



Innovative Housing Policy

Fostering, Equity, Affordability, & Climate
Positive Housing

AIAO Small Firms Roundtable
May 5, 2022

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FORAGE DESIGN & PLANNING



Making Green Design Accessible, Equitable, & Within Reach

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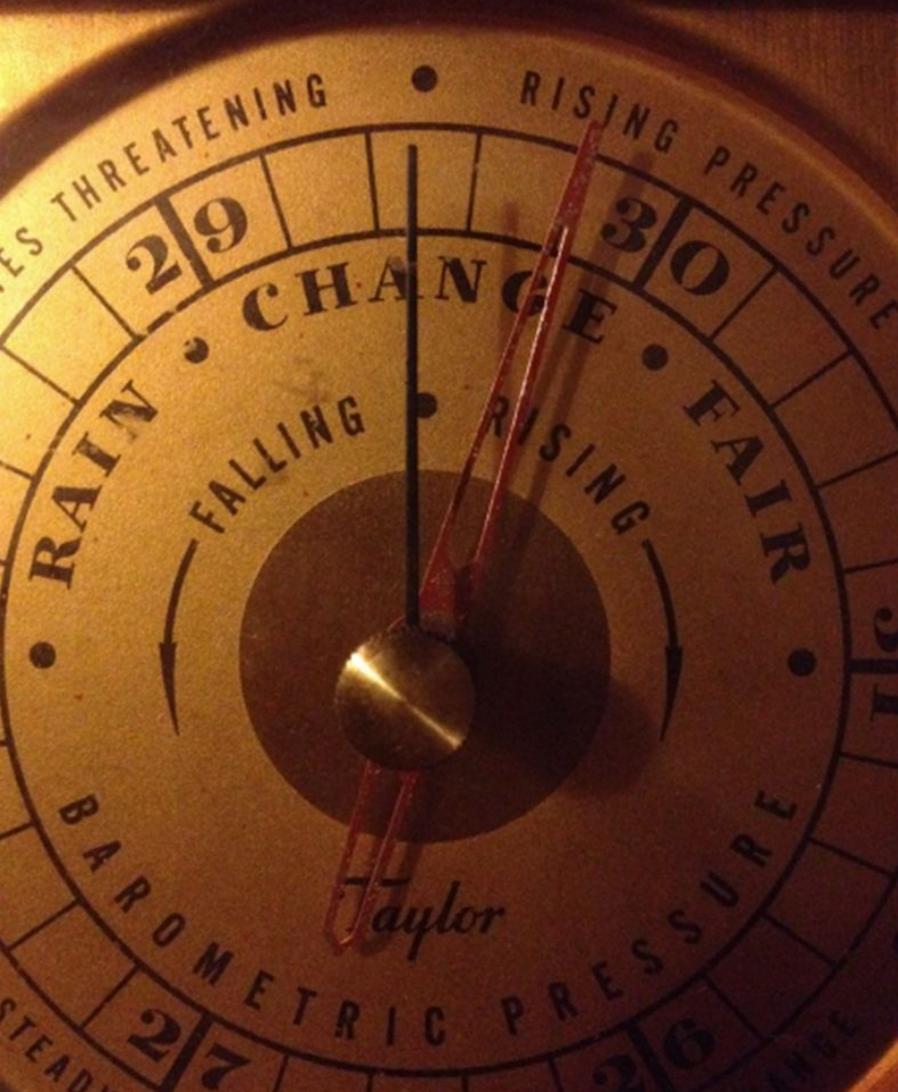
URBAN PLANNER + ENVIRONMENTAL DESIGNER

Heather Flint Chatto

Heather Flint Chatto is the owner of Forage Design & Planning bringing more than 22 years of project management, urban planning and design expertise to foster innovative efforts, environmental education and design literacy.

Heather is a two time Woman of Vision Award Winner from the Daily Journal of Commerce.





Looking toward the future

- How do our cities and spaces change and how does this shift to adapt for climate change?
- What does that mean for designers today?
- What tools and resources do we need to scale our impact?
- How we plan and design for resiliency and greater equity?



Scaling Up

Adaptive Approaches

Greening existing
development



Scaling Up

Leverage growth to integrate green infrastructure in new buildings

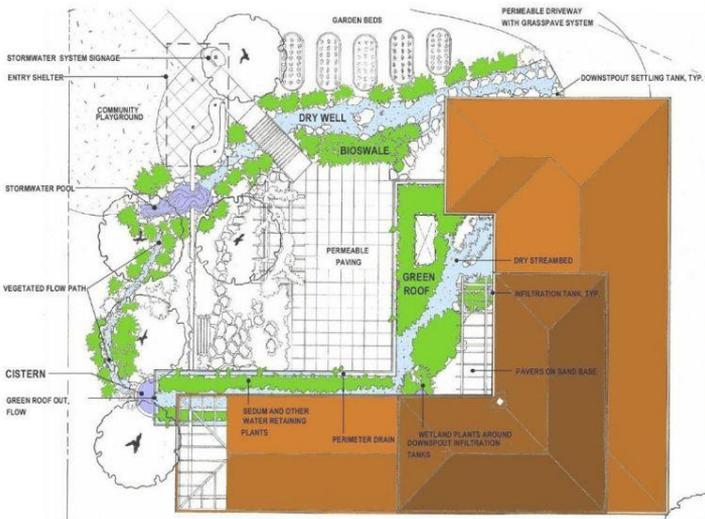
- Financial Incentives
- Technical Assistance Programs
- Leverage messengers & advocates





Who'll Stop the Rain?

The Eugene Stormwater Demonstration Home is a model of sustainable living, featuring a green roof, rainwater harvesting, and permeable paving. The home is designed to capture and manage stormwater, reducing runoff and improving water quality. The green roof is a key feature, providing a natural habitat for birds and insects, while also reducing the building's energy consumption. The rainwater harvesting system captures water from the roof and stores it in a cistern for use in the home. The permeable paving in the driveway and walkways allows water to infiltrate the ground, reducing runoff and recharging the local aquifer. The home is a testament to the power of sustainable design and the importance of water conservation.



Eugene Stormwater Demonstration Home

Project Manager, Habitats Inc Green Roof

FORAGE DESIGN | GREEN ROOF SYMPOSIUM 2022



SeQential Biofuels EcoFueling Station

Project Manager, Habitats Inc | Winner, Colleagues Choice Award

FORAGE DESIGN & PLANNING

NEW BUILDINGS INSTITUTE

Zero Energy Buildings Innovation | Eco

5 GREAT NEW TOOLS FOR ZNE BUILDINGS

1 ZNE Message Platform

Key messages for target audiences on the what and why of ZNE.

2 "Intro to ZNE" Presentation

Customizable powerpoint presentation provides an overview of California's goals and policies for ZNE, key strategies, and case study examples.

3 ZNE Companion Guide/Fact Sheets

Collection of FAQs, resources, design strategies, and key messages for designers, commercial building owners, policymakers, and decisionmakers of schools and public buildings.

4 Case Studies: ZNE & Ultra-Low Energy Buildings

Read about ZNE and ultra-low energy building examples, including design strategies, costs, and lessons learned.

5 ZNE Action Bulletin

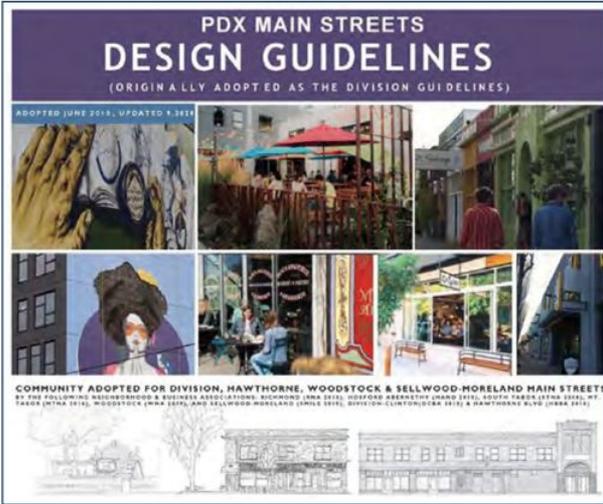
Sign up for our quarterly e-newsletter for updates on ZNE news, events, trainings, case studies, planning, policy, and research. To sign up, or to get more info about the toolkit, email heather@newbuilding.org.



www.newbuildings.org/zne-communications-toolkit



Example above: Zero Net Energy (ZNE) Communications Toolkit for the California Public Utilities Commission, developed by Heather Flint Chatto with NBI and grant funding



City of Hoquiam Downtown & Olympic Stadium Revitalization Plan

DRAFT | APRIL 2021

MASTER PLAN RECOMMENDATIONS





LEEVE READY COLUMBIA
2020-2024

COMMUNICATIONS ROADMAP

Forage Design | CLA | Samson Consulting

Communications Roadmap Levee Ready Columbia



Awareness & Flood Safety | Initiatives

Note: Additional awareness raising ideas in the Roadmap document, those are samples for discussion.

Grant-funded projects to increase knowledge and value of levees and district

Project	Rationale	Timeline
 <p>A. Wayfinding & Signage <i>Signs make it clear where you are in the floodplain, history of people and place, high-water levels, etc</i></p>	<ul style="list-style-type: none"> Limited visibility of levees to larger public High-impact: reaches all floodplain Reminder of danger, role of District & need for planning Local partnership opportunities 	<p>2020 - Grant writing 2021 - Project planning and sign design, tie-in branding 2022-3 - Permits, fabrication, installation</p>
 <p>B. Self-guided tour of the Floodplain <i>Develop an app that introduces the floodplain and levees including history, environment, trails, flood safety messages, etc</i></p>	<ul style="list-style-type: none"> After initial development costs, relatively low cost for high awareness value Multi-lingual, easily accessible for all audiences Option to integrate with signage and trail wayfinding markers 	<p>2020 - Grant writing 2021 - Create App 2022 - Launch with District kick-off</p>
 <p>C. Flood Simulation <i>Online flooding simulation and/or VR roadshow to increase awareness and value of levees and role of district</i></p>	<ul style="list-style-type: none"> High emotional impact Available to anyone w/computer Multi-lingual Regional reach (ex. received 80k views) 	<p>2022 - Find simulation firm, create proposal 2023 - Create & launch coordinated w/board</p>



Awareness & Flood Safety | Future Initiatives

Grant-funded projects to consider after the initial founding of the district

Project	Rationale	Timeline
 <p>D. Levee Leadership Program <i>Docents, rangers, awards for community leadership in floodplain stewardship, small grants program</i></p>	<ul style="list-style-type: none"> Foster a sense of protective, prepared and collaborative responsibility in organizational and community culture Support and honor individuals and community groups doing creative floodplain leadership 	<p>2021 - Grant writing 2022 - Develop leadership programs 2023 - Call for grants 2024 - Launch leadership awards</p>
 <p>E. Long-Range Strategic Plan for the Flood Plain <i>A landscape master planning process involves the public in site assessment, programming, priority setting, and large scale visioning. May include Arts Master Planning & watershed plan</i></p>	<ul style="list-style-type: none"> Opportunity to integrate planning required for a Watershed Enhancement Plan Use the framework of green infrastructure planning as a compelling way to represent the ecological, economic, and social values of the managed flood plan 	<p>2021 - Grant writing 2022 - Hire planning consulting team and plan public process 2023 - Public visioning event & plan development</p>
 <p>F. Arts Master Plan <i>A landscape master planning process involves artists and public for beauty, wayfinding, history and nature</i></p>	<ul style="list-style-type: none"> Enhance levee/ floodplain visibility, media and public engagement, and Watershed Enhancement. 	<p>2021 - Grant writing 2022 - Hire team 2023 - Implement</p>

We need more innovative Models to demonstrate green and affordable housing solutions



JOLENE'S FIRST COUSIN | COMPLETED 2020

2828 SE GLADSTONE ST.

A community-backed solution to homelessness in Portland built without a penny of public subsidy.

Jolene's First Cousin is a mixed-use development in the heart of the Creston-Kenilworth neighborhood. The smartly-designed pair of buildings house five market-rate units (three retail and two rental apartments) and an 11-bed communal living unit, called a single-room occupancy (SRO). The SRO is leased by a Portland housing non-profit called [JOIN](#) that has been helping homeless people find places to live for over 25 years. They will sublease each of the rooms to folk in their network who are currently struggling with homelessness.

[Guerrilla Development](#) created Jolene's First Cousin because we felt we owed it to our city and to our citizens to find sustainable solutions to one of Portland's most pressing issues. It's our way to using our toolkit (real estate, finance, and design) to solve a major problem facing our neighbors and our communities.



**How do we
foster green,
affordable &
innovative
housing?**

***PDX Main Streets Housing Workshop on Advancing Adaptive,
Green, Affordable Housing, 2015***

Photo by John Dornoff, PDX Main Streets



Setting the Vision

- Measure to Manage
- Get the Data
- Long Range Master Planning
- Create the Pilots
- Make green buildings and innovation accessible



ARTbarnARTfarm EcoHousing



ARTfarm Conceptual Design Plan

FORAGE DESIGN | PROGRESSIVE DEVELOPMENT GROUP

Tiny House Artist EcoVillage
 TRANSFORMING A 20,000 SF SINGLE FAMILY RESIDENTIAL
 PROPERTY IN SE PORTLAND INTO TINY HOUSE LOW-
 INCOME ARTIST HOUSING

- TINY HOUSES
- BATHROOMS & SHOWERS
- COMMON SPACES (Office, Kitchen, Living Room, Storage, Laundry)

- NEW AMENITIES**
- STORMWATER CISTERN & GREEN ROOF
 - COMMUNITY KITCHEN, COMMON ROOM, SHOWERS, BATHROOMS, STORAGE, DECKS, HOT TUB, SAUNA, AND SHARED OFFICE/LIBRARY
 - GREEN SPACES, RAISED GARDEN BEDS, FRUIT TREES, COMMUNITY MARKET STAND, FIREPIT, BENCHES, GAZEBO, AND ART GARDEN

Innovative Housing Demonstration Pilot (IHDP) Policy

Need: Until permanent ordinances regarding innovative housing projects can be implemented, there is a need to allow a limited number of regulated innovative housing projects.

Action: Drawing on existing policy precedent, create a pathway to remove barriers that exist to a variety of alternative housing types that provide both greater affordability and environmental innovation.

A small set of pilot projects would help:

- test innovative housing models,
- evaluate code issues, and
- demonstrate viability with low risk.



This demonstration approach will increase the availability of built examples that model social, financial and environmental innovation in Portland neighborhoods.

Precedent: City of Redmond, WA

Innovative Housing Demonstration Projects (IHDP) Policy

Redmond Code

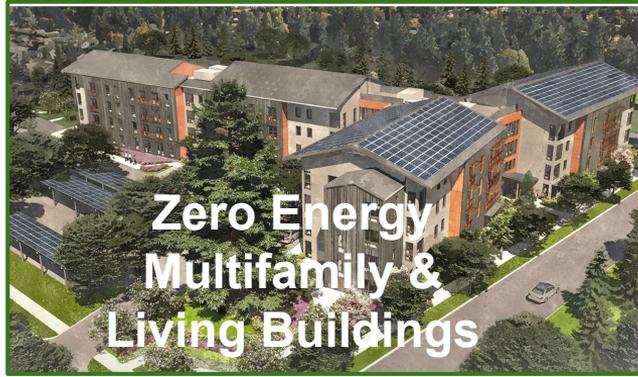
<https://www.codepublishing.com/WA/Redmond/CDG/RCDG20C/RCDG20C3062.html>

Policy Highlights

- **Allows for 5 alternative housing projects** via an application process
- **Purpose:** Increase affordable housing supply, and demonstrate innovation in more diverse housing types, sizes and income mixes
- **Allows flexibility in site and design standards** to support and test models
- **Process to identify potential zoning code changes** to support more innovation
- **Outlines submittal & review requirements**
- **Evaluation report provision**
- **5 yr. sunset clause**

Innovative Housing Demonstration Pilot (IHDP) Examples

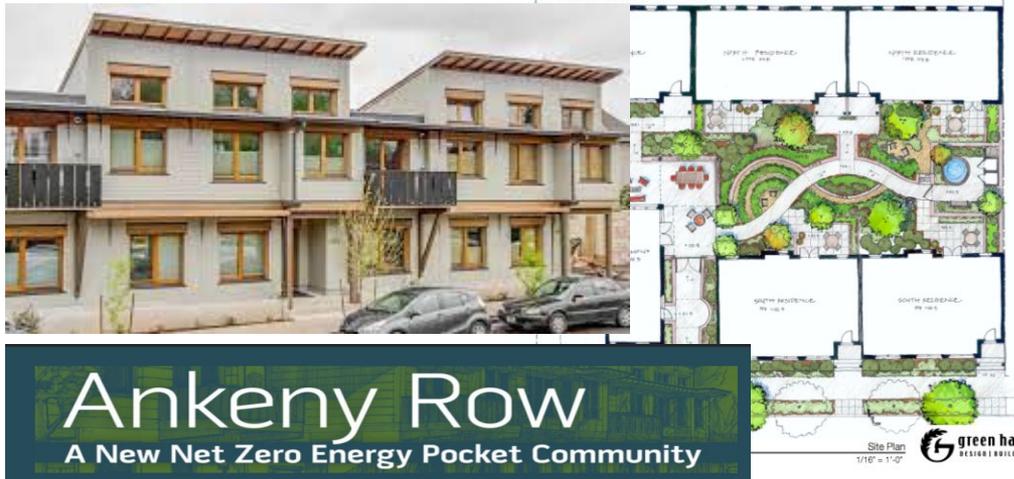
We need more innovative housing models for affordability, equity, and climate responsive design. These are possible now, yet unnecessary barriers prevent wider application.



INNOVATIVE HOUSING TYPES

Environmentally Innovative

- Zero Energy Buildings
- Zero Waste Buildings
- Passive House
- Living Buildings



INNOVATIVE HOUSING TYPES

Environmentally Innovative

- Zero Energy Buildings
- Passive House
- Living Buildings
- **Zero Waste Buildings**



27-story high rise featuring 293 units. The building is the first of its kind to receive a LEED Gold Certification from the US Green Building Council. Incorporating multiple green components, including solar energy, roof gardens and a membrane bioreactor-based wastewater treatment and recycling system installed in the building's basement. The system was the first urban, residential treated wastewater reuse application permitted in the USA.

<https://www.waterworld.com/international/desalination/article/16200715/nyc-highrise-reuse-proves-decentralized-system-works>

**Hassalo on 8th,
Portland**

INNOVATIVE HOUSING TYPES

Affordable/Cooperative/Socially Innovative

- Cohousing

- **Community Land Trusts**



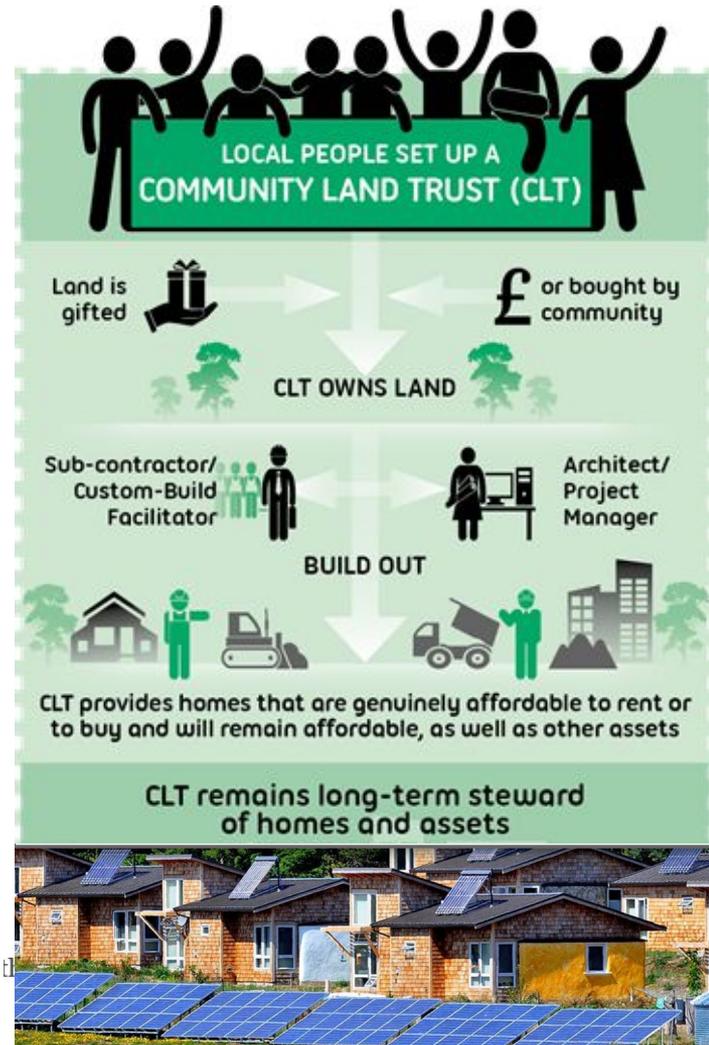
4. Perpetual Affordability:

The CLT retains the option to repurchase the structures located on the land. The CLT is committed to preserving the affordability of housing and other structures.

Lopez Community Land Trust

Sustainable families and homes for a better future

Lopezclt.org



INNOVATIVE HOUSING TYPES

Sustainable Economic Development & Food Access | **Equitable Food Oriented Development (EFOD)**

While conventional food systems work and Transit Oriented Development (TOD) may unintentionally cause harm to communities through gentrification, displacement, or extraction of local resources, EFOD instead fosters strong social capital networks, equitable asset development, increased civic engagement, and decreased displacement.

Learn more: *The Kresge Foundation, released [Equitable Food Oriented Development: Building Community Power](#)*



EFOD: THE POWER OF FOOD-BASED COMMUNITY DEVELOPMENT | Ashland Market & Cafe, 80+ affordable housing units (Oakland, CA)

Long-time community organization Mandela Partners worked alongside local residents and stakeholders to develop the Ashland Market and Cafe, a 2,100-square-foot food hall, incubator, and community space on the ground floor of an affordable housing complex. The project was catalyzed in partnership with a resident-led advisory committee that eventually selected four local food entrepreneurs as the facility's inaugural tenants. Ashland Market & Cafe vendors live in the surrounding neighborhoods and sell foods that reflect their heritage and family histories. To support and encourage community-based entrepreneurship, kiosks rental rates are kept well below market and tenants are offered business development workshops, micro-loans, and legal assistance. Ashland Market & Cafe was funded using an innovative, mix of financial instruments including revolving loans, \$360,000 in federal Healthy Food Financing Initiative funds, and \$1.3M in public and private investments.

ARTbarn | ARTfarm

Tiny House Living

Compact, low-impact, affordable

(Images from Art Farm existing Tiny House on Wheels)



Sleeping Loft



Galley kitchenette



Comfortable and compact



Water closet with composting toilet



Greywater planter (precedent)



ARTbarnARTfarm EcoHousing



ARTfarm Conceptual Design Plan

FORAGE DESIGN | PROGRESSIVE DEVELOPMENT GROUP

Tiny House Artist EcoVillage
 TRANSFORMING A 20,000 SF SINGLE FAMILY RESIDENTIAL
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NEW AMENITIES

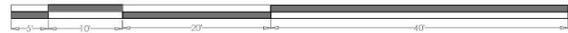
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ARTfarm | Existing Site Plan

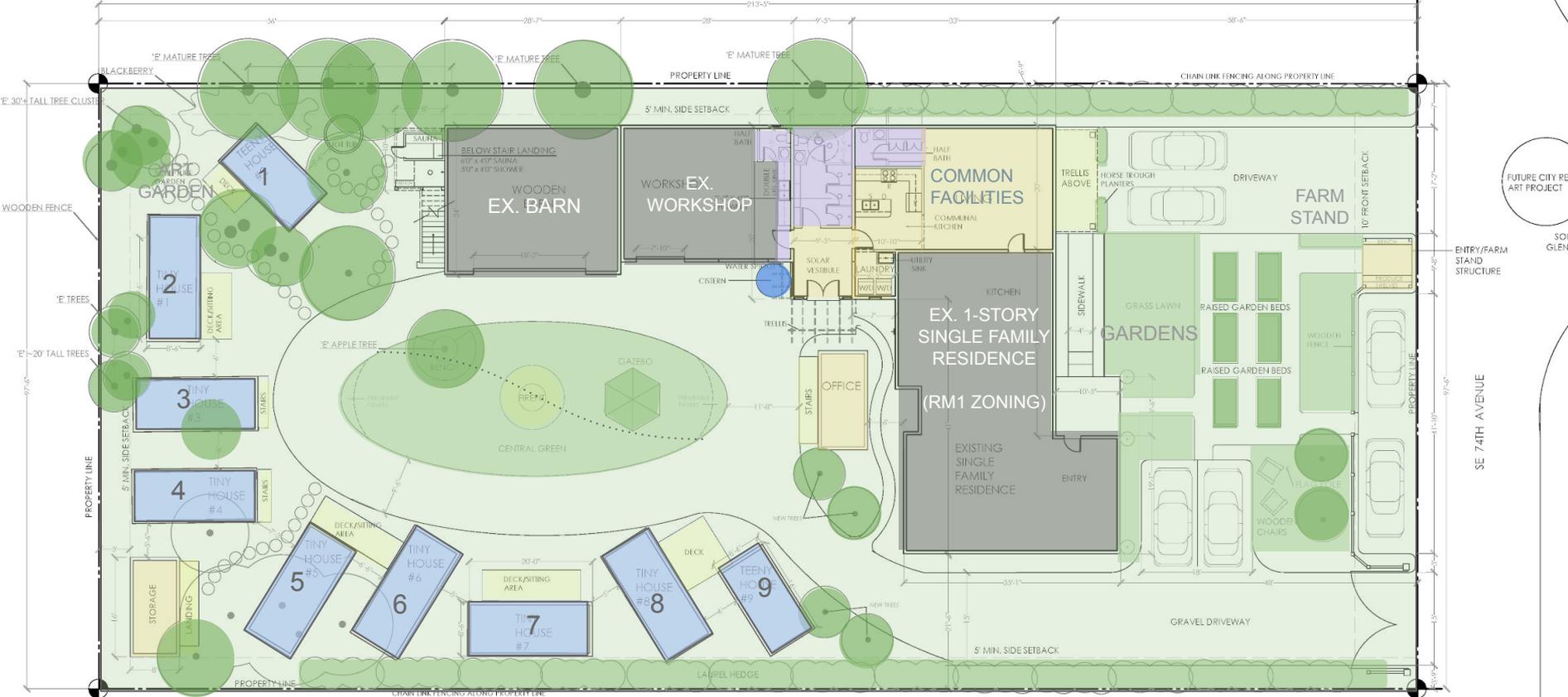


EXISTING SITE PLAN

SCALE= 1/16" = 1'-0"



ARTfarm | Existing Site Plan



ARTfarm Conceptual Design Plan

FORAGE DESIGN | PROGRESSIVE DEVELOPMENT GROUP

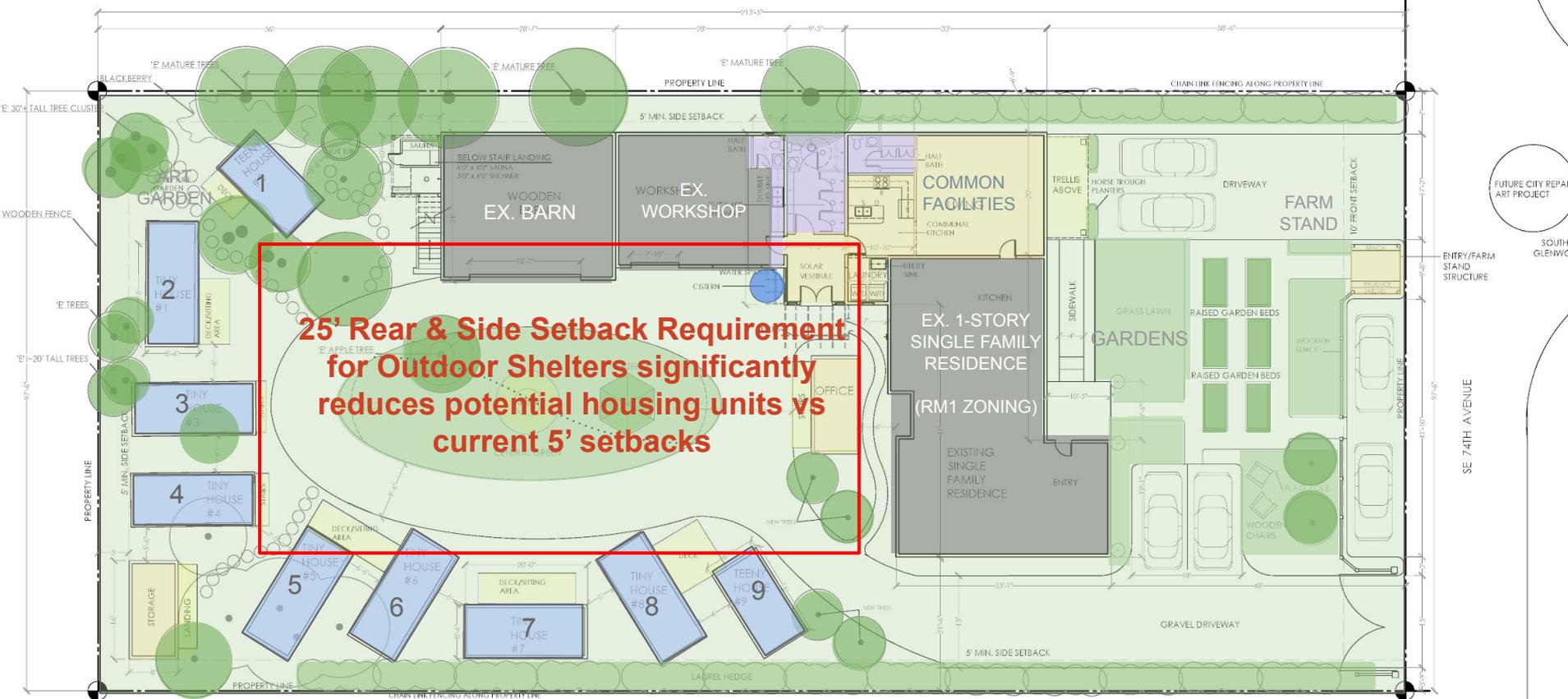


- TINY HOUSES
- BATHROOMS & SHOWERS
- COMMON SPACES (Office, Kitchen, Living Room, Storage, Laundry)

FUTURE CITY REPAIR ART PROJECT

SOUTH GLENWOOD

SE 74TH AVENUE



ARTfarm Conceptual Design Plan

FORAGE DESIGN | PROGRESSIVE DEVELOPMENT GROUP



- TINY HOUSES
- BATHROOMS & SHOWERS
- COMMON SPACES (Office, Kitchen, Living Room, Storage, Laundry)

Tiny Homes on Wheels Cluster Housing

Benefits

- Increases equity and accessibility of who can own/build/create housing
- Provides much needed low-cost housing with greater flexibility at a price point and market category currently missing
- Adds to diversity of affordable housing choices (both rental and owned)
- Low-impact development infill
- Adds density that fits in with existing residential neighborhoods - turns more neighborhoods into density supporters with positive examples
- Transitional development approach on the housing continuum
- Housing dignity for low-income residents is not only gained but a source of pride in their uniqueness
- Makes home ownership much more in reach for many more people



Tiny Homes & Affordability

-fraction of cost of typical housing

-increases availability of sites and providers to partner in the solution

- adds to the diversity of housing choices in an expedited low-impact way

- increases pathway to ownership model

that spaces are designed to be multi-purpose. Additionally, because tiny homes are generally so much more personalized than traditional homes, you really do get more bang for your buck, so to speak, in terms of usage. Plus, a smaller price tag means less loan interest to pay; it's not uncommon for mortgage holders to end up paying an additional 50% of what their home is worth in interest alone.

- 60% of tiny homeowners have no credit card debt.
- On average, a tiny home costs less than one-fifth what a traditional home would cost.
- The average sales price of a newly-built single-family home is \$383,900.
- The average listing price of a home on Zillow is \$275,000.
- The average cost of a built-to-suit tiny house is \$59,884.
- The average cost of a DIY home build is closer to \$23,000.
- The most luxurious tiny homes top out at \$180,000.
- One couple built their own 192-square-foot tiny home for less than \$8,000.
- 78% of tiny home dwellers own their home compared to 65% of traditional home dwellers.

Source: <https://ipropertymanagement.com/research/tiny-home-statistics>

Tiny Homes/THOW & Climate Benefits

- Efficient space living translates into environmental benefits in energy, water, waste and purchasing
- Significant reductions in GhG
- 93% reduction of energy of traditional houses
- 45% decrease in ecological footprint

Source:

<https://ipropertymanagement.com/research/tiny-home-statistics>

Smaller Carbon Footprint

Living in a smaller home means less electricity or natural gas usage; it costs less to heat or cool a smaller space. Many tiny home builders also install energy-saving items like solar panels and washer/dryer combos that do the work of two machines in one.

On a related note, tiny house owners tend to use more fresh foods than pre-packaged or frozen. This is partially due to smaller fridge/freezer space, but it's also a part of the "tiny home culture." The early interest in tiny homes was, after all, to get away from big city life and get back to nature, living as cleanly and simply as possible.

Other common behavioral changes among new tiny house dwellers include greater conservation of water, increased composting, more purposeful purchasing habits, and less housekeeping and maintenance.

- A tiny home uses about 7% of the energy that a traditional house does.
- Moving to a tiny home can decrease a household's ecological footprint by 45%.
- Tiny homes emit an average of 2,000 pounds of greenhouse gasses each year; traditional homes emit 28,000 pounds.
- Tiny homes use an average 914 kilowatt hours (kWh) each year while traditional homes use 12,773 kWh.
- The ecological footprint of the average tiny home is 3.87 global hectares (gha); a traditional home's footprint is 8.4 gha.
- 85% of tiny homes operate at above-average energy efficiency.

Benefits of the Innovative Housing Pilot Approach

- **Innovation** Opportunity to be a leader in continuing Portland's Legacy of Innovation
- **Low Risk, High Reward** Small set of pilots provides a pathway to test innovative housing models, study code barriers, and demonstrate viability with low risk
- **Transitional approach** Low-impact development can happen NOW while retaining future higher intensity development potential without demolition
- **Climate-responsive approach** Supports removing code barriers to more climate responsive and low impact housing types
- **Socially-responsive approach** Creates more opportunities to demonstrate affordable socially-supportive housing models that we have few example of (Cohousing & Community Land Trusts)

Creates a pathway to test creative affordable housing approaches we may not have considered yet.



The L.A. Dome Village was comprised of 20 Omni-Sphere domes which provided housing and supportive service for up to 34 individuals and family members. Located in the heart of downtown LA, it transformed an unsightly encampment site into a community of formerly homeless people.

Discussion

Input on the Policy

- How many pilots?
- What types of innovative housing?
- Minimum # of units for impact?
- What zones?

What are the barriers you are experiencing?

What innovative projects are you working on that this could have applications for?

Opportunities for a statewide policy?

How can you get involved?

Innovative Housing Demonstration Projects (IHDP) Policy

CONCEPT ENDORSED BY:

- Alternative Housing Network
- City Love Cottage Company
- EMA Architects
- Forage Design + Planning
- Guerrilla Development Company
- Green Urban Design
- Neil Kelly
- Placecraft Design & Build
- PDX Main Streets
- Progressive Development Group
- RESOLVE Architecture + Planning
- Woodsong & Associates



3 Amendments Advance Equity + Affordability + Climate

Proposed “Future Work” Amendments	Equity & Access	Housing Options	Affordable Strategies	Houseless Solutions	Climate Resiliency
1 Innovative Housing Demonstration Policy (IHDP)	✓	✓	✓	✓	✓
2 Add Tiny Houses on Wheels (THOW) as a Cluster Housing Type	✓	✓	✓	✓	✓
3 Add RIP Financial Implementation Tools Increase low-carbon housing & diversity in who benefits	✓	✓	✓	✓	✓

“FUTURE WORK” AMENDMENT 2

Include Tiny Homes on Wheels in Cluster Housing

Benefits

- Increases equity and accessibility of who can own/build/create housing
- Provides much needed low-cost housing with greater flexibility at a price point and market category currently missing
- Adds to diversity of affordable housing choices (both rental and owned)
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Affordability, Equity & Climate Concerns can be mitigated

Expand who benefits from RIP with financial tools and technical assistance.

- Without the financial tools that support adaptive development we continue to further gentrification, displacement, demolition and inequity in who benefits.
- We need the financial tools in place to help small local developers, residents and local communities with less knowledge gain access to technical assistance and resources,
- We need to help others “Age in Place” with adaptive strategies
- Financial tools can be a positive anti-displacement strategy



New infill: duplex sale price- \$800k each. Not Affordable Housing.

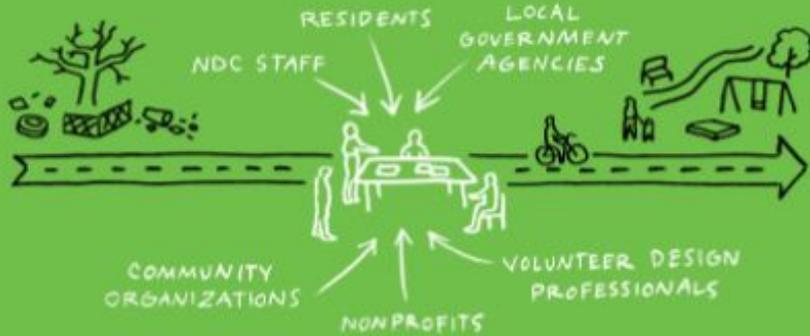
Industry will gravitate to hot markets where housing can be built for greatest profit. Further exacerbating the inequities of housing options in inner areas over internal conversions which would yield more affordability.

Support the Innovative Housing Demonstration Pilot (IHDP) Policy

- Endorse with your name or organization's logo
- Provide a testimonial or letter in support
- Advise on the policy proposal
- Advocate: write City Council, submit an op-ed,
- Testify on RIP 2
- Share on social media, email your friends and colleagues
- Donate to help us advocate and innovate

<https://www.pdxmainstreets.org/support-us>

We bring everyone to the table. The more inclusive the process, the better the design, the stronger the buy-in, and the longer-lasting the project.



New Design Center for Resilient Communities

- Pro-bono planning and design with communities in need
- Policy Advocacy: Innovative Housing Demonstration Policy
- Eco-Demonstrations & Placemaking (Solar Kiosk Resiliency Hubs)
- Research & Strategic Visioning Initiatives



Top: Neighborhood Design Center in Baltimore as inspiration, Left: Eco-demonstration Center, Right: Adaptive Green Affordable Housing Workshop by PDX Main Streets



Making Green Design Accessible, Equitable, & Within Reach

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