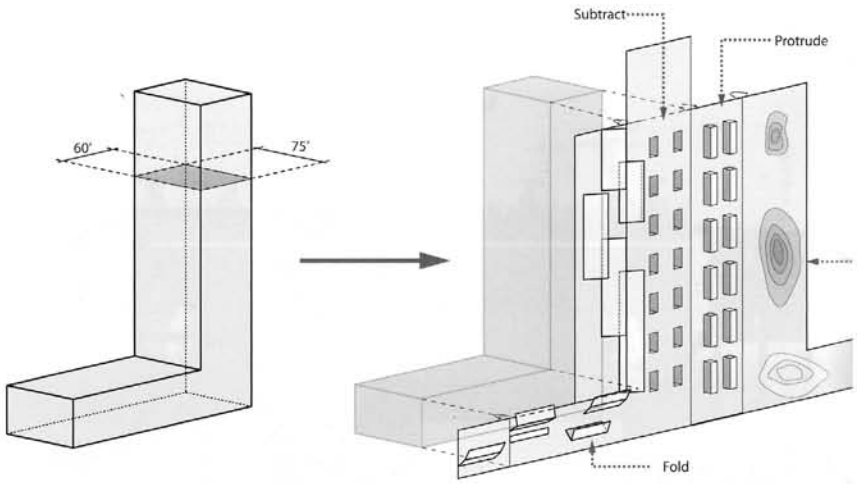
* Rick Hoos, telephone interview with Mari Fujita, February 21, 2008.

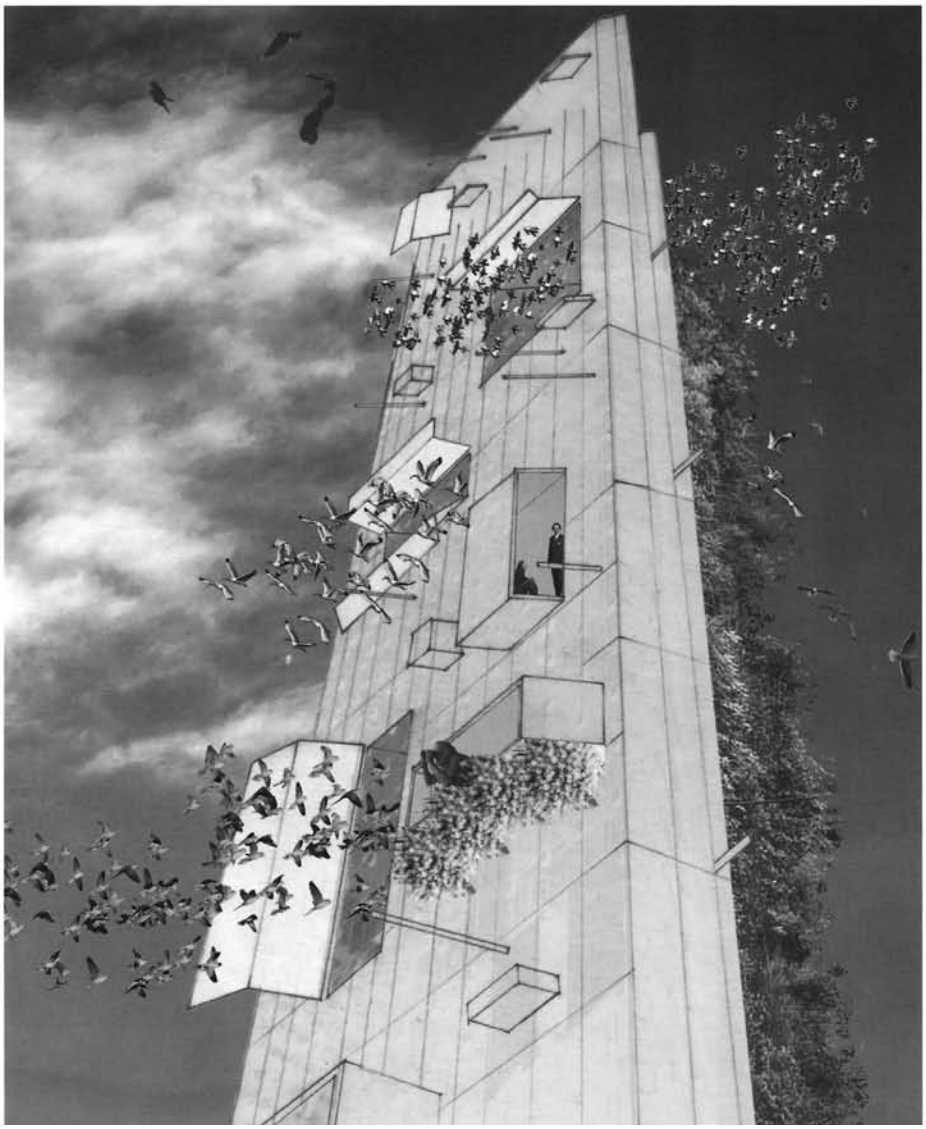


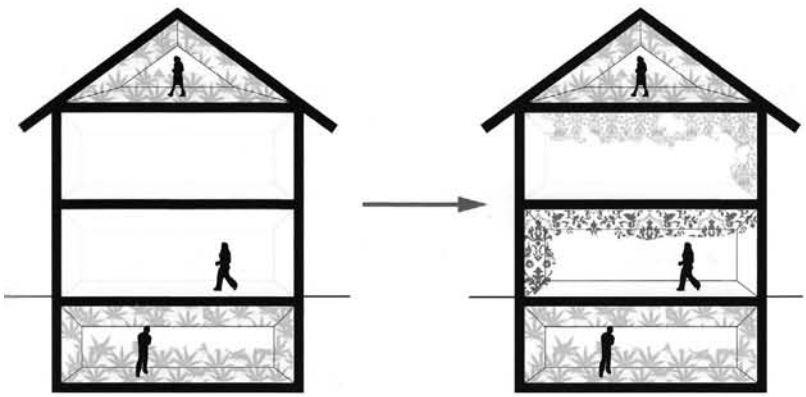


POINT 6 › Maximize Envelope

The thinness of Vancouver's residential towers comes from a mandate to minimize shadowing and maximize separation and views, but it also increases envelope-to-floor area ratio. The typical Vancouver podium tower floor plate is half the size of, for example, the Trump International Hotel and Tower at Columbus Circle. Vancouver's maximized envelope also maximizes the interface between the interior and exterior and therefore heightens interaction between what is the normative exterior domain of natural ecologies and the interior spaces of metropolitan culture. The inhabitants of the podium tower live within an expanded interface with the exterior space of plants and animals. In pursuing an accelerated maximization of envelope, EcoMet seeks to redeploy and rearticulate surface conditions to position a diversity of exterior spaces in proximity to, and in juxtaposition with, interior spaces: roof planes are folded down, curtain walls distorted inwards, and crevices subtracted to increase porosity. The use of energy conserving glazing technologies combined with the energy savings of day lighting can offset energy loss resulting from an expanded envelope.







POINT 7 › Ecologize the Interior

The boundary between interior and exterior marks the long contested division between the artificial and natural. While recent architecture and urbanism is especially inventive in questioning this division in terms of form, the underlying binary remains intact. Vancouver has unwittingly subverted this opposition by generating what can be described as interiorized urban agriculture on a massive scale: relatively lenient drug laws and strong foreign demand for marijuana have resulted in a covert domestic agricultural industry. The City of Vancouver estimates that there are thousands of these operations in Metro Vancouver, producing more than $5 billion in annual exports and making Vancouver arguably the most significant urban agricultural environment in the world. Basements, attics, and entire homes and apartments are equipped with hydroponic technology in which marijuana plants are grown in a nutrient solution with the aid of special lighting. EcoMet seeks the mainstreaming of these interior ecologies beyond the illicit drug trade to create productive environments in which living wallpapers are deployed for their graphic qualities as well as their ability to provide food: fresh tomatoes can be harvested from one's kitchen ceiling in an ever-changing environment of red, green, and purple organic pixels.