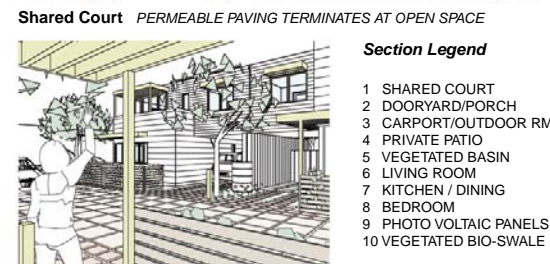
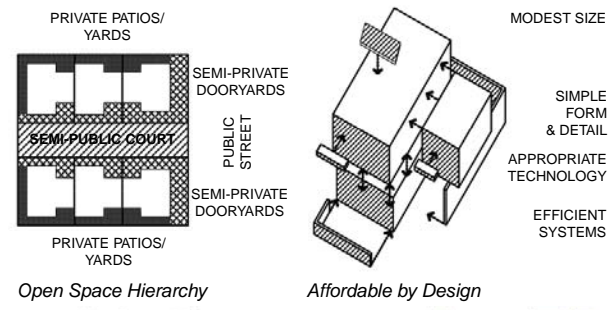
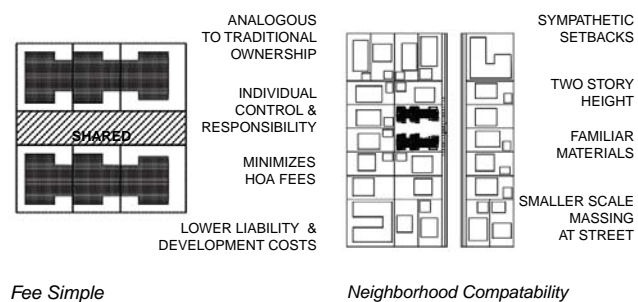


PORTLAND COURTYARD HOUSING: INNER PORTLAND INFILL SITE

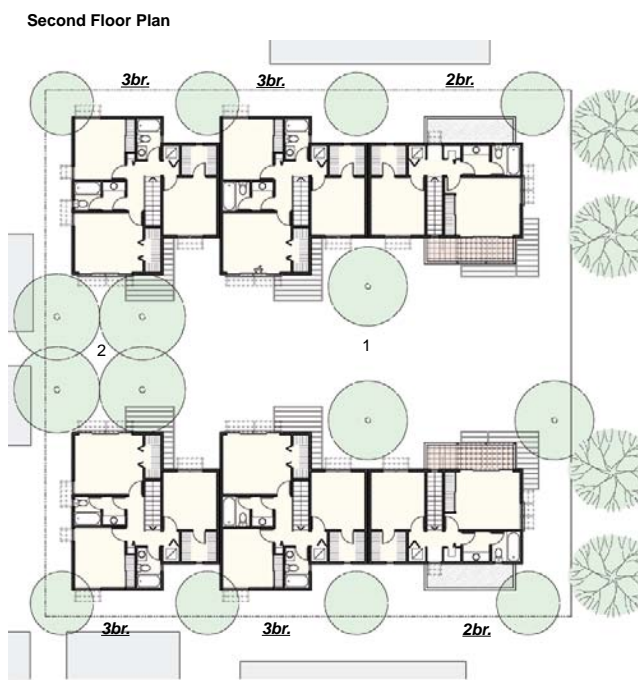
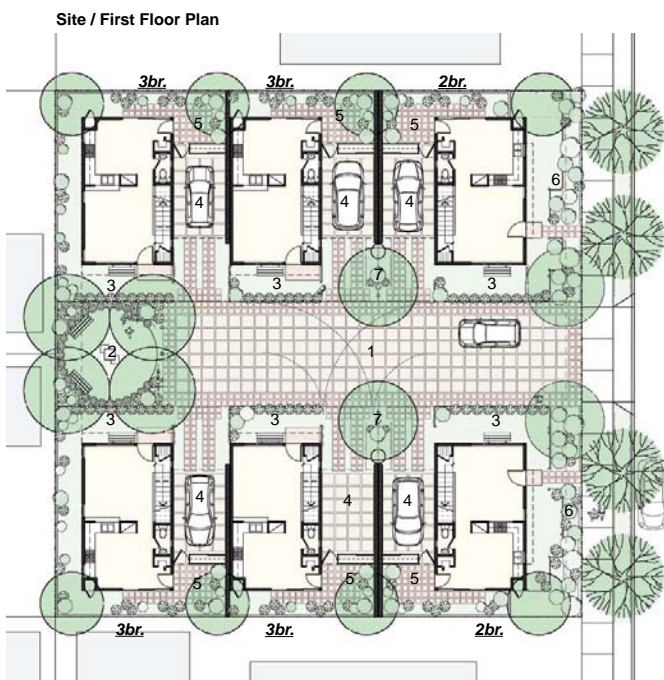
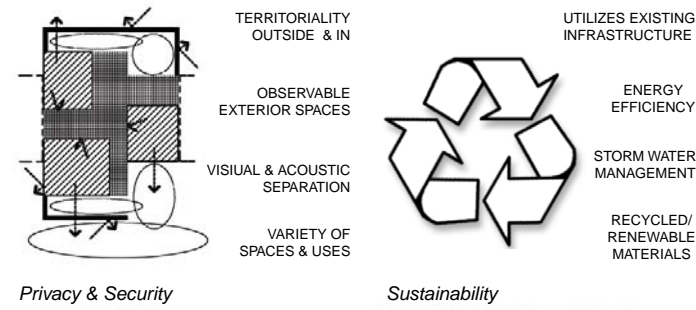
INDEPENDENT STRUCTURES ON FEE SIMPLE LOTS, FORM A SHARED COURT. THIS MULTI-USE SPACE, PERMEABLY PAVED, TERMINATES IN A SHADED COMMON GREEN; A VEGETATED INFILTRATION BASIN. APPROPRIATE SETBACKS & SINGLE FAMILY SCALED MASSING MERGE WITH THE NEIGHBORHOOD. FAMILIAR MATERIALS, ALBEIT IN MODERN FORMS, ADD DOMESTIC SCALE. DOORYARDS DEFINE TERRITORY, SEPARATING PUBLIC FROM PRIVATE. MODESTLY SCALED & SIMPLE, THE HOMES FORM A VARIETY OF SPACES THAT FOSTER PRIVACY AND SECURITY. CHILDREN PLAY ON PRIVATE PATIOS, FRONT PORCHES, THE SHARED COURT OR COMMON GREEN, ALL WITHIN VIEW AND EARSHOT OF THE HOME. ENVIRONMENTALLY APPROPRIATE TECHNOLOGIES & MATERIALS FOSTER A SUSTAINABLE LIVING ENVIRONMENT FOR FAMILIES TO FLOURISH.

Project Data:

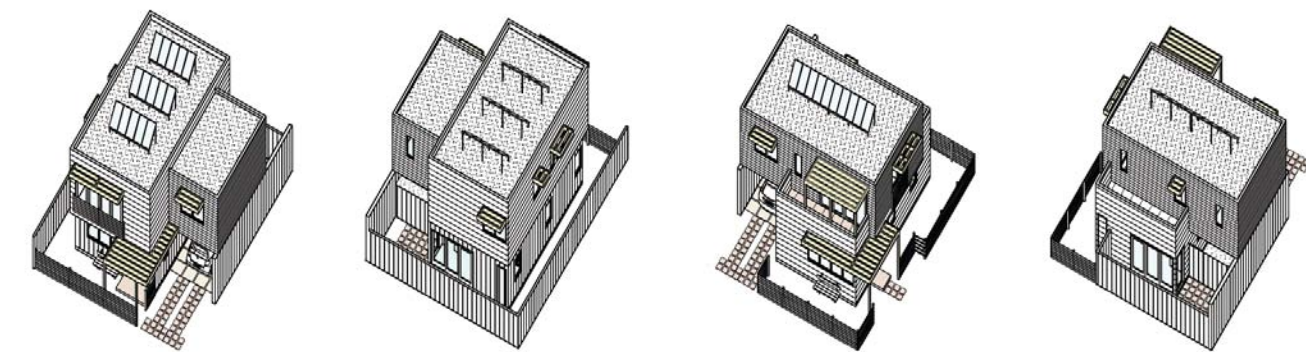
6 Home (26 du/ac) - Site Coverage 4,650 sq.ft. (47%) - Total Area 6,800 sq.ft - Hgt 22.5 ft.
(4) 3 Bedroom Homes @ 1,200 sq.ft. each + (2) 2 Bedroom Homes @ 1,000 sq.ft. each



Front Porch TRANSITION FROM PUBLIC TO PRIVATE



107624224-f5



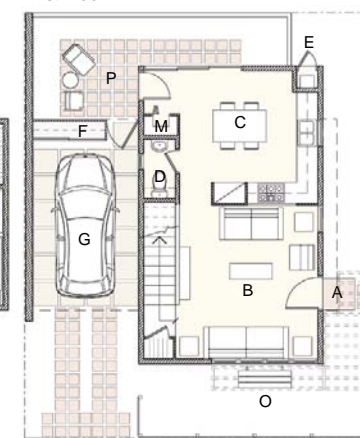
Three Bedroom Home: First Floor



Second Floor



Two Bedroom Home: First Floor



Second Floor



107624224-f5

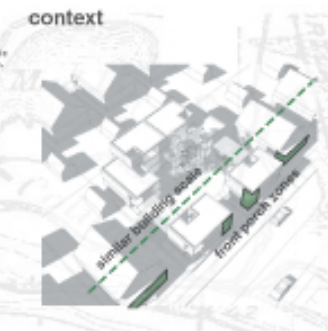
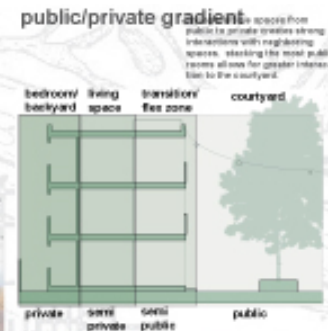
innerportland infill lot
100' x 100'

6 units

	street corner	center project	unit	total
Number	2	2	2	6 (+)
Footprint	733	655	688	4152
Coverage				42%
Floors	2	2	3	
Total sf	1496	1310	2064	9680
Height	24	20	30	

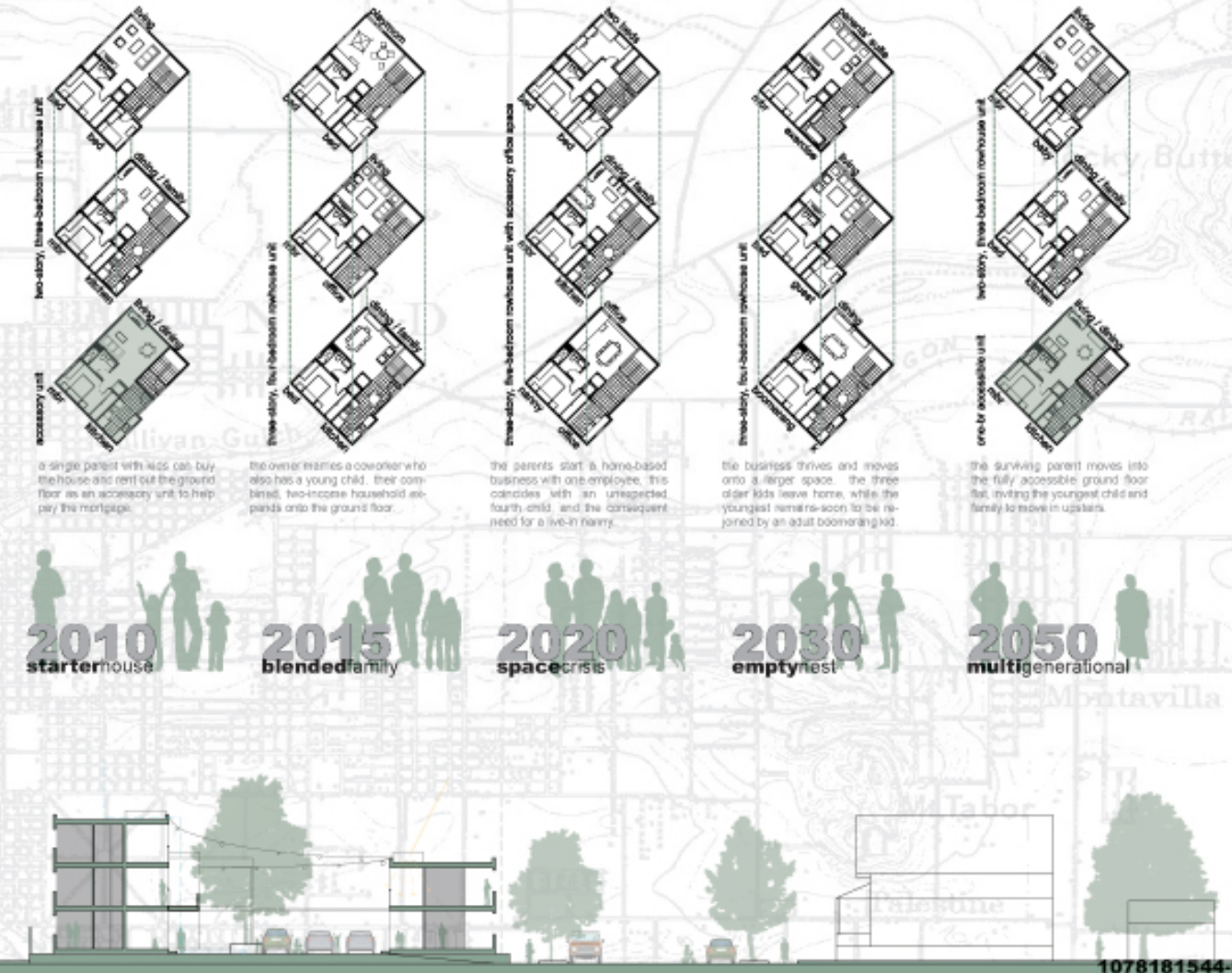
court>yard>house

COMMUNITY: a clear demarcation of the communal area, separated from street and dwellings. **PRIVACY:** the in-between layer can be fine-tuned for the desired degree of (dis)connection. **SUSTAINABILITY:** building evolution over time, enabled by circulation in the in-between layer. Variable unit sizes and uses, with very minor building fabric changes. Possible unit count between 6 and 18, or can include other uses. **ACCESSIBILITY:** all ground floors include bedroom. **AFFORDABILITY:** modest floor areas, any construction type (including conventional), surface parking. **DEVELOPER OPTIONS:** rental, fee-simple or condo ownership; unit count and mix can vary to suit.



futureproofing

families change over time, shouldn't their home do the same?



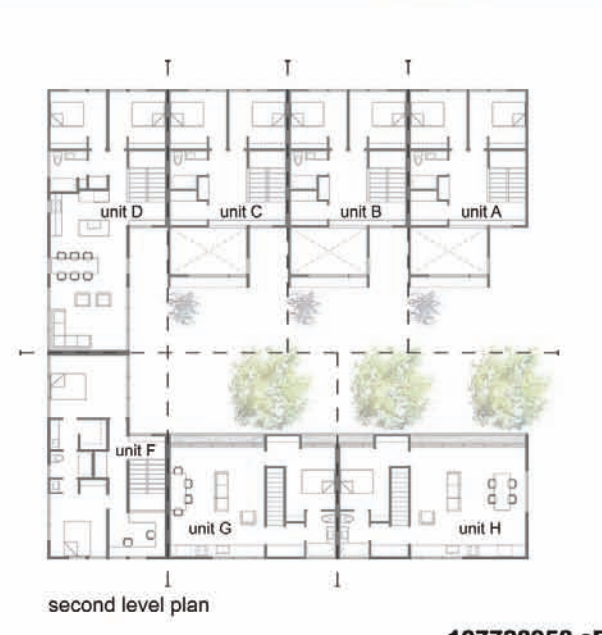
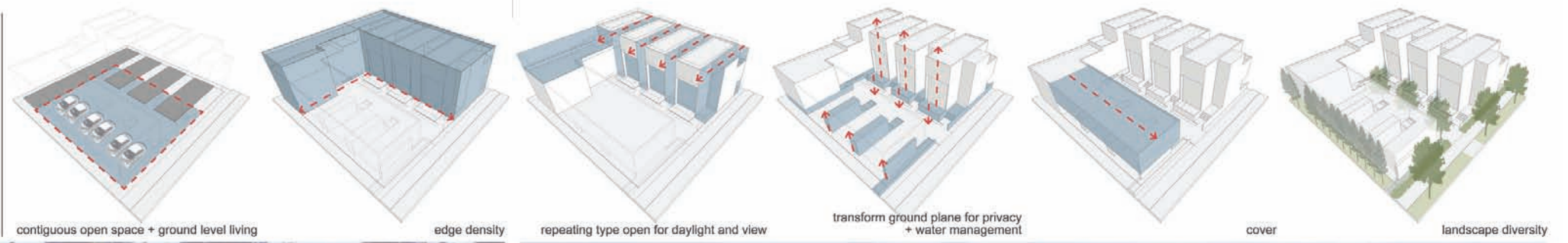
COURTSIDE

inner portland infill site

concentrates outdoor space into one contiguous court
defines both **shared** and **private** use areas
creates covered and open areas for **year-round** uses
concentrates parking to maximize at-grade living areas
all individual living areas front court
sectional ground variation for use and water management
constructed from a **repeatable**, family sized, building type
carved for daylight and views
flexible program and inhabitation strategies
building heights maximize daylight
story and program variation (demographic variation)

unit	sq.ft.in	sq.ft.out
A	2028	386
B	2028	386
C	2028	386
D	1796	322
E	834	173
F	1588	146
G	830	106
H	917	114
8 units	12049	2019

site coverage = 5806 sq.ft.
= 58 %
max. height = 34 ft.



107728958-sE

107728958-sE

INNER PORTLAND INFILL SITE THE PORTLAND 4-SQUARE HOUSE AND LOT SYSTEM

unit A (3-bedroom primary unit - west): 1,702 s.f.
unit B (3-bedroom primary unit - west): 1,702 s.f.
unit C (3-bedroom primary unit with flex space- north): 2,230 s.f.
unit D (3-bedroom primary unit - north): 1,755 s.f.
unit E (1-bedroom attached unit): 581 s.f.
unit F (1-bedroom loft unit): 652 s.f.

total s.f.: 9,317 s.f.
building coverage: 37% of lot

max. height: 31'-9"
total number of units: 6

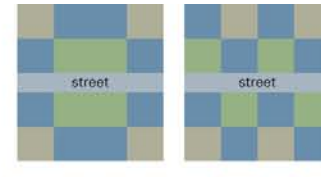


THE AMERICAN FOURSQUARE is an archetype of the American house. Well-known in Portland, the foursquare has inspired a new prototype for the courtyard housing concept: the Portland 4-square house and lot system. This system provides a contextually sensitive and sustainable approach to integrating higher densities into existing Portland neighborhoods.

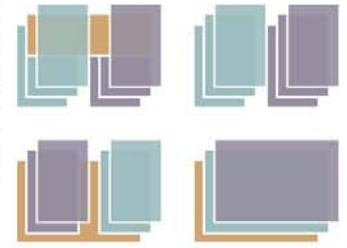
PORTLAND 4-SQUARE HOUSE AND LOT SYSTEM is based on the simple division of the square lot into 4 equal sections: a common green, a shared court, and a housing areas. This configuration maximizes green space while providing highly functional and flexible housing units, incorporating a diversity of housing types, establishes large multi-functional inter-connected courts, and successfully integrates parking requirements. The 4square system, with a potentially extensive network of courts and greens, enhances the pedestrian environment for the inhabitants and the neighborhood, provides a strong street orientation, and includes a large amount of usable outdoor space.



THE 4-SQUARE SYSTEM can be inserted into an existing site, or be patched together in a variety of patterns with other 4-square lots (see options at right) to create larger shared greens and linked courts. The arrangement of the individual squares is highly flexible and can be modified based on the number of available lots, neighborhood context, or desired unit configuration.



ADAPTABILITY is a hallmark of the 4-square housing prototype. Units can be sized and arranged in a variety of ways to respond to the desired density and mix of housing types. Single-floor accessible units could be provided at ground level with multi-story units above. Mother-in-law suites integrated into single-family homes could provide rental income for homeowners. The carriage house could be phased or multi-storied to increase density. The plans below illustrate four 3-bedroom primary units and two 1-bedroom units.



SUSTAINABILITY is an integral component of the 4-square system. Large greens promote natural storm-water management, permeable pavers are used at paths and drives, abundant windows provide natural lighting, LEED standards guide construction, and a community garden is available to residents.



PEDESTRIAN VIEW



AERIAL PERSPECTIVE



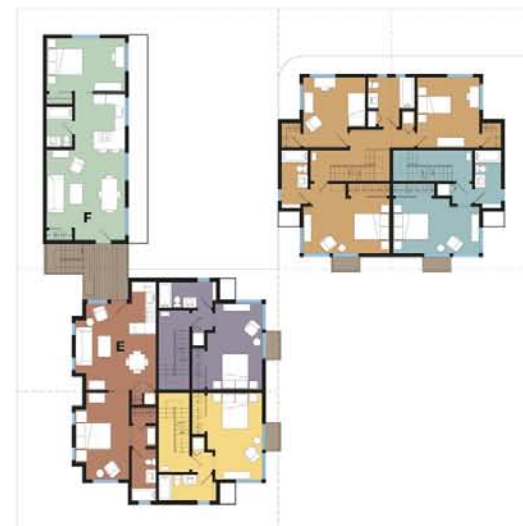
STREET ELEVATION



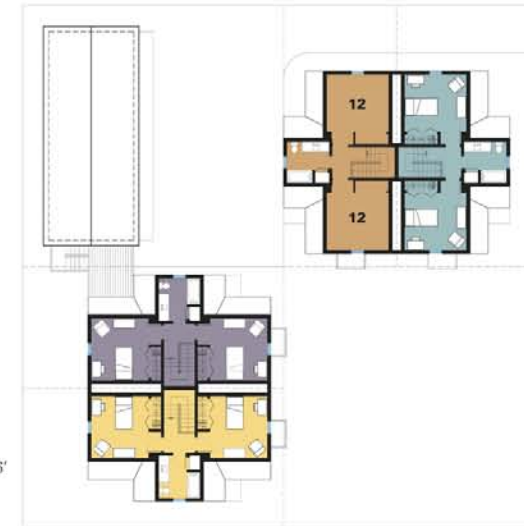
SITE/FIRST FLOOR PLAN

PLAN LEGEND

- A 3-bedroom Primary Unit
- B 3-bedroom Primary Unit
- C 3-bedroom Primary Unit with third floor unfinished/flex space
- D 3-bedroom Primary Unit
- E 1-bedroom Attached Unit
- F 1-bedroom Loft Unit
- 1 Sidewalk/easement/street
- 2 Common Green
- 3 Gazebo
- 4 Community Garden
- 5 Private Garden
- 6 Private Patio
- 7 Shared Court w/ landscaped border, four-square, hopscotch, and basketball courts
- 8 Bike/Stroller Storage
- 9 Stairs to Units E & F
- 10 Garages for Primary Units
- 11 Driveway
- 12 Unfinished/Flex Space



SECOND FLOOR PLAN



THIRD FLOOR PLAN

Courtyard Housing: HOUSING IN RESPONSE TO THE HUMAN LIFE CYCLE

Category: East Portland Infill Site

Our vision is to provide courtyard housing for children and families that fosters a sense of community, wholeness and well-being. We wish to provide children with the opportunity to witness the diversity of family composition, the connectedness of multiple generations, the wisdom of a transformable environment, and the values of sustainable living.

Our built environment should reflect our attitude as a society to learn from the past, understand the present and challenge the future. Therefore, our housing and communities must be dynamic, flexible and able to fulfill a multitude of purpose and function for all abilities. It is imperative that our environment educates by example, building affordable, healthy, stable and sustainable communities.

Data

Square Footage
Unit A 1661 ft²
Unit B 1331 ft²
Gatehouse 706 ft²
Cycle/Recycle 256 ft²

Total lot coverage 7,046 ft² / 17,100 ft² = 41.2% building coverage
Maximum height 27 feet
Total # of units: 8 primary units, which can each be subdivided for a total of 16



A Sustainable Community for

- Human Sustainability:** Support multi-generational living and opportunities for meaningful interaction.
- Economical Sustainability:** A home's layout is easily modified when the need arises, reducing remodeling costs and increasing marketability.
- Social Sustainability:** By designing flexibility into homes, one home remains appropriate for multiple life transitions. This promotes aging-in-place and contributes to more stable and sustainable communities.
- Cultural Sustainability:** Flexibility of housing enables continuity of cultural values, family structures and social fabric.
- Environmental Sustainability:** The built community should be an example, an educational tool and a means of shared dialogue with the neighborhood.
- Ecological Sustainability:** Strive to reflect balance, wholeness and connectivity in our community environment.



All Ages and Households,

Design should promote compatibility between people and their housing. The average household composition is becoming increasingly varied as our society becomes more diverse. The traditional household makeup has expanded to include:

- Nuclear families with children
- Elderly relatives and extended families
- Unrelated adults
- Caregivers
- Home businesses



All Changes,

- Human Life Cycle:** The amount of space that a household requires changes over time.
- Economic:** By allowing the dwelling to be divided in a number of ways, space can be rezoned as needs evolve and/or serve to generate income.
- Social:** The dwelling accommodates the diverse needs of a variety of family units, as well as allowances for disabilities, transitions or creative living solutions.



And All Abilities.

- Universal Design/Human Centered Design:** The rapidly aging American population and longer life expectancies are leading to a greater number of people with physical disabilities.
- By embracing the full spectrum of the Human Life Cycle, we can expand upon the traditional scope of Universal Design. This approach to designing environments results in homes that can better accommodate people's changing situations, varying spatial requirements and varying abilities.



Street Frontage Elevation



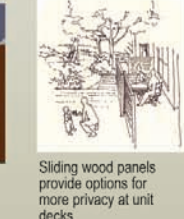
Street frontage features a sliding gate and screen fence with low wood panels (to 3' ht.) with taller steel frame, presenting a porous, pedestrian-scale screen for neighbors. Cars stopping to open gate before entering makes for a safer pedestrian zone.



Interior Courtyard Looking West



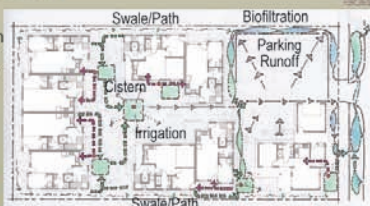
View into Common Green



Sliding wood panels provide options for more privacy at unit decks

Rainwater Re-use and Stormwater Treatment Train

Rainwater from roofs used for laundry, toilets



Cleansed water contributed back to Willamette watershed



Birdseye View from South

Central 'well': solar pump irrigates gardens with collected rainwater; overflow goes to central channel and helps cleanse parking runoff

Quiet seating/play area with sandbox or other soft play surface

Evergreens tie site in with neighborhood context and break down scale of denser development

Bioswale planted with sedges and rushes cleanses pollutants from parked cars; tool for teaching watershed health

Colored patterns in paving indicate priority of play space over vehicles

Parking Bays: Hardy groundcover and permeable paving with gravel joints allow storm water infiltration

Shared Court: a place for games, bicycles and shared community events such as block parties, movie nights, theatre or farmers' markets

Curb cut-outs allow water from street to flow into rain garden

Sliding gate at driveway

Dedicated Flex-car parking space

Entry gate for residents/access to mail room

Entrance to gatehouse for community functions

Rainfall garden with seatwall inviting passersby

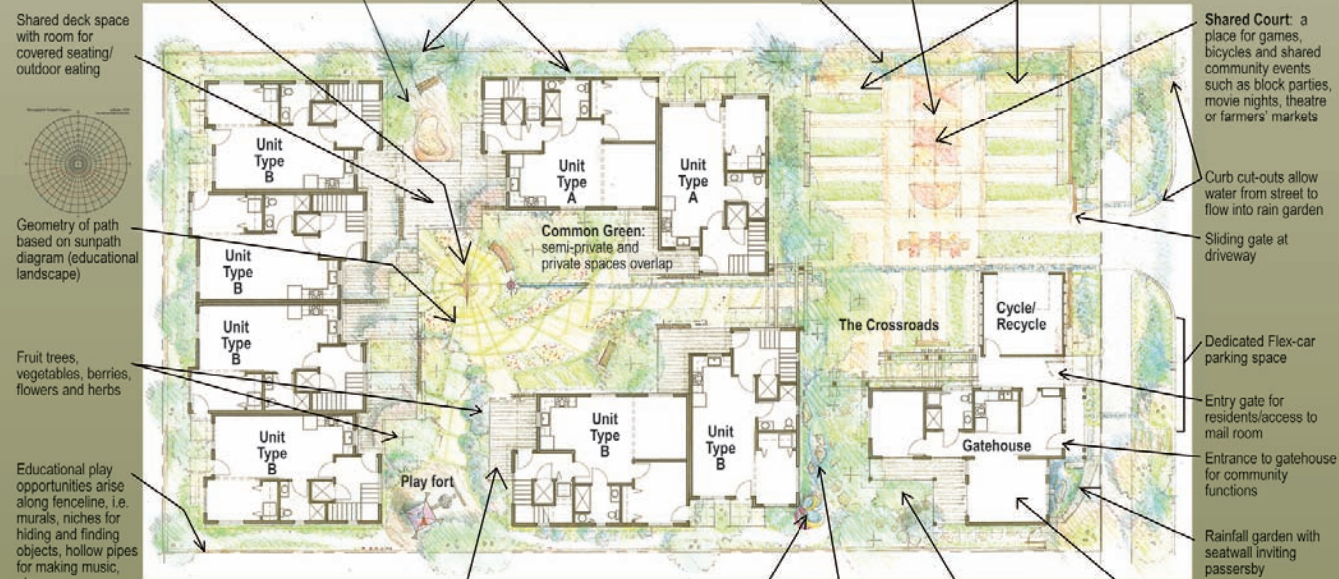
Demonstration greenroof

Quiet viewing garden for community and guests

Breided river channel water/playcape mimics overlaid flow patterns

Rain/Wind Sculpture stores water below ground; pump resurfaces water for interactive play

At-grade decks with cisterns for greywater use below



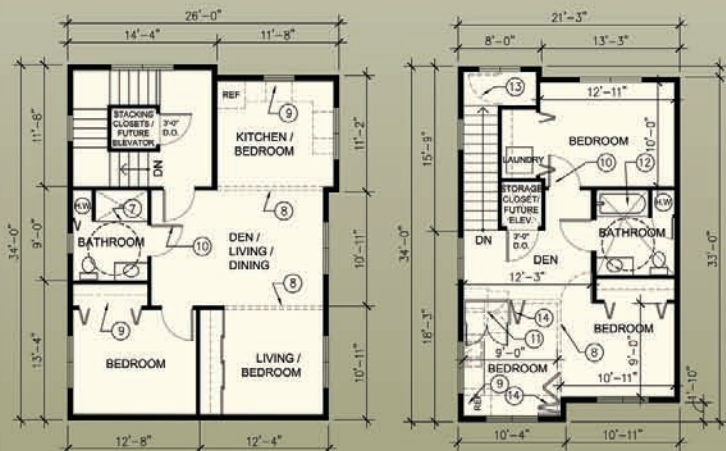
SITE PLAN

1/16" = 1 foot

Concept images: From "In the Hands of Wisdom," by Penny Bauer, in Angeles Arrien. *The Second Half of Life: opening the eight gates of wisdom*. Boulder: Sounds True, 2005. / Herbert Dreiseitl, Dieter Grau and Karl H.C. Ludwig, eds. *New Waterscapes: planning, building and designing with water*. Berlin: Birkhauser, 2011. / and Lara Jade.

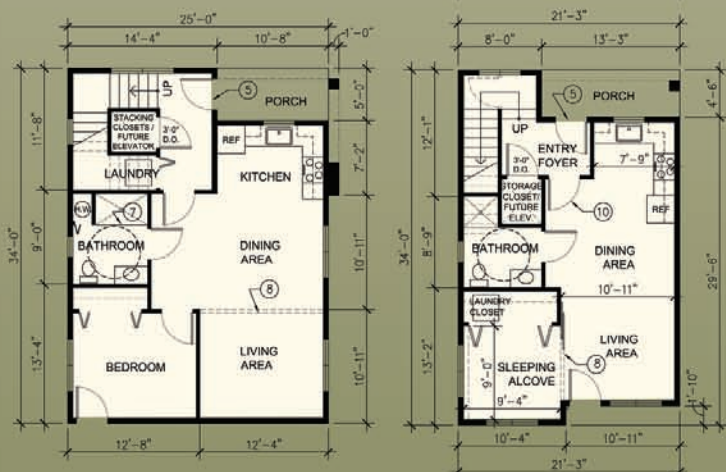
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FLEXIBLE DWELLING UNITS



UNIT TYPE A

1/8" = 1 foot



UNIT TYPE B

1/8" = 1 foot

CONDOMINIUM OWNERSHIP STRUCTURE - details:

- Each household owns title to their individual housing unit
- Condominium association manages and maintains shared courtyard, pathways, community buildings

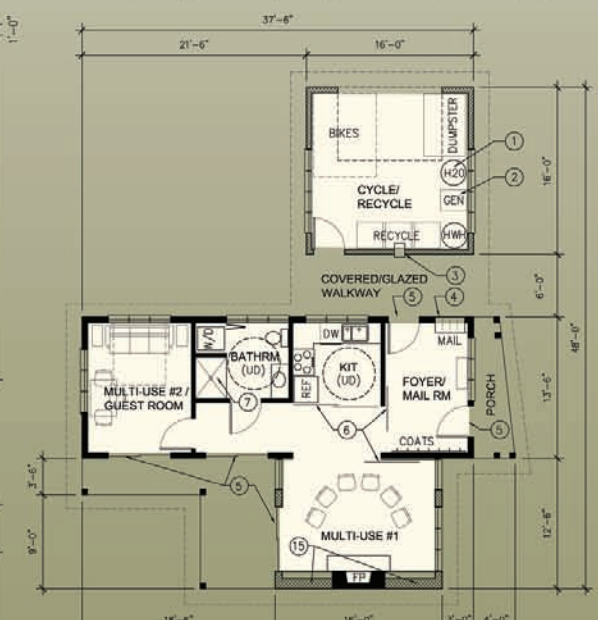
CONDOMINIUM RATIONALE:

- Quicker development period without lengthy subdivision process compared to fee simple development
- Greater flexibility for design and lifespan changes
- Provides governance structure for community amenities such as shared garden, barbeque, bicycle storage, and tool shed

GATEHOUSE / DEMONSTRATION HOUSE / SAFE HOUSE:

The Gatehouse is a place of welcome for both residents and neighbors. It is the front face to the neighborhood and therefore is low profile and residential in scale. It incorporates Universal Design throughout, and if the need arises, it can be:

- Income-generating by means of rentable meeting spaces for the community HOA
- A caretaker's residence
- A daycare or after school drop-in center
- Shared home-office center
- A Demonstration House for sustainable practices such as green building materials, passive solar, green roof and greywater recycling systems
- A place of social interaction and education
- Flexible, multi-functional
- A Safe House, providing the community and neighborhood with a place of emergency shelter.



GATEHOUSE

1/8" = 1 foot

Key Notes:

- Emergency water supply
- Emergency generator
- Paper recycle slot
- Two-way access
- Zero threshold
- Surface mounting sliding doors
- Curbless shower
- Optional flexible wall
- Roughed-in future kitchen
- Three-ft. doors, typ.
- Moveable closet
- Removable tub on curbless shower
- Optional secured door
- Folding partition
- Tromb wall



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Eastern Portland Infill Site

EASTERN PORTLAND INFILL SITE
A FAMILY'S DREAM HOME! Close to town without the usual sacrifices. This community of homes focuses on family features, larger floor plans, private yards, common open space, convenient parking and storage while promoting first cost affordability through appropriate density, conventional construction and lower life cycle costs through energy efficient design, day lighting and renewable onsite energy. The special features of this development include:

- Generous Shared Court - a safe play area for activities better served by hardscape
- Common Green - a safe play area for activities best accomplished on grass. This area also serves as part of the rain water management system
- Covered Arcade - a sheltered common area for socializing, playing and connecting to the greater community
- Green Entry Courts - a transitional space from public to private
- Private Yard or Deck - a contained and private outdoor space for family use for each home
- Flex Room - art studio, office, or multigenerational living space

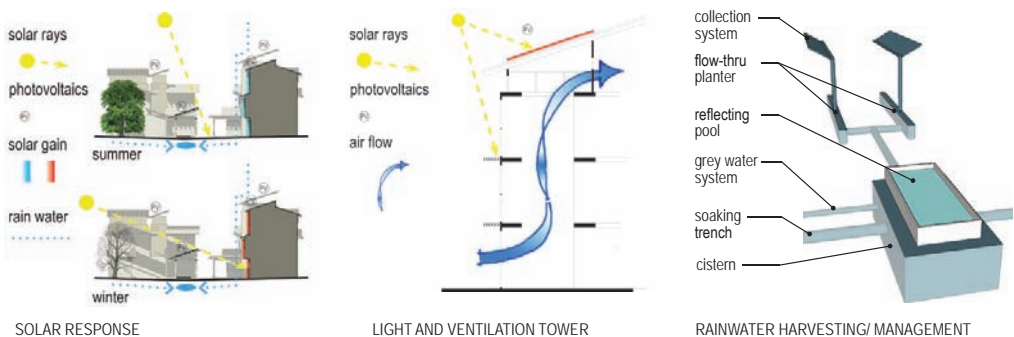
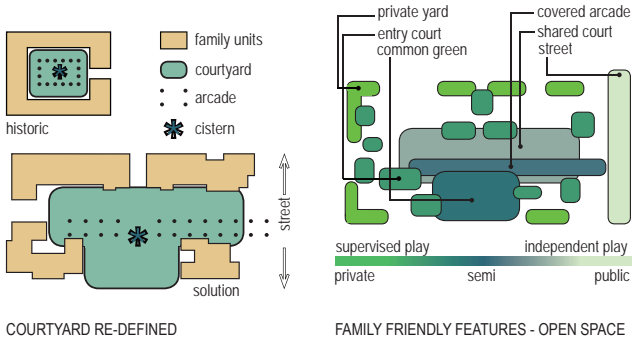
PROJECT DATA

40% Lot Coverage

Maximum Ht = 33 ft

No. of Units = 7

Unit A:	1522 SF
Unit B/ Br:	1561 SF
Unit C:	1577 SF
Unit D/ Dr:	1903 SF
Unit E:	1583 SF
Total	8146 SF
(Includes garage)	



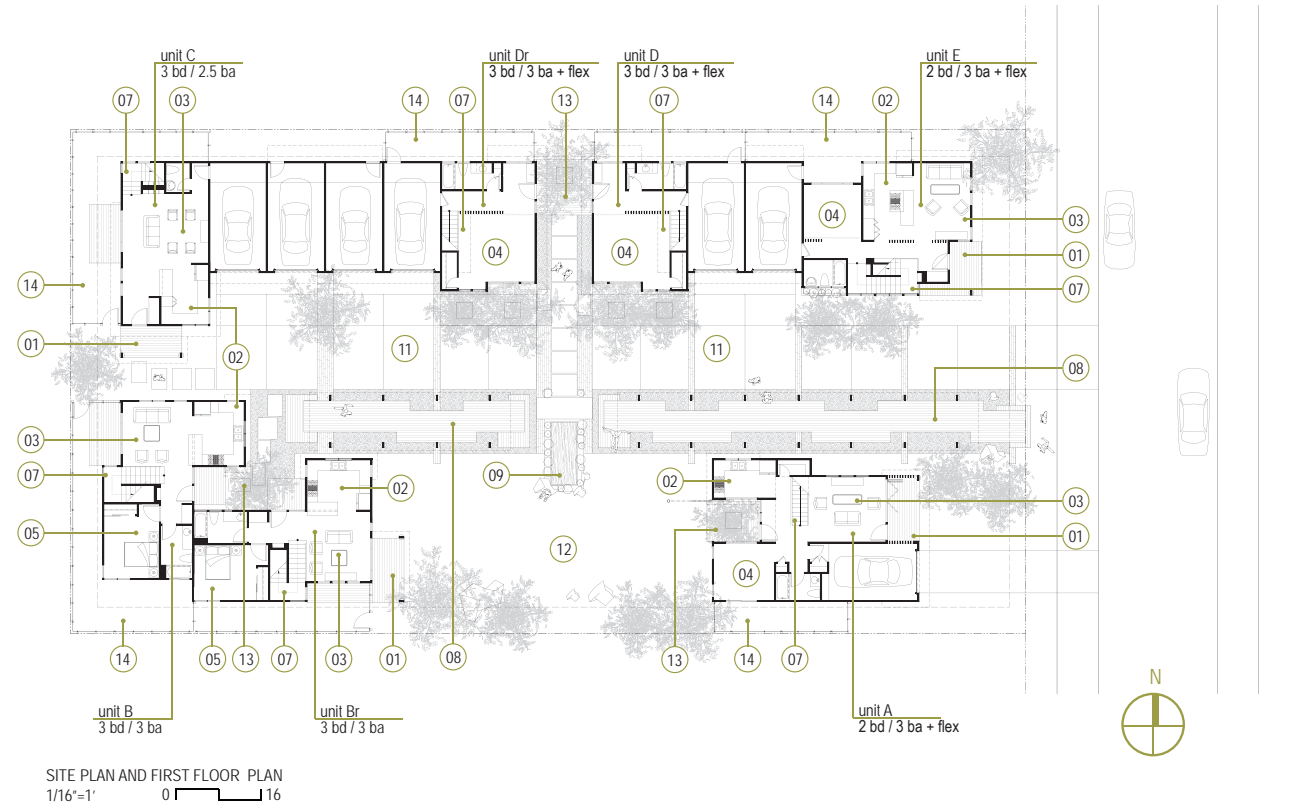
COURTYARD VIEW LOOKING NORTH



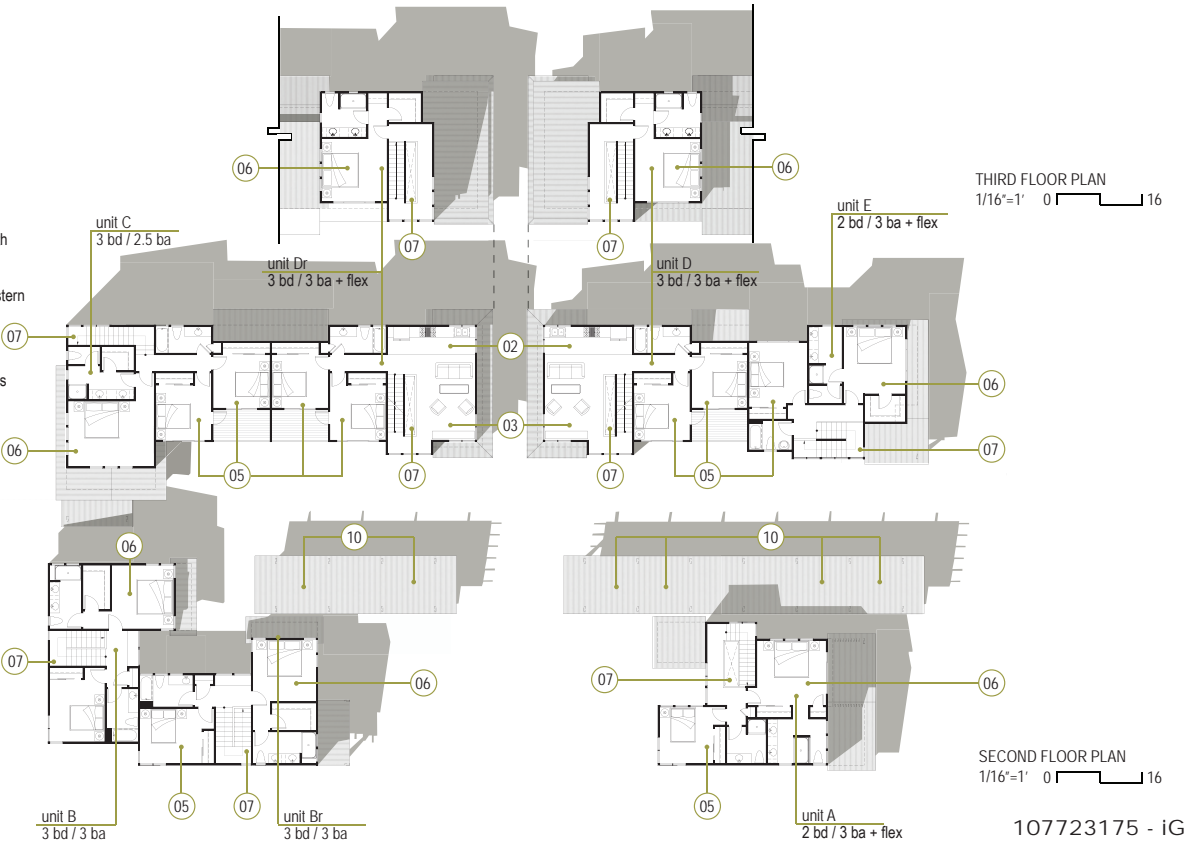
STREET VIEW LOOKING NORTH



VIEW ALONG COMMUNITY ARCADE



- 01. front porch
- 02. kitchen
- 03. living
- 04. flex room
- 05. bedroom
- 06. master bedroom
- 07. stair tower
- 08. community arcade with soaking trench below
- 09. reflecting pool with cistern below
- 10. photovoltaic
- 11. shared court - pervious pavement
- 12. common green
- 13. entry court
- 14. private yard





Eastern Portland Infill Site

Eastern Portland Infill Site

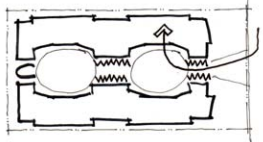
Family Matters: a New Model for East Portland

Eastern Portland neighborhoods are a disjointed mix of single family homes, irregularly subdivided lots, and multi-family infill developments. They feel like places in transition, with little in the way of context or clear urban pattern. This proposal seeks to set a better example for infill development that not only contributes to a pedestrian-friendly streetscape, but is more compatible with lower-density semi-urban neighborhoods and also provides **a better, safer environment for families.**

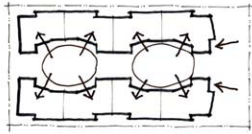
Floor areas: street end units = 1,910 s.f.; other units = 1,725 s.f. (includes garages)
Total area = 14,170 s.f. (includes garages)
Building footprint = 8,924 s.f. (0.52% lot coverage)
Total number of units = 8
Maximum height = 24'



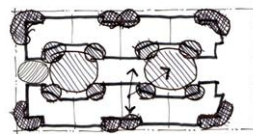
Typical Eastern Portland multi-family developments do not contribute to a lively public street scene, with entrances facing new internal streets meant strictly for cars.



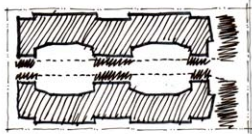
This proposal's **shared common space** accommodates pedestrian and play activity as well as vehicle access to garages. Narrow, single-width passages between courts, textured paving, and dense planting help to slow car traffic.



Individual units have **access from the central court**, while street-end units have their primary entrance facing the public street. The central court is divided into two large spaces, each providing access to four units.



A **variety of outdoor spaces** is provided, creating different types of play spaces, suitable for different age groups; the semi-public shared central court, semi-private stoops at unit entrances, and private protected yard spaces for each unit.



Green roofs filter and reduce stormwater runoff, which is then directed to water gardens and swales to manage stormwater on site.



The project fits into Portland's strong tradition of using **brick in multi-family residential architecture.**



Shared court looking east



View from the street

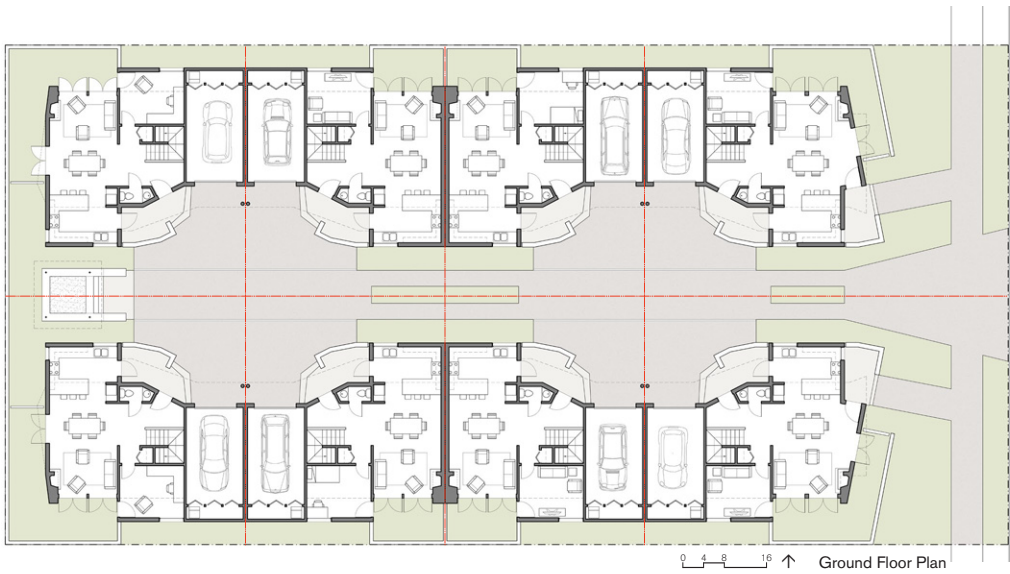


Interior

- ↑ End units have stoops and entrances that address the street, contributing to a pedestrian-friendly environment along the public street frontage.
- ← Outdoor spaces are observable from kitchen and living areas, allowing for supervision of children at play.
- A combination covered stage, sandbox, and social area at the end of the common court is shared by all the units.
- ↓ All eight units have three bedrooms, 2.5 baths, and a bonus room that can be used as a tv room, a bedroom, or an office.



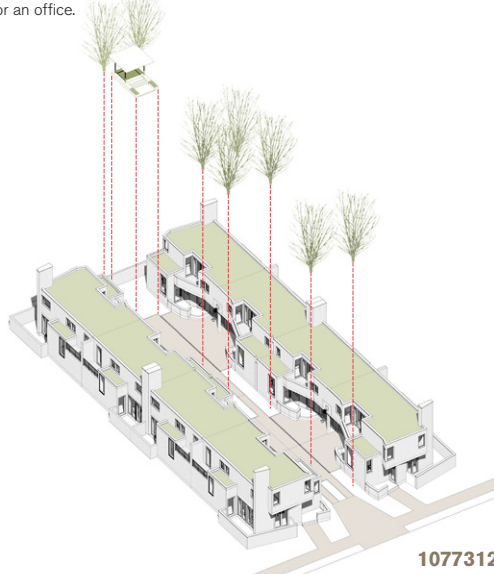
Covered play/social space



Ground Floor Plan



Second Floor Plan



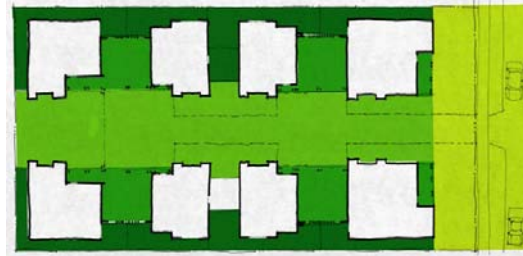
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EASTERN COMMON

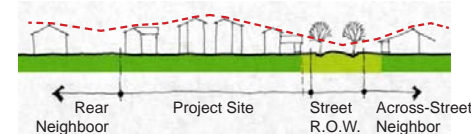
Eastern Portland Infill Site, R2 Zoning

To create a variety of functional, affordable homes for families, this proposal utilizes highly conventional materials (single hung windows, cement-board siding, composition shingles and a brick veneer base), carports (in lieu of finished garages) that dually function as covered outdoor auxiliary spaces and two-family buildings (which have simpler building code requirements than multifamily buildings).

8 Homes: (2) Type A, (4) Type B, (2) Type C
 Type A 1,351 enclosed sqft (3 bedrooms, 2 baths, 2 floors)
 Type B 1,890 enclosed sqft (4 bedrooms, 2.5 baths, loft, 3 floors)
 Type C 1,486 enclosed sqft (4 bedrooms, 3 baths, loft, 2 floors)
 Lot Coverage: 46.8% (includes porches and carports)
 Building Area: 13,234 enclosed sqft Max. Height: 31'-9" at Type B

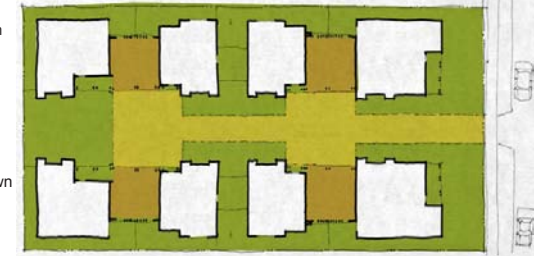


Public to Private
 A courtyard community featuring a range of elastic open spaces: open-ended carports and covered porches that expand the shared court and common green) allowing flexible and creative inhabitation of the range of public, semi-private, semi-private and private outdoor living opportunities (left diagram)



Context
 Recognizes the bungalow scale which dominates Eastern Portland, providing a single-story presence along the street front, three stories in the middle of the site and returning to the two-story single-family scale at the rear (diagram above)

Pedestrian / Vehicular Allocation
 Treating the car as the occasional visitor, the shared court is designed to function as a multivalent space for varied activities, supporting pedestrians first. Paved, planted, lawn and drivable turf areas allow a range of uses (right diagram)



STREET PERSPECTIVE - FACING WEST



SHARED COURT ELEVATION



STREET ELEVATION



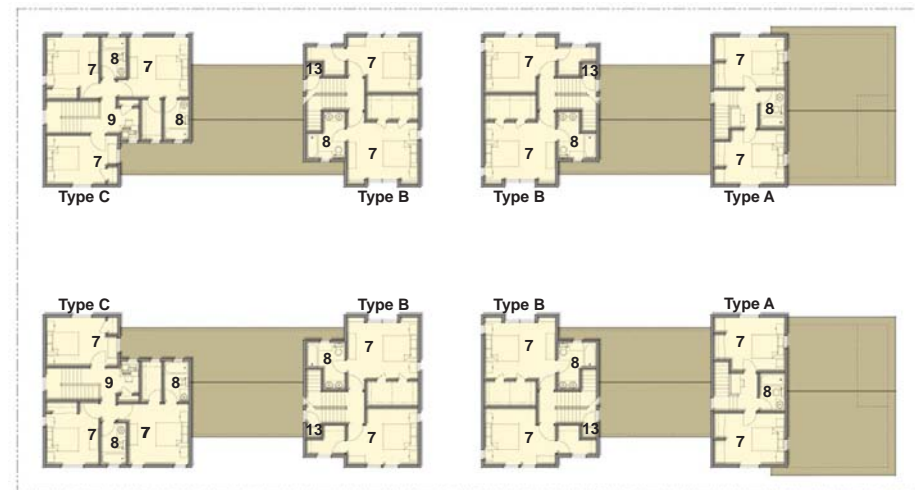
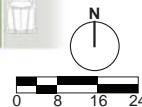
SHARED COURT PERSPECTIVE - FACING EAST



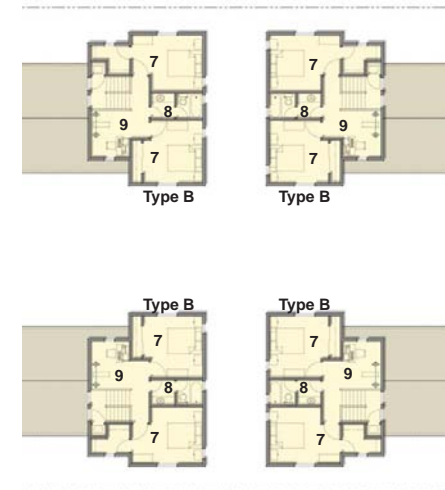
LEGEND

- | | | | |
|---------------|--------------------------|--------------------------|--|
| 1 Front Porch | 5 Carport | 9 Computer Loft/Playroom | 13 Laundry |
| 2 Living Room | 6 Private Patio | 10 Shared Court | 14 Stormwater Planters |
| 3 Dining Room | 7 Bedroom | 11 Common Green | 15 Drivable, permeable lawn adjacent to paving |
| 4 Kitchen | 8 Bathroom/Half Bathroom | 12 Playscape | 16 On-Street Parking |

SITE PLAN / FLOOR 01



FLOOR 02



FLOOR 03

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