SILENT ARCHITECTURE:
healing in an intergenerational living environment

Katie Nightingale

Fall 2013
Susanne Siepl-Coates

What is being designed?

Where is it being built?

Who is it for?

Design Proposal

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What is being designed?

To create an escape –
from the city, noise, clutter, weather – to focus on art.

Vision Statement

in•ter•gen•er•a•tion•al (*adj*): of, pertaining to, or for individuals in different generations or age categories: intergenerational housing.

This type of dwelling is one where people of all ages, whether or not they are related biologically, can live cohesively. Each resident has access to community space, and everyone has their own private space.

Generations United and the MetLife Foundation describe an intergenerational community in three parts. An intergenerational community:

•   "provides adequately for the safety, health, education and basic necessities of life for people of all ages."
•   "promotes programs, policies, and practices that increase cooperation, interaction, and exchange between people of different generations."
•   "enables all ages to share their talents and resources, and support each other in relationships that benefit both individuals and their community"

People in a place that exemplifies intergenerational living will resemble one big family. They will be a community of people with common interests who share their lives.

Intergenerational Living

Class Patterns:

- Circular Path within a unit or on each floor
- Daylight from Two Sides
- Adaptable Units
- Social Spaces at the Center
- Grouping Entrance Doors - Community at All Levels of Scale
- Universal Design
- Layers of Space - Buffer Zones
- Bringing the World into the Building
- Third Places
- Lingering Realms in the Circulation Spaces

A Pattern Language:

- Household Mix
- Housing Hill
- Old People Everywhere
- House for a Small Family
- House for a Couple
- House for One Person
- Activity Pockets
- Something Roughly in the Middle
- Common Areas at the Heart
- Farmhouse Kitchen

Patterns
for Intergenerational
Living

"The most powerful of healing places is in the brain and in the mind." Studies have shown that the mind and its functions are directly affected by the environment. Certain environmental stimuli, such as light and sound, affect the hormone levels in the brain. These chemicals drive reactions and can either help or hinder healing.

Silent Architecture is a term coined by architect and author Christopher Day. According to him, the foundation for tranquility lies in balance, simplicity, natural light, unity of color and materials, and timelessness. Silent Architecture evokes a sense of calm and peacefulness in those who experience it. These patterns, when used in the design of a space, can promote healing and well-being.
Other features of Silent Architecture can include scale, nature, form, an entrance transition, and windows on the street. Through the combination of all of these patterns, "architecture provides rest for the soul".

http://www.casaluisbarragan.org/

# Silent Architecture

1.   Light
- Natural light
- Light from two sides (1)
- Different spaces with different levels of natural light
- Colored light
- Natural light through not only windows (3)
- Needs texture to play on
- Windows
  - Unobstructed access to nature and light
  - Part of wall – no frame (2)
  - Varied mullion rhythm
  - Deep set
  - Placement and shape

http://www.orgone-design.com/blog/esherick-house-louis-kahn/
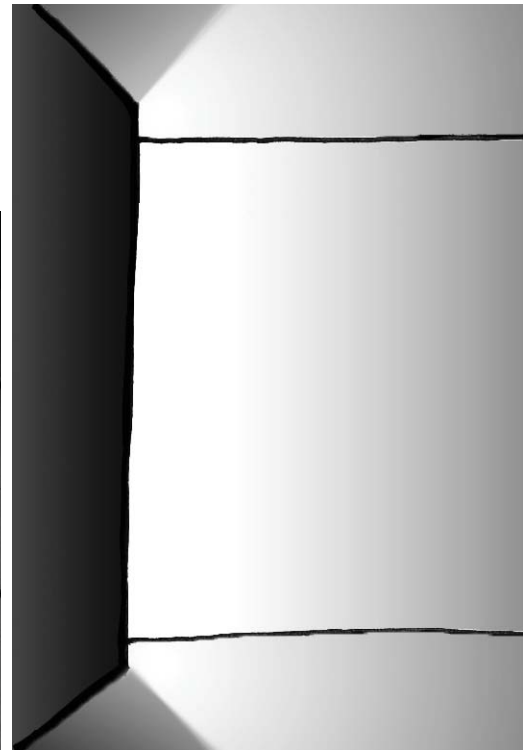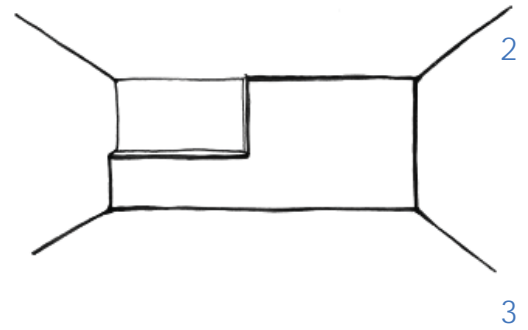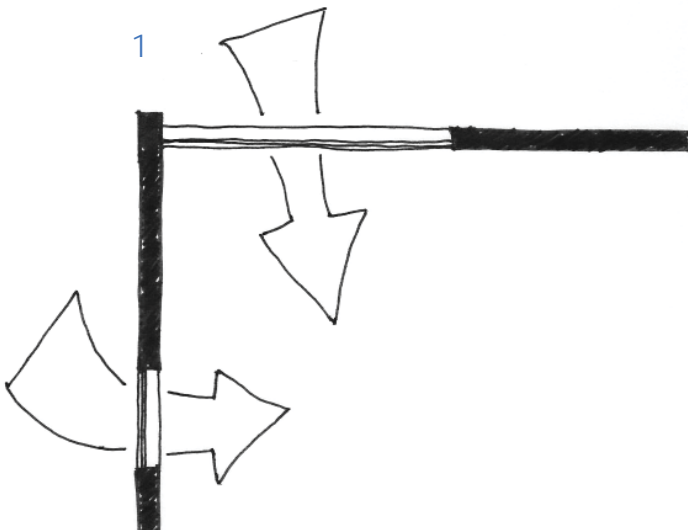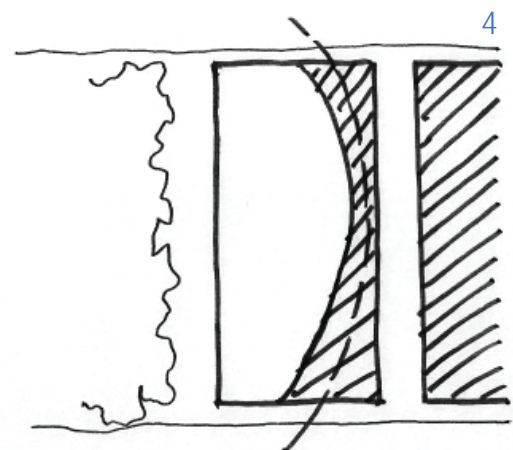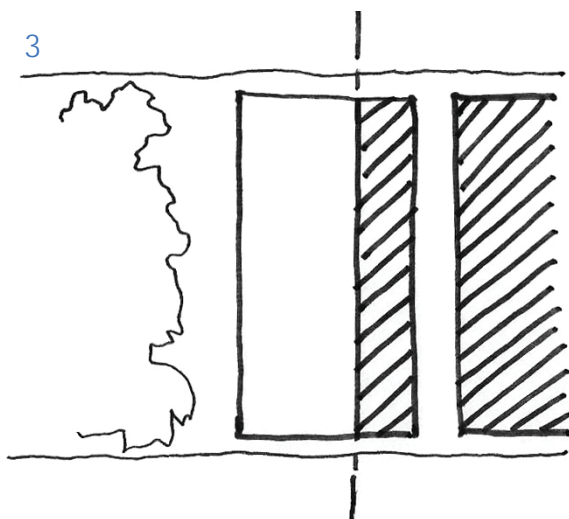
Patterns for
Silent Architecture

2.   Simplicity

- Orthogonal, but not static
- Simplicity of plan, elevation
- Simple proportions of windows (2)
- Somewhat symmetrical, balanced plan (1)
- Ornamentation is in architectural details
- Underplay architecture so it's not intrusive
- Slight variation in axis
- Slight ambiguities in form

1

2

http://www.mattwargo.com/index.php#mi=2&pt=1&pi=10000&s=8&p=7&a=0&at=0
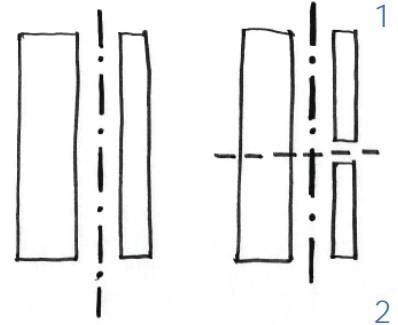
3.   Balance

- Focus and axis (3 & 4)
- Life-filled, breathes
- Scale
    - Scale reduced in large spaces by tiered elements
- Proportion
    - Places at rest or have directional dynamic

3

4

Patterns

4. Form
- Similar throughout, but not exactly the same
- Slightly undulating facades
- Overhangs (2)
    - Provide shadows
    - Deep
    - Roofs and balconies
- Horizontality
    - Shown on facades and other elements (1 & 3)

http://en.wikipedia.org/wiki/Sainte_Marie_de_La_Tourette
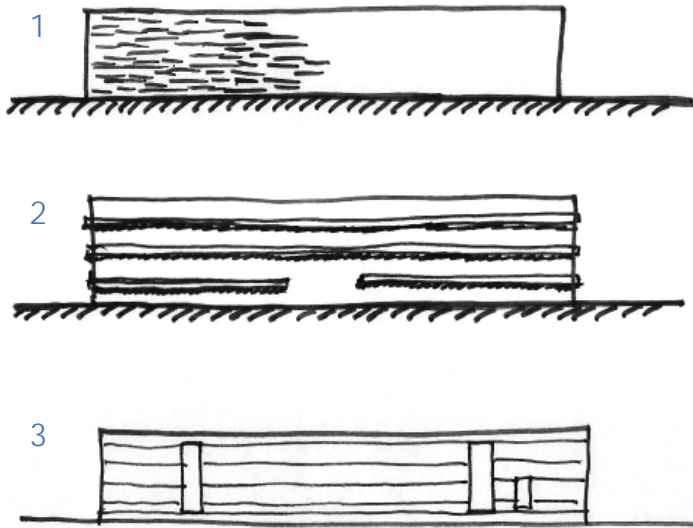
5. Scale
- Stories shown on exterior (5 & 6)
- Double height spaces divided (4)
- Human scale
    - Smaller elements to break up a larger space or facade
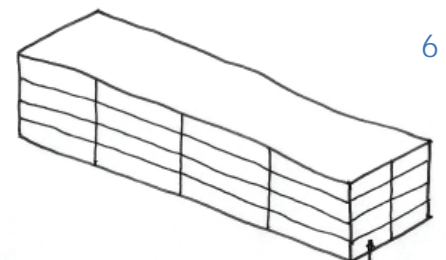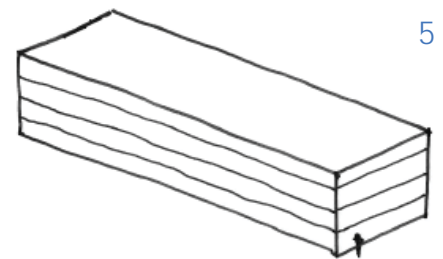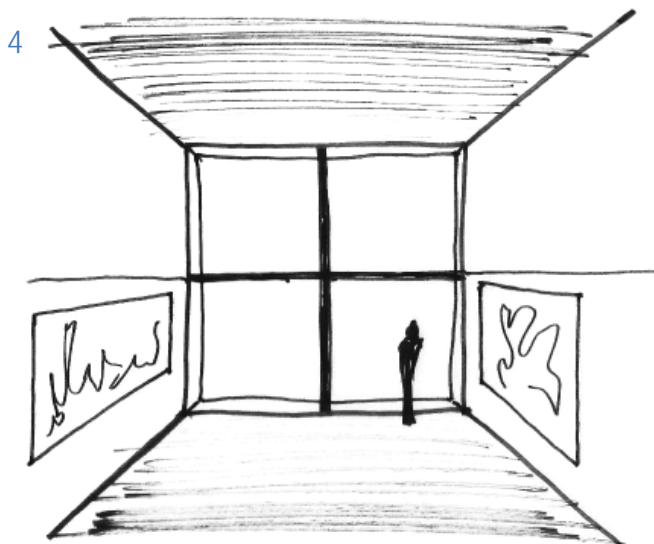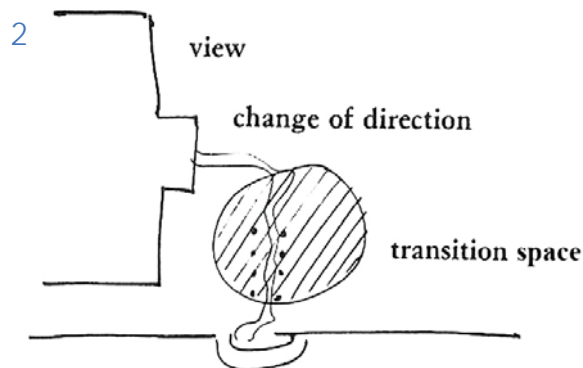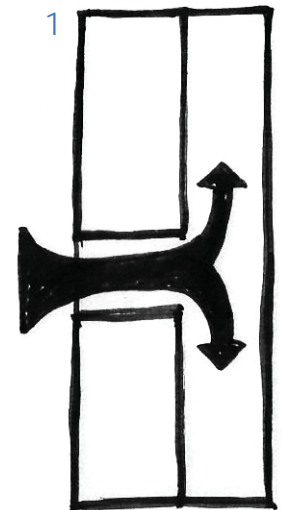

Patterns

6. Materials/Color

- Wood
  - Weathered
  - Horizontally oriented
  - Shingles
  - Light colored
  - Wide planks
- Stone
  - Rough, rusticated
- Concrete
  - Block with mortar finish
  - Shows formwork
- Stucco, plaster
- Local, natural
- Weathered
- Unity, but contrasting
- Few materials/colors
- Simple

http://webstylemag.com/concrete-by-anton-peck

http://freestocktextures.com/texture/id/300

http://texturefreaks.com/2011/11/12/crumbled-plaster-texture/
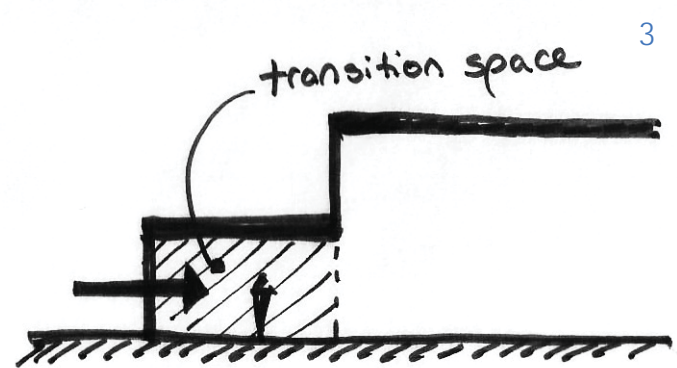
7. Entrance Transition

- Ease transition from public to less public (2)
- Way to get rid of "street behavior"
  - Closed-ness
  - Tension
  - Distance
- Make space between street and front door
- Change of:
  - Light
  - Sound
  - Direction (1)
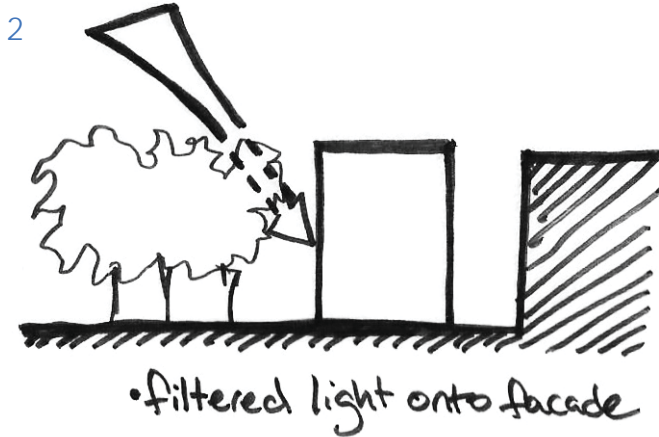 - Surface
  - Level (3)
  - View

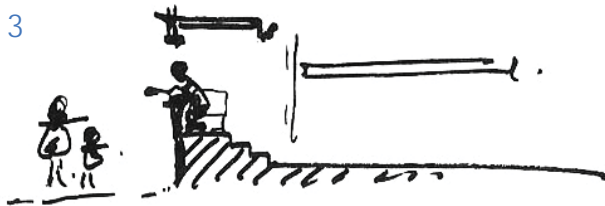*A Pattern Language* by Christopher Alexander

Patterns

8. Nature

- Natural shadows (2)
- Tall surrounding trees
- Small-leaves, short landscaping (1)
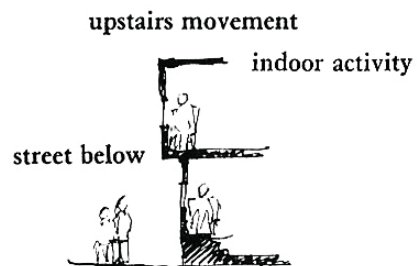
•filtered light onto facade

9. Street Windows

- Connects inside and outside
- Most successful on second and third floors
- Raised alcove on first floor (3)
- Position where people (on the inside) pass often (4)

An alcove street window at ground level.
A Pattern Language by Christopher Alexander

upstairs movement

indoor activity

street below

*A Pattern Language* by Christopher Alexander

Patterns

Palladiumflat

- Groningen, Netherlands
- Architect: Johannes Kappler Architekten
- Completed: 2006
- Usable Floor Area: 7,890 sq. m (84,927 sf)
- Units: 44

This building combines the qualities of a detached house with those of a multi-story building. Each flat has a conservatory on the south side and operable glazing on the north. Each flat also has an open, adaptable plan. On the ground floor there is a community center that serves the whole neighborhood.

http://architectuul.com/architecture/view_image/palladium-flat/1309

http://www.jagerjanssen.nl/nieuws/palladiumflat-groningen
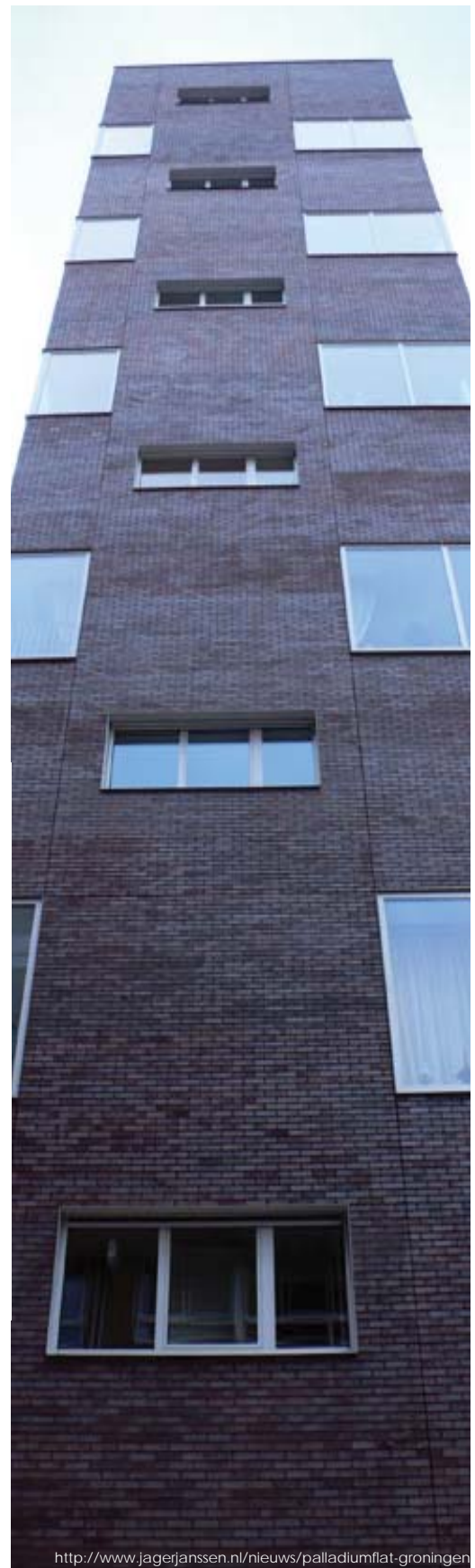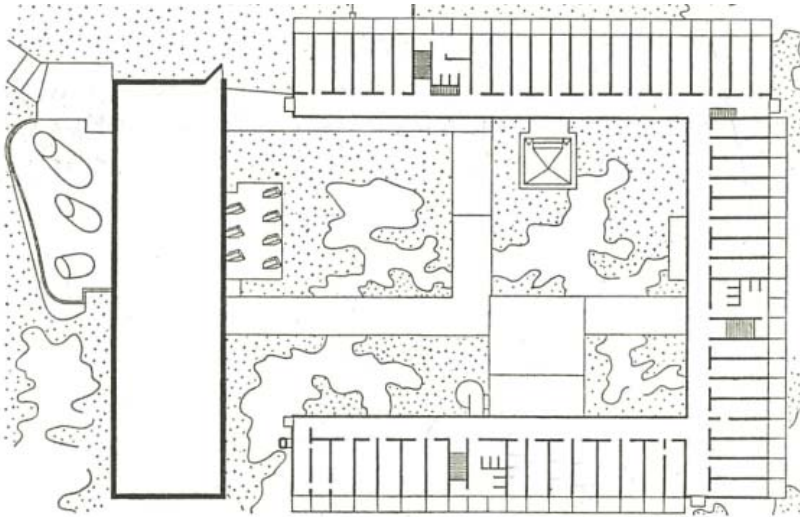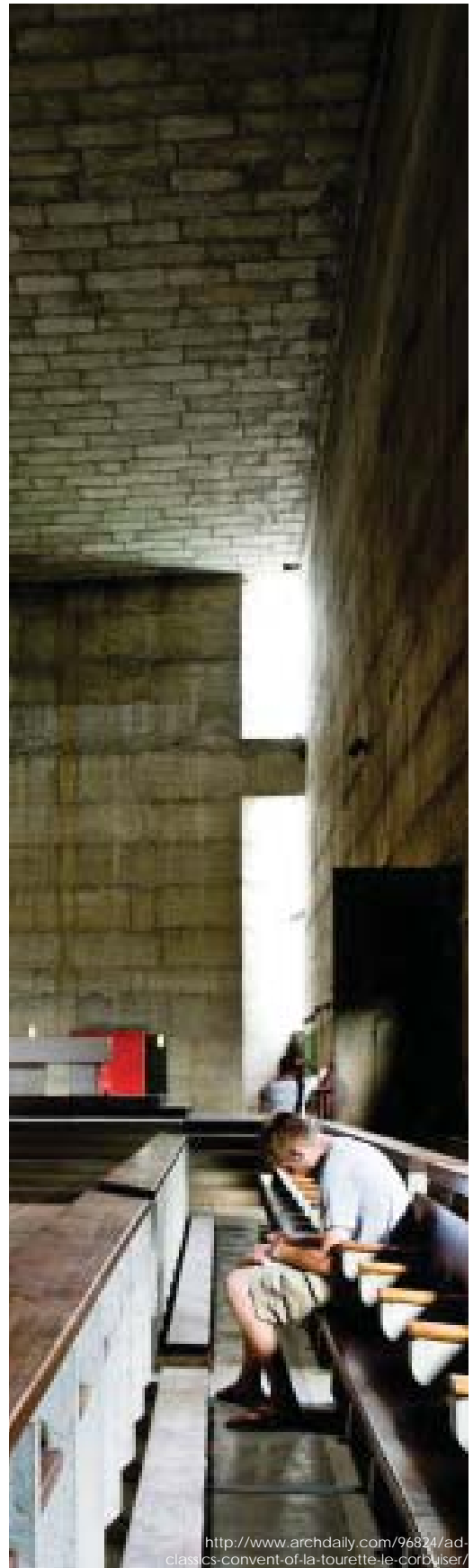
Precedents

Sainte Marie de La Tourette

- Near Lyon, France
- Architect: Le Corbusier
- Constructed: 1956-1960

This building is a Dominican Order priory, consisting of: 100 monk cells, study halls, halls for work and recreation, a library, refectory, church, and circulation.
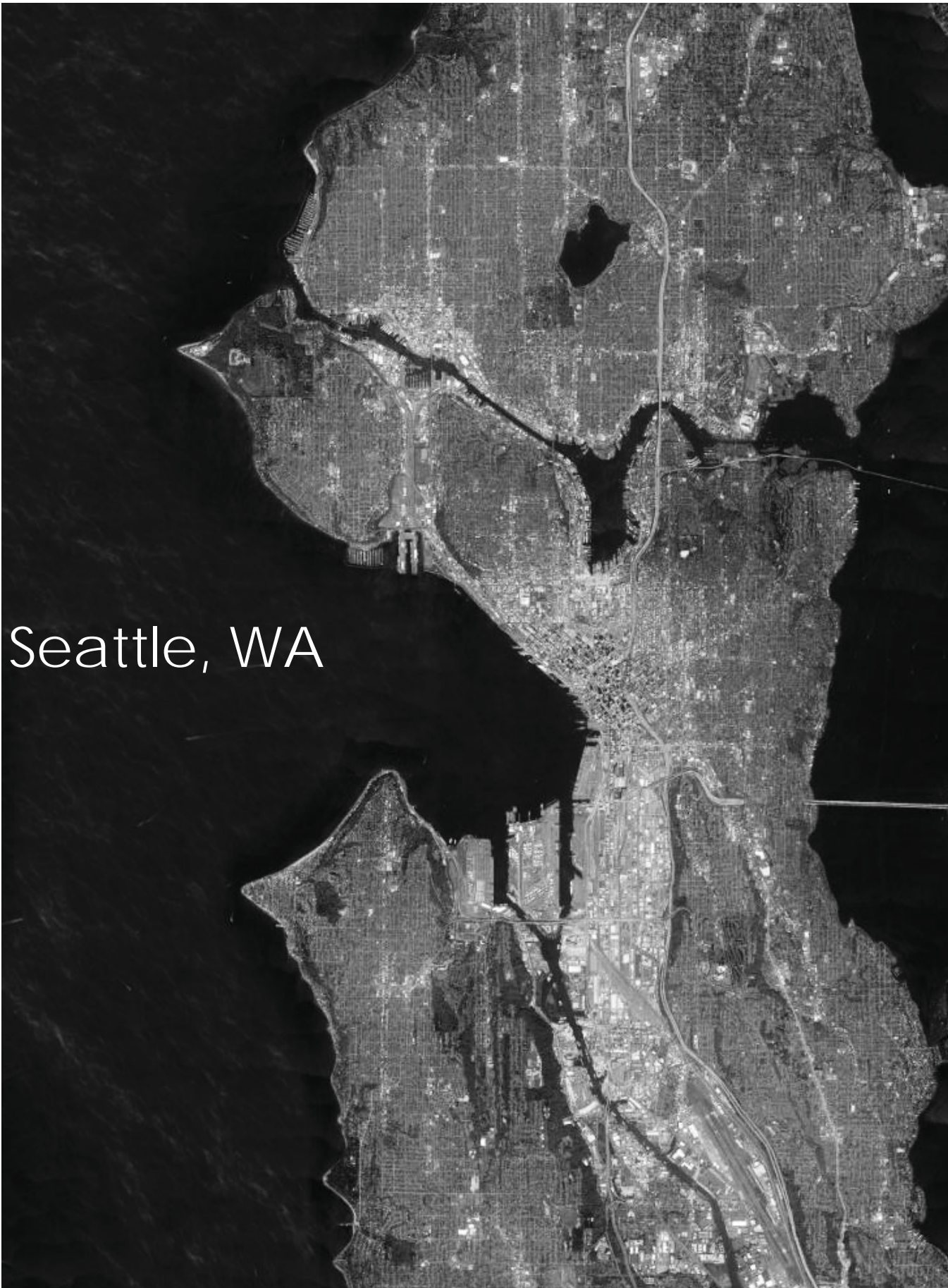

http://petitcabannon.blogspot.com/2012/12/sainte-marie-de-la-tourette.html

http://www.archdaily.com/96824/ad-classics-convent-of-la-tourette-le-corbuiser/

Precedents

Where is it being built?

Seattle, WA

Amenities

- Pike Place Market
- Seattle Art Museum
- Woodland Park Zoo
- Underground Tour
- Museum of Flight
- Seattle Aquarium
- The Waterfront
- Fifth Avenue Theater
- Seattle Symphony
- Space Needle
- Pacific Science Center
- EMP Museum
- CenturyLink Field
- Safeco Field
- Bullitt Center
- University of Washington
- Cornish College of the Arts
- Chihuly Garden and Glass Museum
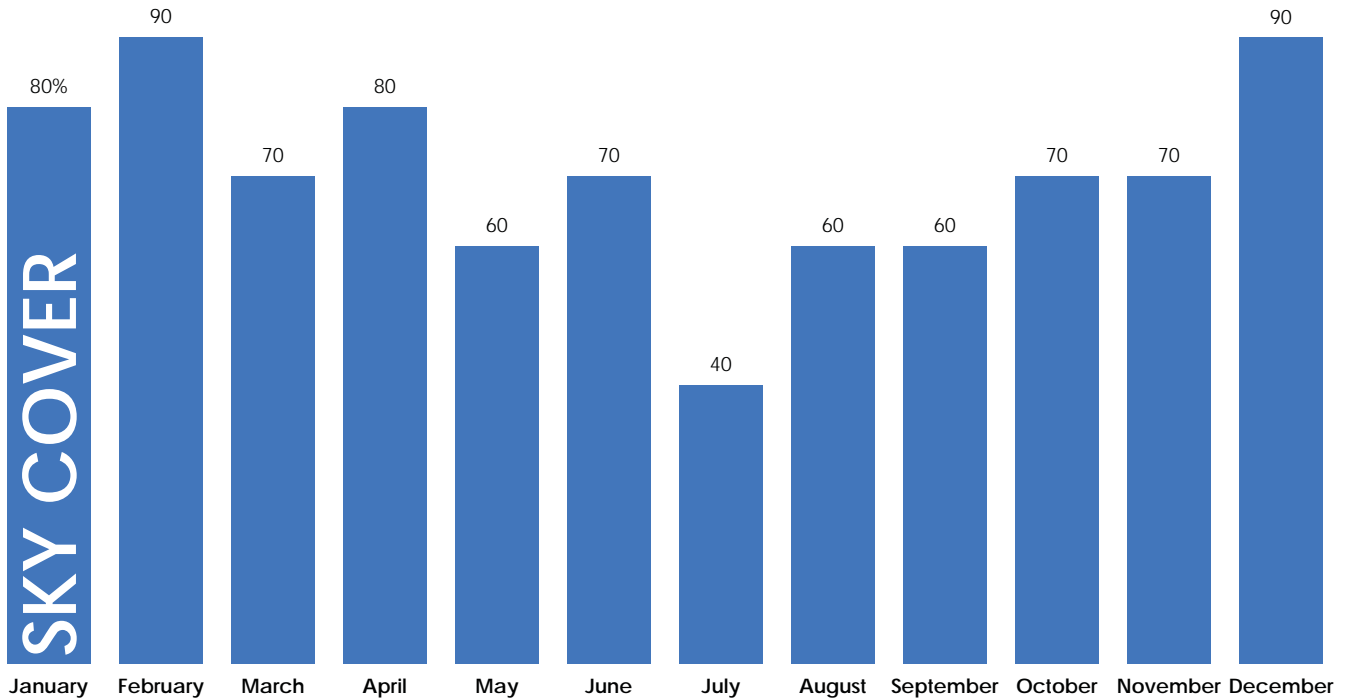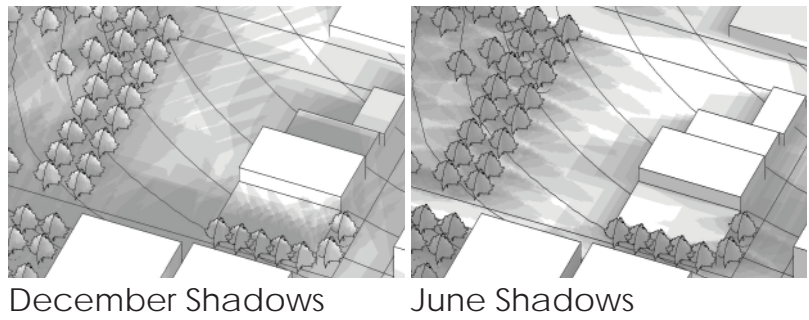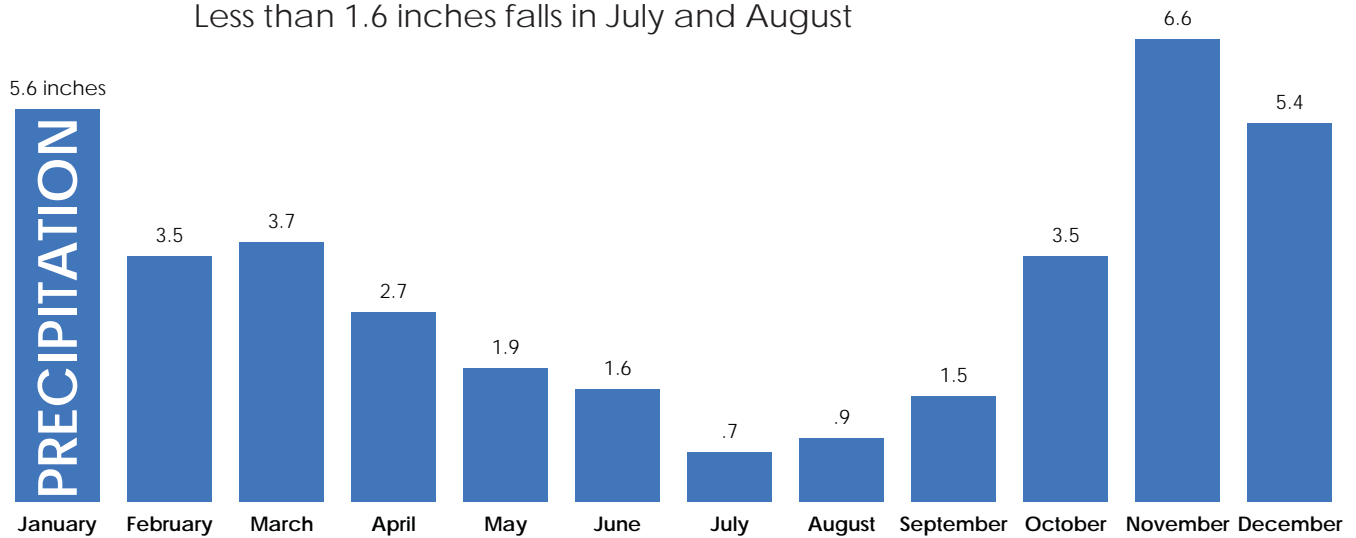

Transportation

- Pedestrian
- Bike
    - Master plan implemented in 2007
    - On-street lanes
    - Trails
    - Signage
    - Parking spaces
- Buses
    - Metro Transit – serves King County
    - Sound Transit – serves King, Pierce, and Snohomish counties
    - Community Transit – serves Snohomish County, University of Washington, Seattle, and the Eastside
- Ferries
- Monorail
    - Connects downtown Seattle and Seattle Center
- Rail & Train
    - Central Link Light Rail – makes 11 stops between Westlake Station in downtown Seattle and Sea-Tac Airport
- Sea-Tac Airport
    - Nation's 15th busiest
    - Over 33 million passengers, over 300,000 aircraft operations, and almost 300,000 metric tons of air cargo passed through this airport in 2012

Features

- Temperate Marine
- Sun/Clouds
    - 201 Cloudy days
    - 93 Partly Cloudy days

December Shadows

June Shadows

SKY COVER

January	February	March	April	May	June	July	August	September	October	November	December
80%	90	70	80	60	70	40	60	60	70	70	90

- Precipitation
    - Around 38 inches annually
    - November – January: moderate to heavy rainfall
        - Roughly half of the annual rainfall occurs during these months.
    - Less than 1.6 inches falls in July and August

PRECIPITATION

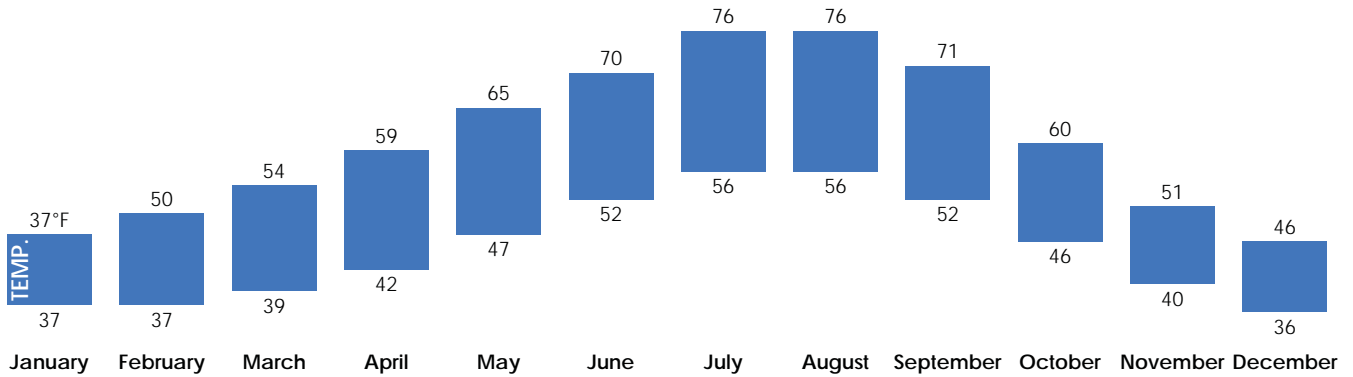| January	February	March	April	May	June	July	August	September	October	November	December
5.6 inches	3.5	3.7	2.7	1.9	1.6	.7	.9	1.5	3.5	6.6	5.4

Climate

- Temperature
    - Spring – median rainfall, temperatures ranging from upper 30s to lower 60s
    - Summer – minimal rainfall, temperatures from 50s to 70s
    - Fall – rapidly increasing amounts of rain, rapidly decreasing temperatures
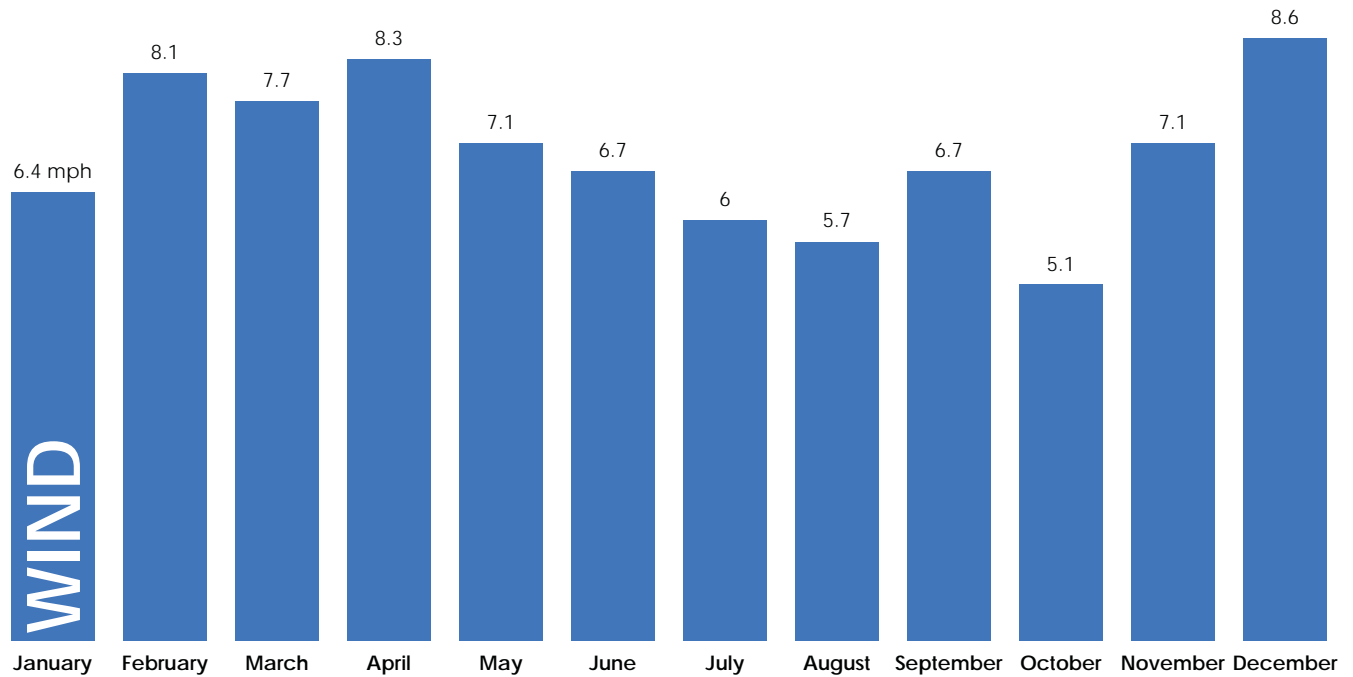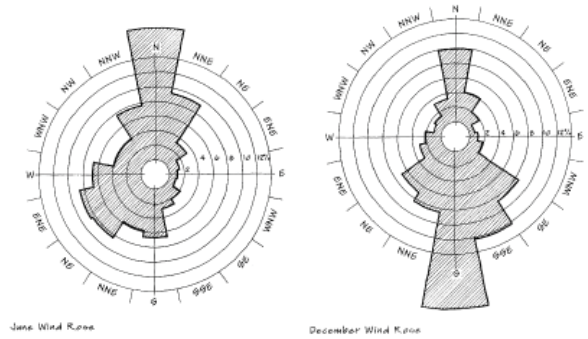   - Winter – heavy rainfall, temperatures average in the 40s

TEMP.											
37°F	50	54	59	65	70	76	76	71	60	51	46
37	37	39	42	47	52	56	56	52	46	40	36
January	February	March	April	May	June	July	August	September	October	November	December

- Wind

    Speeds stay relatively consistent throughout the year, with a slight decrease at the end of the summer into the fall.

    In the warmer months there is a cooling north wind; in the cooler months there is a warming south wind.


June Wind Rose

December Wind Rose

WIND											
6.4 mph	8.1	7.7	8.3	7.1	6.7	6	5.7	6.7	5.1	7.1	8.6
January	February	March	April	May	June	July	August	September	October	November	December

Climate

- Seattle Municipal Code
   Title 23 Land Use Code

23.49.178: Building Height: 85′, 120′ if 75% of floor area is residential.

Courtyard

23.49.010: General Requirements: Common recreation area for new development.

23.49.019: Parking: One bicycle space required for every 2 units. No vehicle parking required.

120′ max.

Codes
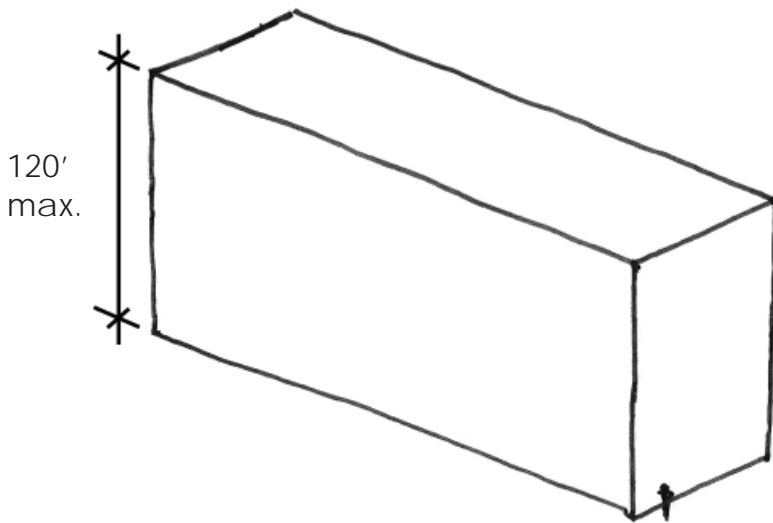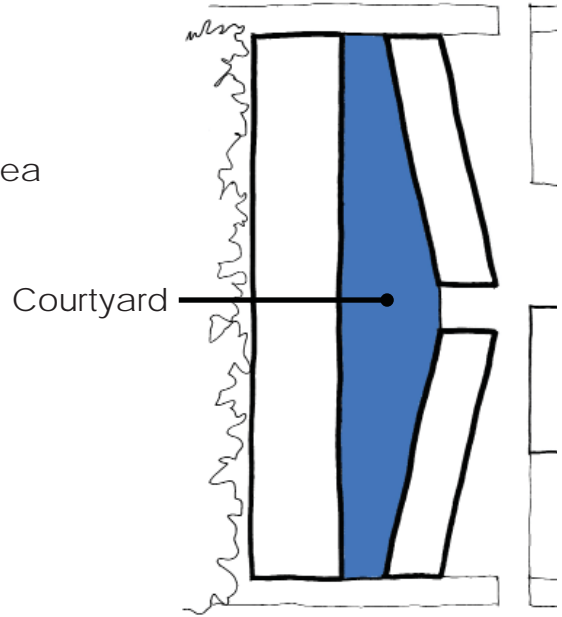
Pioneer Square District

Characteristics

- Seattle's first neighborhood – a very historic district
- Typically 3-4 stories
- Materials: brick, stone, wood/metal storefronts
- Buildings do not have setbacks at street level
- The district forms a grid pattern with four buildings in a block
- Neighboring buildings have a distinctive block-like massing composition
- Human scale elements: standard-sized bricks, arches, stone details, cast iron
- Windows: double or single hung, pivot type
- Typical building design: horizontal divisions with base and cap levels, vertical elements, heavy cornices/parapets, ornamental storefronts

Amenities

- Retail: printing, pawn shop, smoke shop, photography, furniture, grocery store, flower shop, bike store, barber shop
- Restaurants: pizza, bars, Chinese, barbeque, cafés
- Residential
- Offices
- Art galleries
- Homeless Shelter
- Parking garage
- Hotel
- Shotgun Wedding Chapel
- Post Office
- Seattle Underground

Historical regulations

- "New construction must be visually compatible with the predominant architectural styles, building materials, and inherent historic character of the District."
- Site: property line is the line of the building mass
- Design: horizontal emphasis
- Materials: synthetic stucco not permitted
- Base: approximately 18-24 inches allowable

Features & Codes
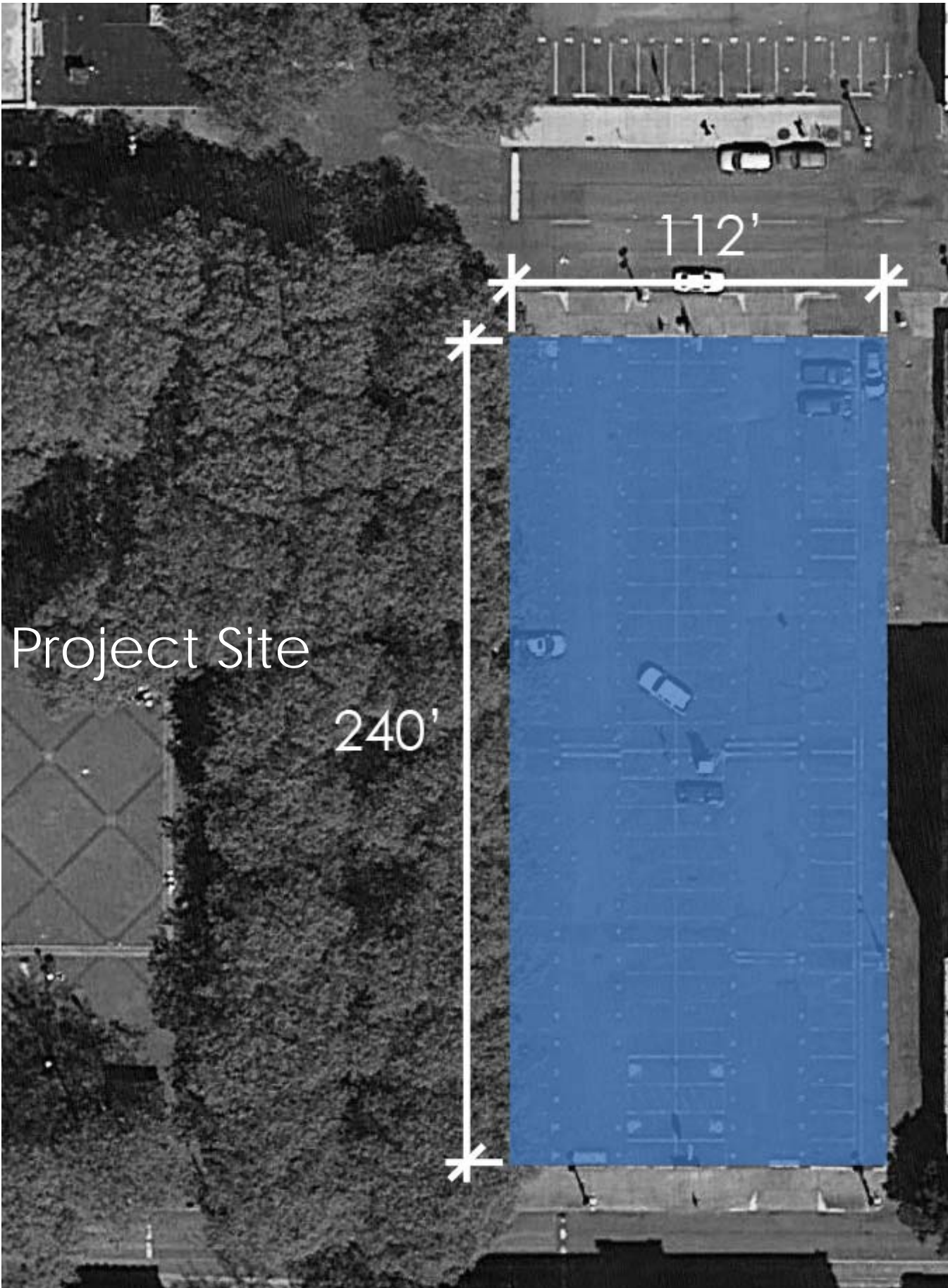
Project Site

112'

240'

Characteristics
- The site is currently a parking lot.
- It is situated on man-made land.

Amenities
- Adjacent to Occidental Park – an urban, paved park with tall trees
- Two blocks from the waterfront
- Views: Smith Tower and downtown Seattle to the north, Mt. Rainier to the southeast
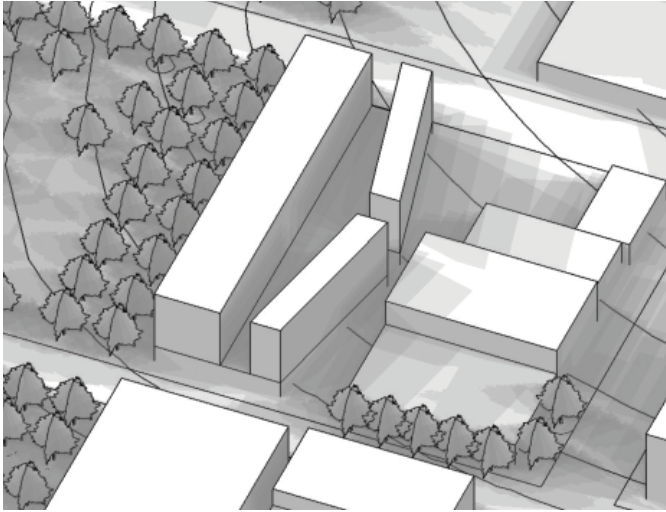
Transportation
- Located along a pedestrian avenue
- Two blocks from a bus/light rail station
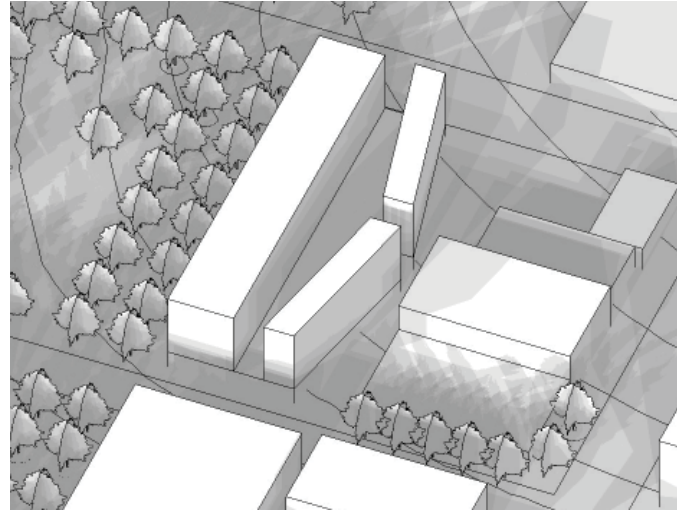- Parking lot directly to the north of the site

Features

Sun/Shade Studies

June Sun/Shade

December Sun/Shade

Wind

- Without a building, wind flows around neighboring buildings and through the site. It also rises in the site, moving from high pressure areas beneath the trees and between the buildings to the low pressure of the empty site.
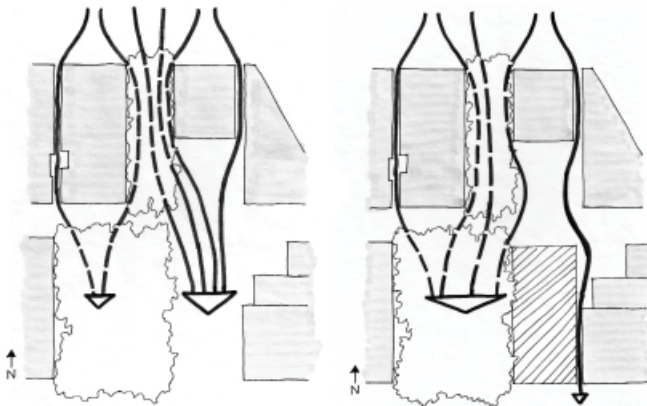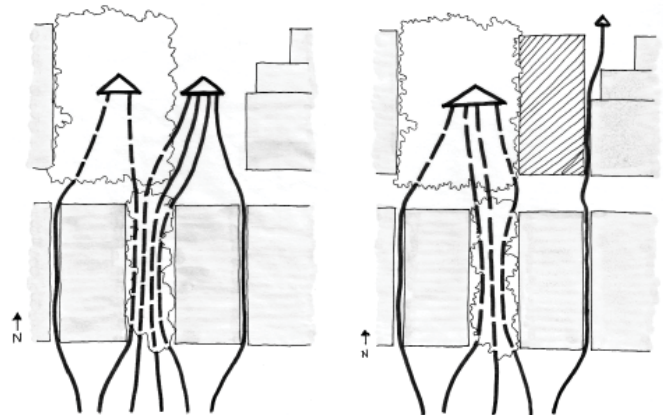

Winter Wind   Summer Wind

Winter Wind   Summer Wind

Summer Wind

Winter Wind

Climate

Equitable Use:

The design is useful and marketable to people with diverse abilities.

- Provide the same means of use for all users: identical whenever possible; equivalent when not.
- Avoid segregating or stigmatizing any users.
- Make provisions for privacy, security, and safety equally available to all users.
- Make the design appealing to all users.

Flexibility in Use:

The design accommodates a wide range of individual preferences and abilities.

- Provide choice in methods of use.
- Accommodate right- or left-handed access and use.
- Facilitate the user's accuracy and precision.
- Provide adaptability to the user's pace.

Simple and Intuitive Use:

Use of the design is easy to understand, regardless of the user's experience, knowledge, language skills, or current concentration level.

- Eliminate unnecessary complexity.
- Be consistent with user expectations and intuition.
- Accommodate a wide range of literacy and language skills.
- Arrange information consistent with its importance.
- Provide effective prompting and feedback during and after task completion.

Perceptible Information:

The design communicates necessary information effectively to the user, regardless of ambient conditions or the user's sensory abilities.

- Use different modes (pictorial, verbal, tactile) for redundant presentation of essential information.
- Maximize "legibility" of essential information.
- Differentiate elements in ways that can be described (i.e., make it easy to give instructions or directions.
- Provide compatibility with a variety of techniques or devices used by people with sensory limitations.

Universal Design

Tolerance for Error:
The design minimizes hazards and the adverse consequences of accidental or unintended actions.
- Arrange elements to minimize hazards and errors: most used elements, most accessible; hazardous elements eliminated, isolated, or shielded.
- Provide warnings of hazards and errors.
- Provide fail-safe features.
- Discourage unconscious action in tasks that require vigilance.

Low Physical Effort:
The design can be used efficiently and comfortably and with a minimum of fatigue.
- Allow user to maintain a neutral body position.
- Use reasonable operating forces.
- Minimize repetitive actions.
- Minimize sustained physical effort.

Size and Space for Approach and Use:
Appropriate size and space is provided for approach, reach, manipulation, and use regardless of user's body size, posture, or mobility.
- Provide a clear line of sight to important elements for any seated or standing user.
- Make reach to all components comfortable for any seated or standing user.
- Accommodate variations in hand and grip size.
- Provide adequate space for the use of assistive devices or personal assistance.

Universal Design

Occupancy
- R-2: permanent occupants (staying more than 30 days), building contains more than 2 dwelling units

Sprinklers
- Required automatic sprinkler system throughout buildings with an R fire area (In other words, if a building contains a single dwelling or sleeping unit, even if it is contained within its own fire area, then the entire building requires a sprinkler system.)

Construction Type
- Type IV – Heavy Timber

Allowable Floor Area
- 20,500 sf

Height and Number of Stories
- 65 feet, 4 stories

Location on Site
- Fire separation distance <10' – rated for interior fire
- Fire separation distance >10' – rated for fire exposure on both sides
- Fire separation distance = 14' – 45% sprinklered or protected opening per floor
- 30" parapet walls

Means of Egress
- Ceiling height not less than 7'-6"
- Minimum corridor width of 36"
- 30-500 occupants with 2 exits
- Up to 250' horizontal egress
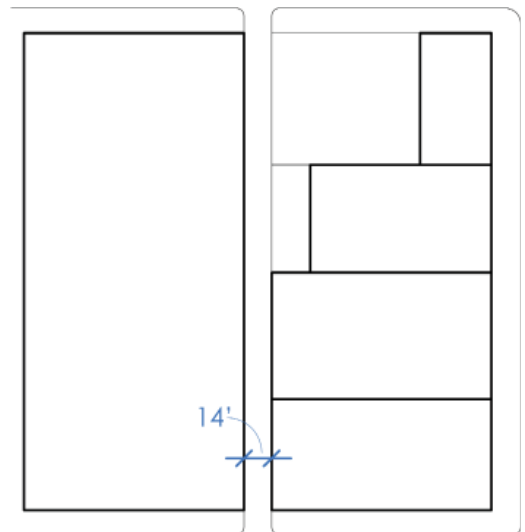
Building Codes

Who is it for?

Baby Boomers

- People born between 1946 and 1964
- 78.2 million in the U.S. as of 2005
- Main concerns: Health, personal safety, finances
- Elements that they consider important:
  Recognizable landmarks
  Places to socialize
  Age-specific services

Students

- College-aged
- Non-traditional students
- Main concerns: school work, upcoming major life decisions
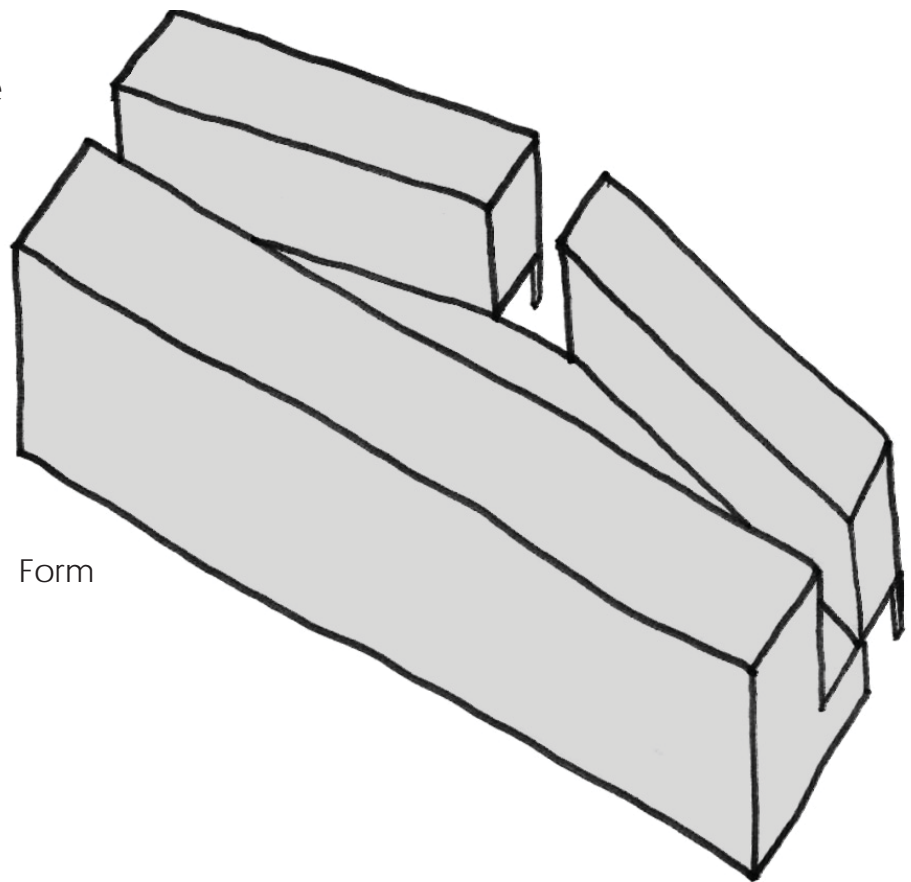
Artists

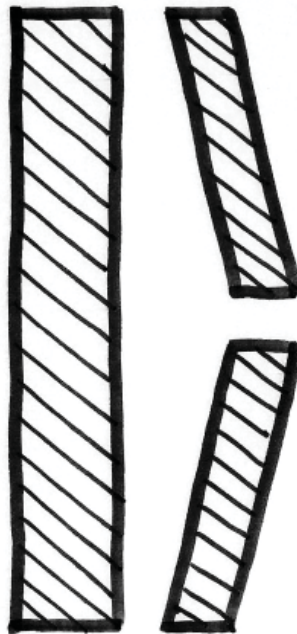- Baby Boomers: exploring new options in life
- Students: of art
- Main concerns: supportive place to create art

http://artistsstudios.tumblr.com/
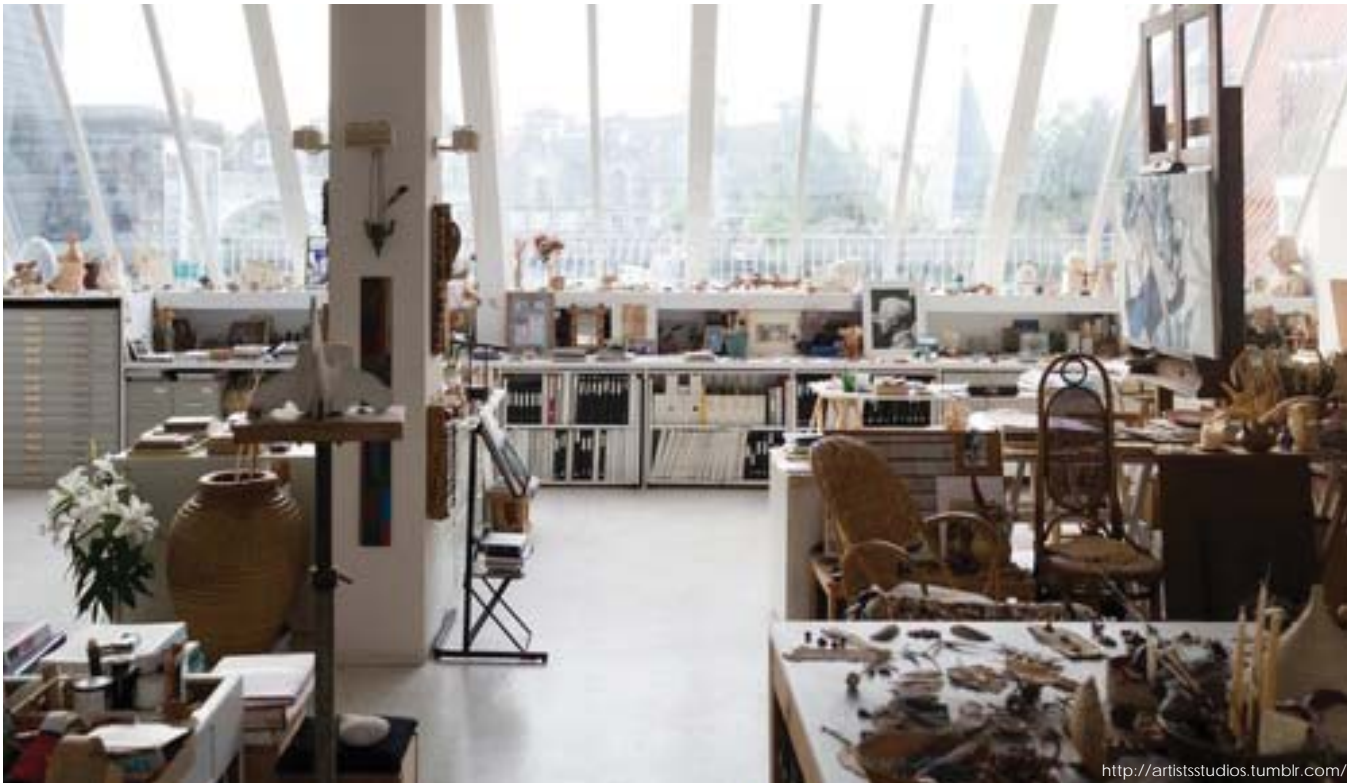
Those who need an Escape

Design Proposal

Patterns of
Silent Architecture

Form
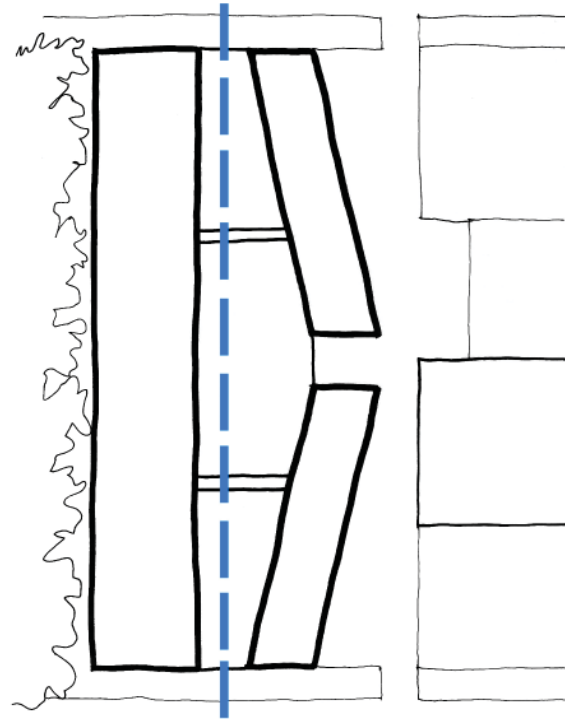
Simplicity   Balance

Building

Levels of Privacy

- Private
- Family
- Public
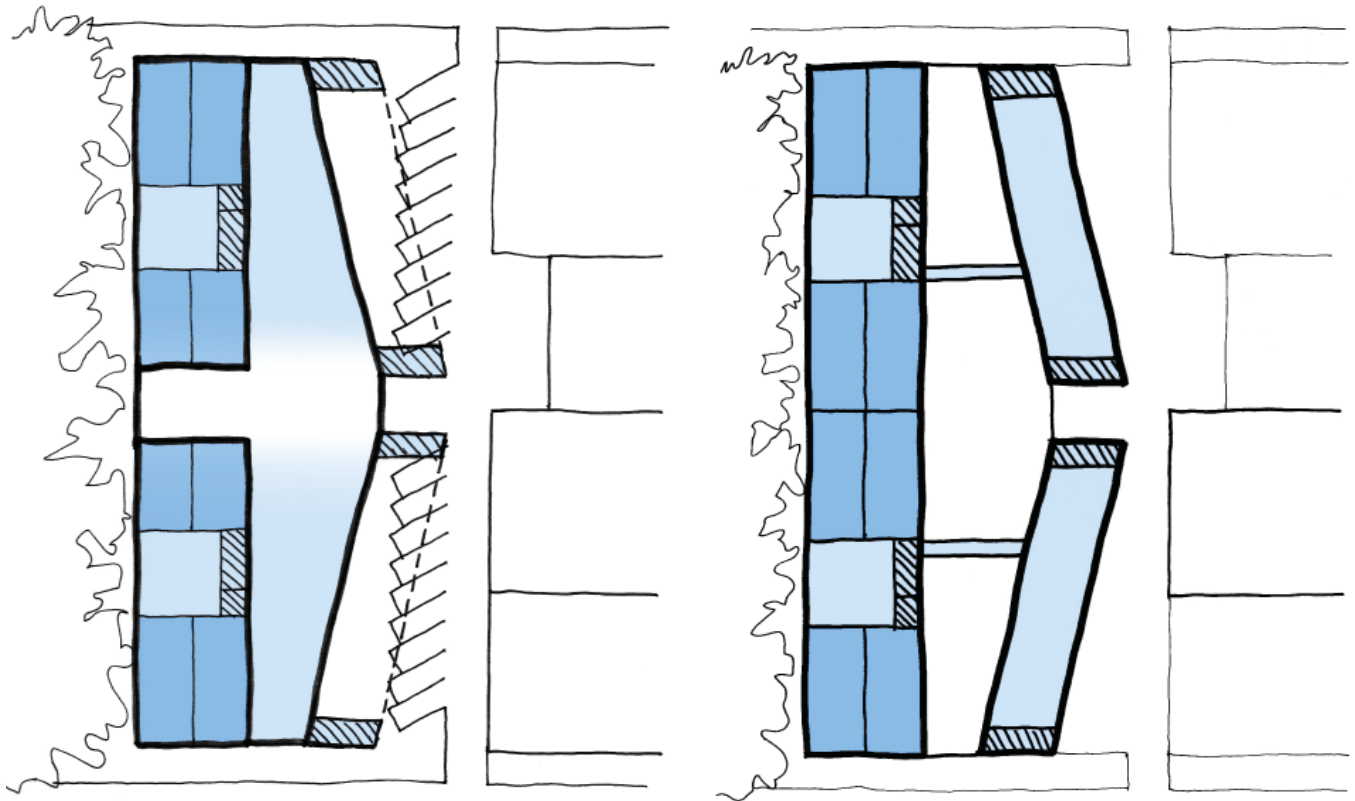
Ground Floor

2nd-4th Floors
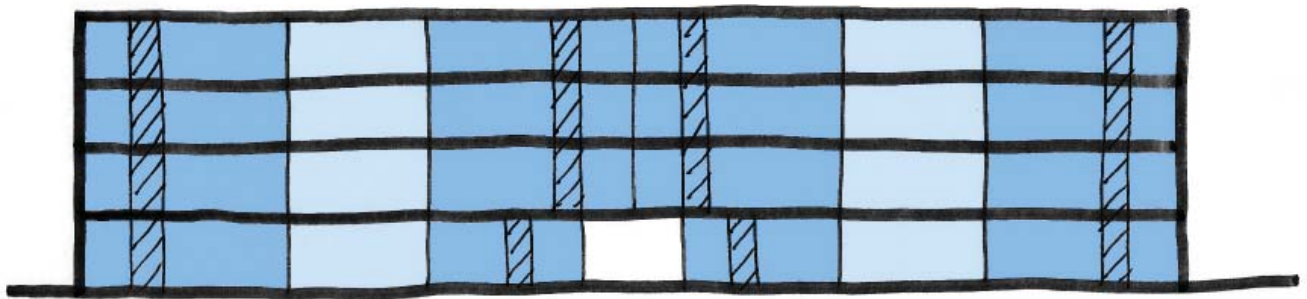
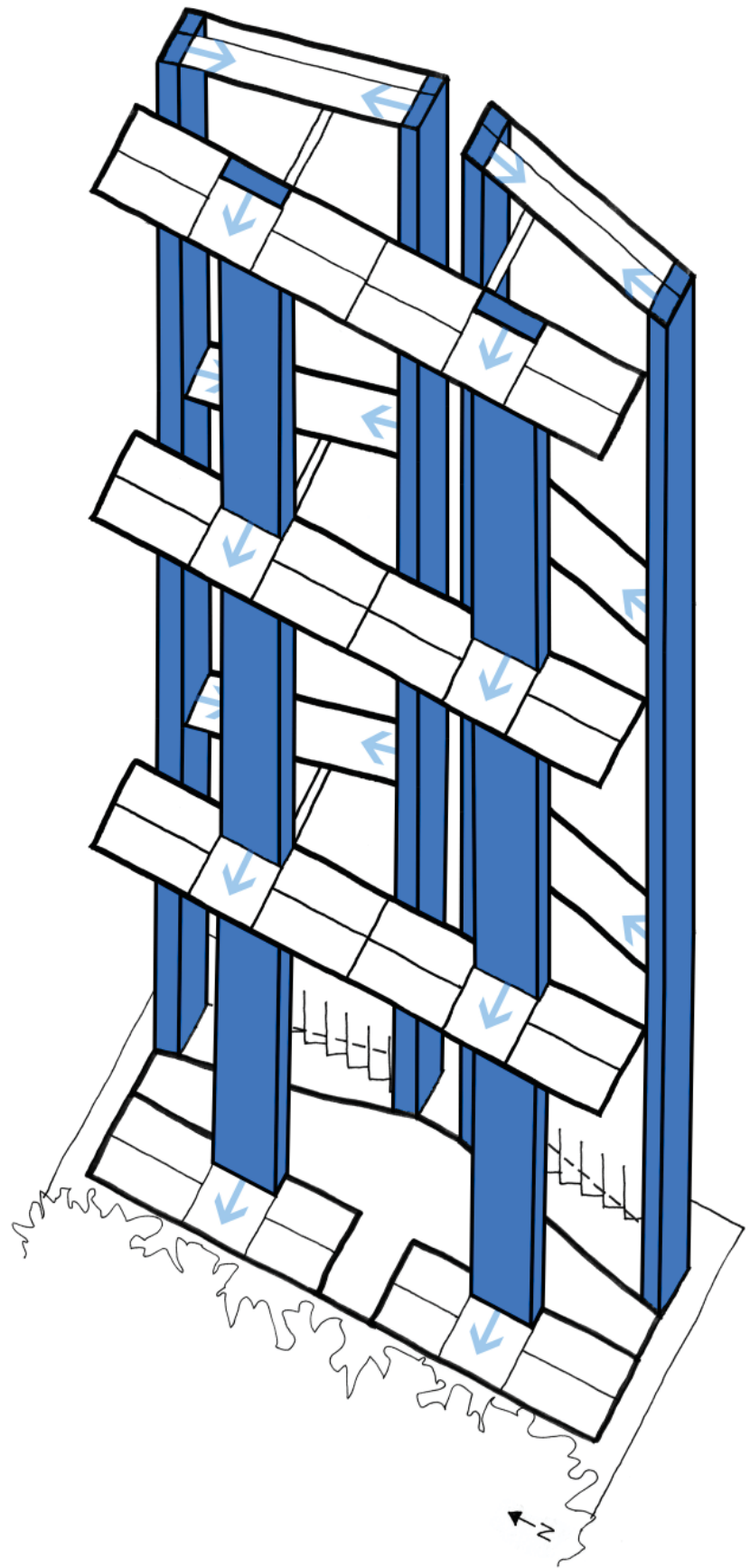Section looking West

Building

Circulation

■ Vertical
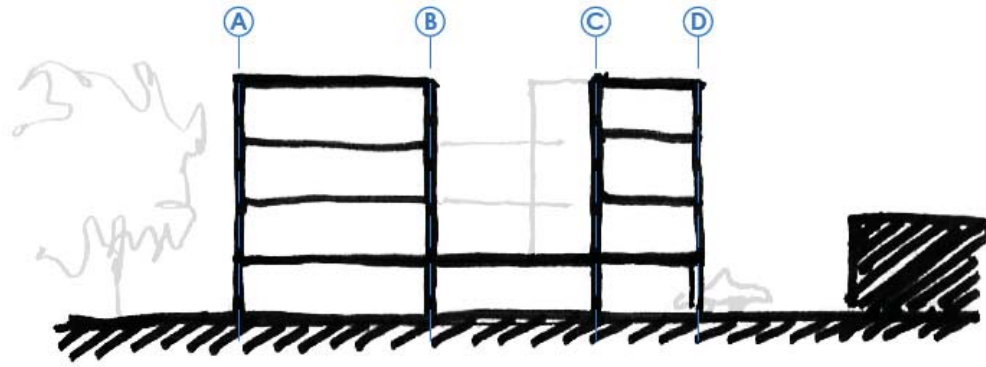
→ Horizontal

Circulation:
Typical Floor
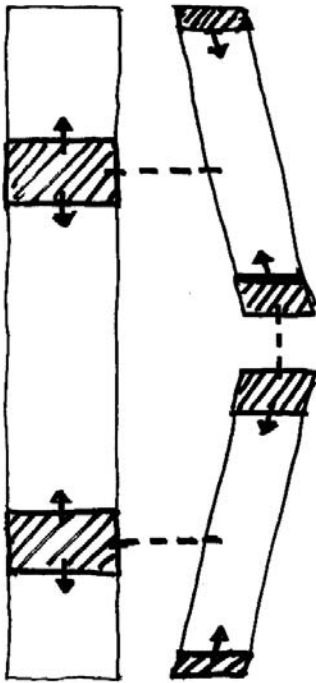
▨ Vertical

→ Horizontal

- - - Exterior
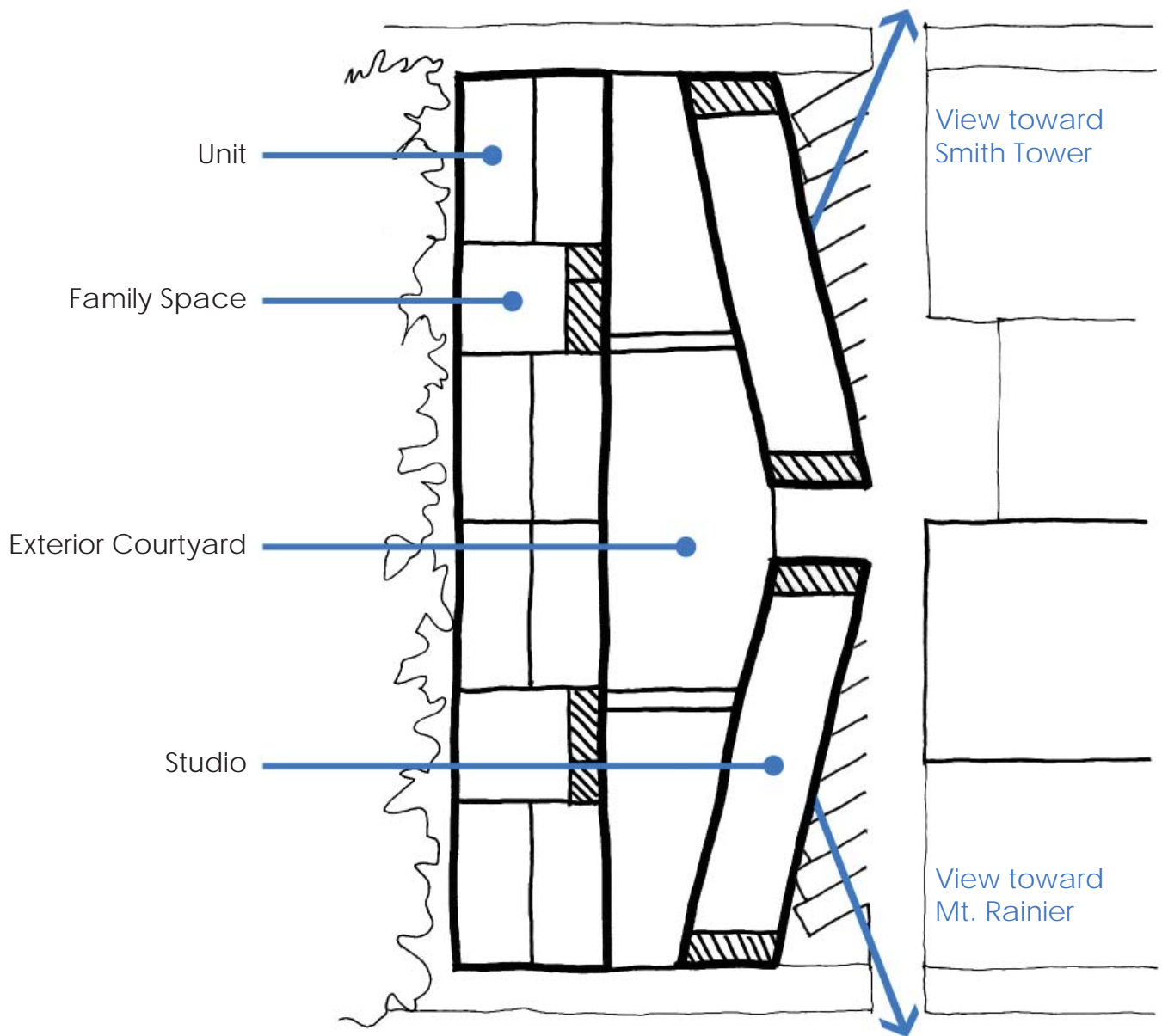
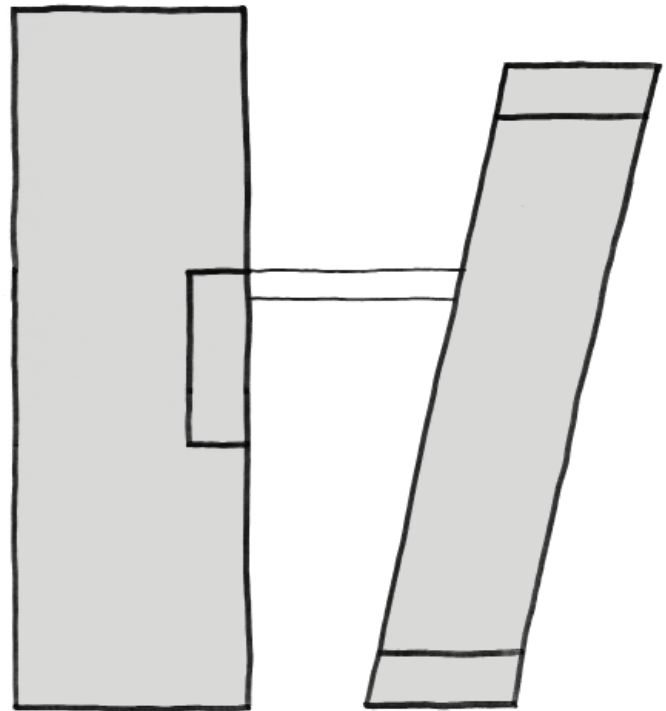# Building

Structure

Organization

Unit

Family Space

Exterior Courtyard

Studio

View toward
Smith Tower
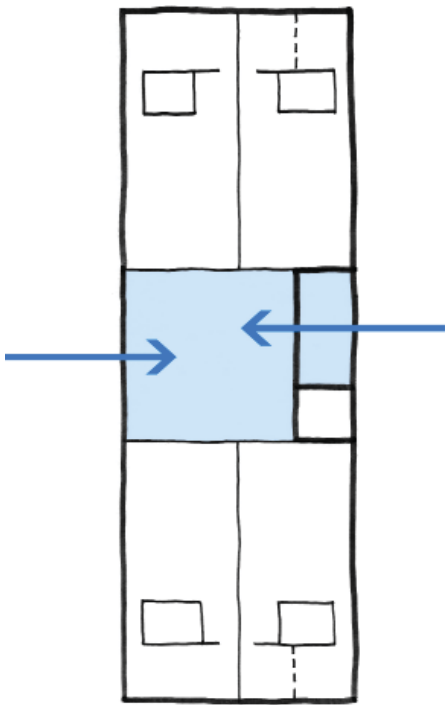
View toward
Mt. Rainier
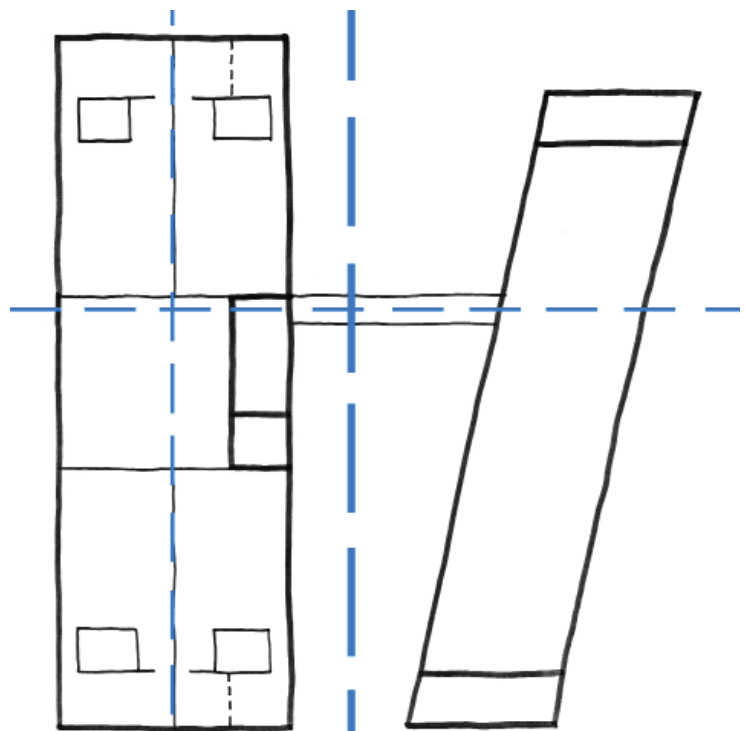
Building

Patterns of
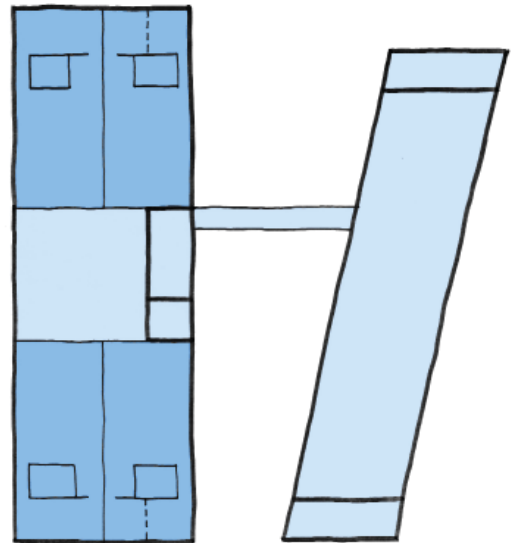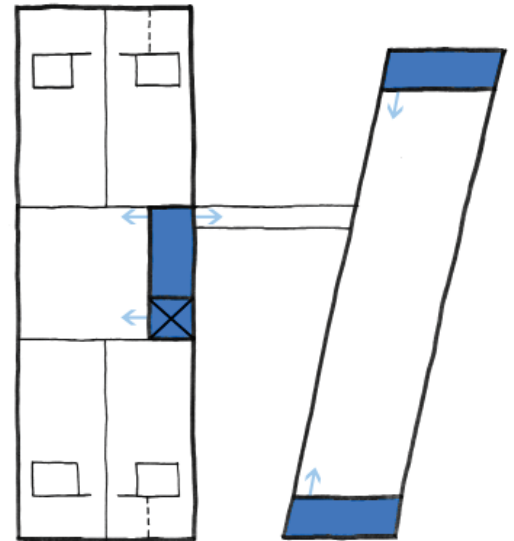# Silent Architecture

Simplicity

Form

Light

Balance
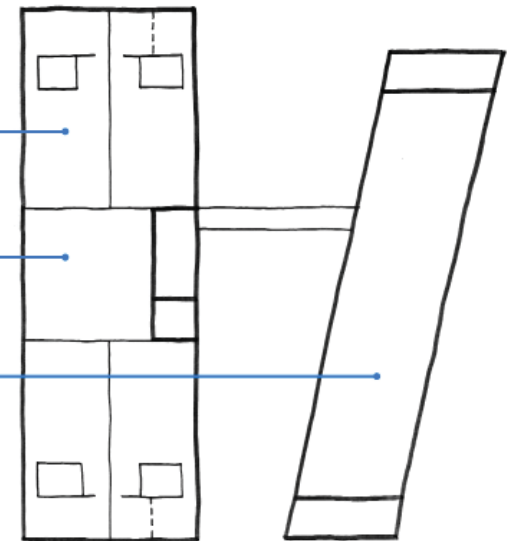
Family

Levels of Privacy

■ Private
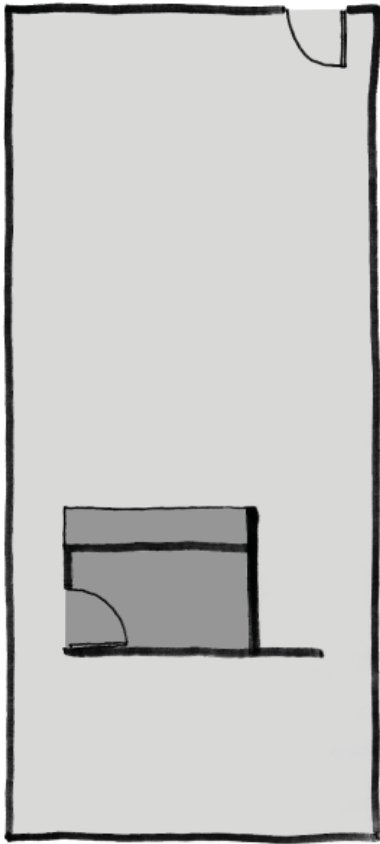□ Family

Circulation

■ Vertical
→ Horizontal

Organization

Unit

Family Space
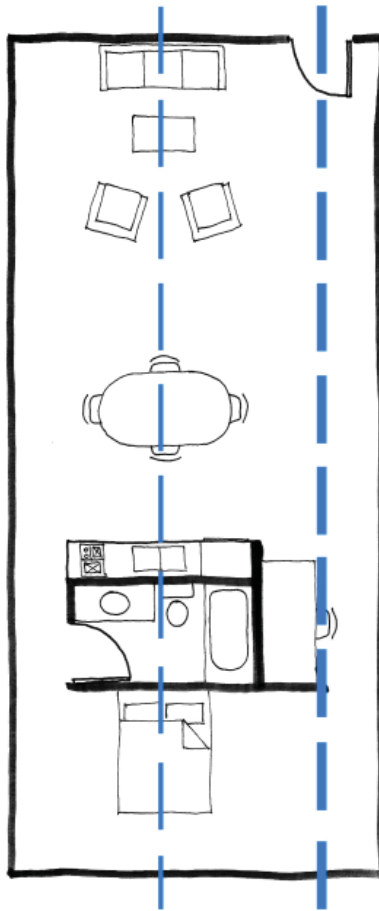
Studio

Family

Patterns of
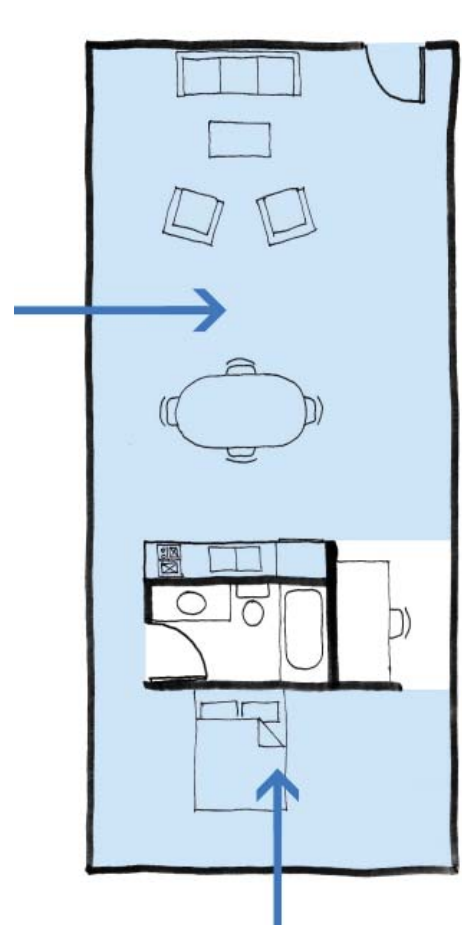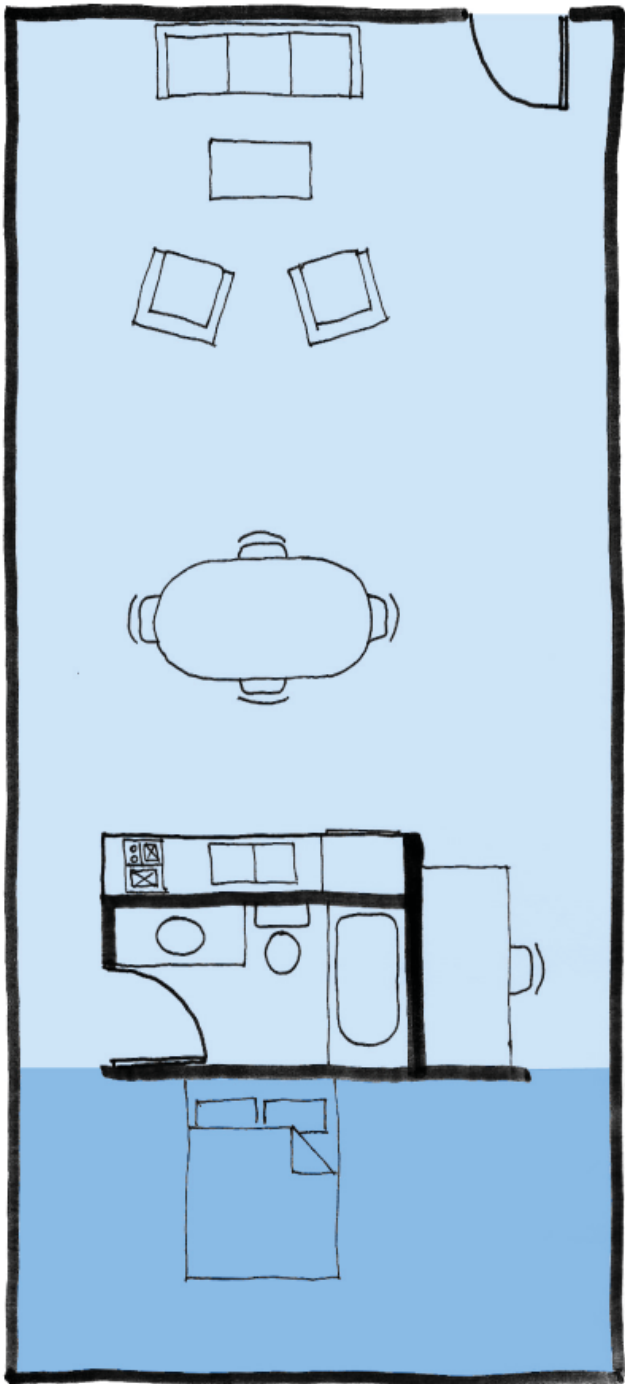# Silent Architecture

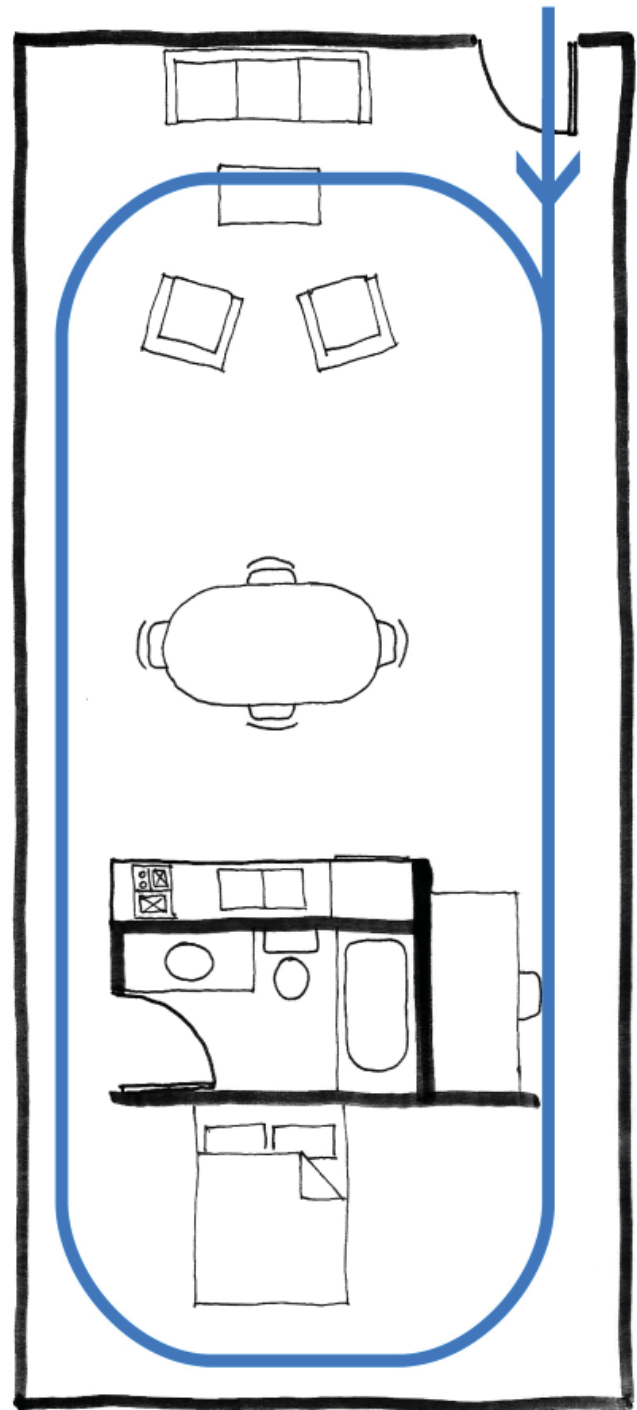Form

Balance

Light
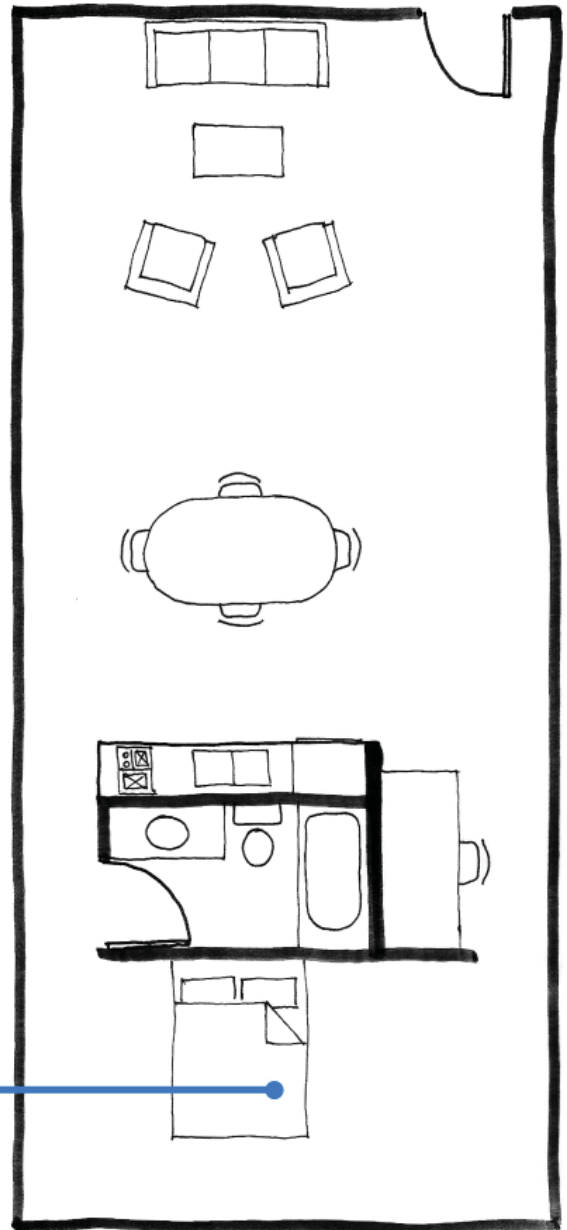

Unit

Levels of Privacy

■ Private
□ Unit Family

Circulation
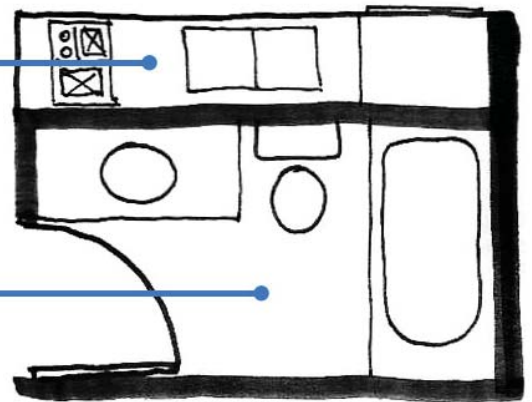
■ Horizontal

Unit

Organization

Can be divided into 2 bedrooms

Pod

Minimal Kitchen

Accessible Bathroom

Unit

Public Space ——— Family Space ——— Private Space

Public Space
- Entrance/Lobby
    - A place for residents to enter the building and greet visitors.

Family Space (2 per floor, 8 total) ——— 1,200 sf per family
- Courtyard
    - Exterior space for all residents.
- Circulation
    - Wide paths for residents to walk/think/interact with other residents.
- Living
    - Space to relax and spend time with "family".
- Kitchen/Dining
    - A full kitchen and dining table in each family.
- Studio (1 per family, 8 total) ——— 2,760 sf per family
    - Space for residents of a family to work on art together.
- Trash/Recycling, Laundry, Mechanical

Private Space (4 units per family, 32 total) ——— 900 sf per unit
- Living
    - A place to get away in order to relax.
- Minimal Kitchen/Dining
    - A place to eat by oneself.
- Bathroom
- Bedroom
    - A place to rest.
- Storage

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