THE URBAN MORPHOLOGY of WEST COAST CITIES
a resource for the portland urban atlas

Portland Urban Architecture Research Lab

Jennifer Cestnik . M.ARCH Candidate
Advisor . Hajo Neis, Ph.D.
University of Oregon . pdx
This report is formatted for inclusion in the developing Portland Urban Atlas project under the direction of Dr. Hajo Neis. It is intended to be located after the chapters of different block morphologies within the city of Portland. Given a detailed analysis of the city, this chapter serves as a resource to compare Portland to other major west coast urban morphologies that may be more recognized by the reader. Using San Francisco, California, Seattle, Washington, and Vancouver, British Columbia as case studies, the existing conditions of Portland, Oregon can be better understood.
Using Portland as a Module for Analysis

Globally, urban morphologies are as diverse as the people who reside within their typologies. The development of cities within a similar graphic region presents the opportunity to address different design biases while celebrating their similarities.

Although Portland, Oregon’s block is the smallest module with a block size of two hundred by two hundred square feet, the sixty foot wide street width thought the city is much more typical between morphologies. This grid, that avoids a hierarchy, was used throughout the city in commercial, residential, and industrial areas. Over time, the block structure grew to include rectangular and irregular shapes; however the two hundred foot modular generally remains intact.

Using Portland as the control for urban design, three major Western United States cities are analyzed to address similarities and differences between their urban morphologies: San Francisco, Seattle, and Vancouver BC. The protocol for this study begins with each city’s historical development and geologic restraints surrounding their earliest layouts. In each case, the initial neighborhood suggests a scale at which they city expands.
West Coast Morphologies

**Vancouver, British Columbia**
Incorporation 1886  
Size 44.3 square miles  
City Population 578,041 people  
Urban Population 2,116,581 people  
Density 13,817 people / square mile

**Seattle, Washington**
Incorporation 1869  
Size 142.5 square miles  
City Population 594,210 people  
Urban Population 2,712,205 people  
Density 7,086 people / square mile

**Portland, Oregon**
Incorporation 1851  
Size 145.4 square miles  
City Population 575,930 people  
Urban Population 2,159,720 people  
Density 4,199 people / square mile

**San Francisco, California**
Incorporation 1850  
Size 231.92 square miles  
City Population 799,183 people  
Urban Population 4,203,898 people  
Density 17,113 people / square mile
Vancouver, British Columbia

Vancouver’s urban morphology originates at the edge of the Burrard Inlet in the eastside downtown neighborhood of Gastown. Originally named Granville, this early town site is bordered by Carral, Cambie, Hastings and Water streets, all of which remain intact today. As the city expanded, the overall block size varies based on the manipulation of the streets that follow the path of the inlet. However, the parcel module of 132 feet by 66 feet is consistent as well as the 66 foot width of the street.

J.C. Morgan Panoramic View Vancouver Drawn in 1898
Vancouver, British Columbia

Metro Vancouver

Downtown Vancouver
Downtown Vancouver Existing Morphology

Vancouver’s original center was bounded by today’s streets: Carral, Cambie, Hastings and Water, all of which remain intact today.
**Typical Portland Block and orientation of parcels compared to typical Vancouver Block modules**

- **Parcel Size:** 132 feet x 66 feet
- **Block Size:**
  - 528 feet x 284 feet
  - 284 feet x 376 feet
- **Streets:** 66 feet wide
- **Alley:** 20 feet wide

[Diagram showing the comparison of block sizes]
Walking Downtown Vancouver

A 10 minute walk through this predominately historical neighborhood suggests the original intentions of building typology in the city. Early construction of low rise buildings coupled with maintaining view corridors north results in the human scale and connection through low heights. (Much like what is seen with the surrounding “podium” concept of towers in the city. The short cross section of the block creates short pathways towards the water intersected by long avenues. This results in a hierarchy of streets that runs east to west.)

quarter mile radius of walkability with 10 minute walk highlighted
A Typical street experience. Flatiron type buildings are present in the neighborhood and date to 1889.

B One of the few modern buildings in the neighborhood, this site is an example of Vancouver’s failed attempt at redevelopment rather than urban restoration.

C The east edge of the neighborhood follows suite with a similar typology. Built in 1909 this block is the first instance of reinforced concrete and fireproof buildings in the city.

D Historic streetscape with public plaza spaces and features including a steam run clock.

E The state of Gastown after the 1886 fire. While the morphology remains the same, all of the buildings along this axis have been replaced with more fireproof structures.
Seattle, Washington

Seattle was initially settled at Alki in 1851, however the site was quickly abandoned due to poor conditions and residents moved to the current origin of the known city on the edge of Elliott Bay. Initially platted by two men, Arthur Denny to the north of Yesler Way and Doc Maynard to the south, the city’s grid intersects but does not align at this axis due to the separate development of each plat. The majority of early development was on Maynard’s land, however with the increase of residents during the Gold Rush lead to the spread of the grid to the north and east.
Downtown Seattle Existing Morphology

Two initial plats were laid out in Seattle: Arthur Denny to the north of Yesler Way and Doc Maynard to the south. Denny’s plat is bounded by today’s streets: Alaskan Way, Columbia Street, Second Street, and Yesler Way. Maynard’s plat is bounded by: Alaskan Way, Yesser Way, Occidental Avenue, and King Street. The city’s grid intersects but does not align at this axis due to the separate development of each plat.
Typical Portland Block and orientation of parcels compared to typical Seattle Block modules

- Parcel Size: 110 feet x 60 feet
- Block Size: 236 feet x 240 feet
- Streets: 66 feet wide
- Alley: 20 feet wide
Walking Downtown Seattle

Like Vancouver, this neighborhood remains a predominately historical district within the city, so early building typologies (even after the great fire) remain intact. Unlike other cities, the presence of a 20 foot wide alleyway bisecting the blocks creates a definite front and back to each plot. This results in a hierarchy of the street grid running from north to south, bisected by major arteries like Yesler.
A Pioneer Square, one of the first public spaces to gather, and the Pioneer Building in the Richardsonian Romanesque Architectural Style, the typical building typology for “slow burning construction” after the Great Fire of 1889

B Typical tree lined streets, pedestrian friendly and walkable

C An urban edge, where the historic neighborhood abuts the current Quest Field development and the train station is seen in the background

D Typical car-oriented street where layers of building typologies include historic, contemporary, and open space for surface parking lots. This road is on axis with early skyscrapers (Smith Tower in white) and more recent (Columbia tower in black)

E Smith Tower, the most prominent building in the neighborhood, seen under construction in 1913
While San Francisco was initially settled by missionaries and early explorers, the current urban morphology is based on the plan drawn by Jean-Jacques Vioget in 1839. Known as Yerba Buena, Vioget maintained the existing layout of land by settlers with stakes, and bounded by today’s streets: California, Grant, Montgomery, and Pacific. The Spanish vara was used as the unit of measurement (where one vara equals 33 inches). The subsequent plan for the city that grew to include the primary axis Market Street created a division in the morphology. Blocks to the north kept Vioget’s 50 vara lot size, and to the south blocks were laid out at 100 vara. Because of this scale, larger lots were not suitable for residential development and became the commercial and industrial region of the city.
Downtown San Francisco Existing Morphology

The historic plat of San Francisco (shown in grey) is bounded by today’s streets: California, Grant, Montgomery, and Pacific.
San Francisco, California

Typical Portland Block and orientation of parcels compared to typical San Francisco Block modules

- **Parcel Size:** 66 feet x 125 feet
- **Block Size:**
  - 400 feet x 250 feet (50 vara)
  - 900 feet x 500 feet (100 vara)
- **Streets:** 60 feet wide

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San Francisco Block Variation One

San Francisco Block Variation Two

San Francisco Block Variation Three

Comparative analysis of west coast cities
San Francisco, California

Walking Downtown San Francisco

A 10 minute walk through the neighborhood where Vioget’s plan has become the city’s Chinatown and Financial district suggests. Unlike Portland, the hierarchy of the street is more apparent due to the rectangular block size of 250 feet by 400 feet as well as the diagonal bisect of Columbus Street through a series of the blocks. The neighborhood has a mix of building typologies, including the iconic Transamerica Building.
A Typical street experience. Note the skyscraper design without building height setbacks creates a dark corridor to walk and drive down

B The bisection of Columbia Street, dated back to the plan of Yerba Buena, creates instances of flatiron building typologies on irregular block sizes

C The view corridor to the Transamerica Pyramid, the tallest building in the neighborhood, is oriented along a historic street wall. Lower building heights allow for more light and street trees are present for a more walkable neighborhood. The Sentinel Building, dated from 1906, in the foreground is one of the only buildings to survive the 1906 earthquake

D Portsmouth Square, a park for gathering, located on the site of the first public square in Yerba Buena

E San Francisco, dated 1881, looking west from the original downtown
Aerial Photo of Portland, Oregon: http://pdxmacs.com/gallery/bridgetown/aerial_of_PDXbridges?full=1

Historic San Francisco Photos: Library of Congress Call number DAG no. 1331


Pioneer Square Photos: "Scott Beale / Laughing Squid"


Transamerica Pyramid and Sentinel Building photos: "kristen&joe"
