



Hopeworks Station North:

Energy Efficiency via Net Zero Design Goals

Powerful Facility Conference 2022

GGLO

SEATTLE | LOS ANGELES | BOISE

gglo.com

SPEAKERS



JON HALL,
AIA, LEED AP®

Principal

GGLO

LEN KANNAPELL

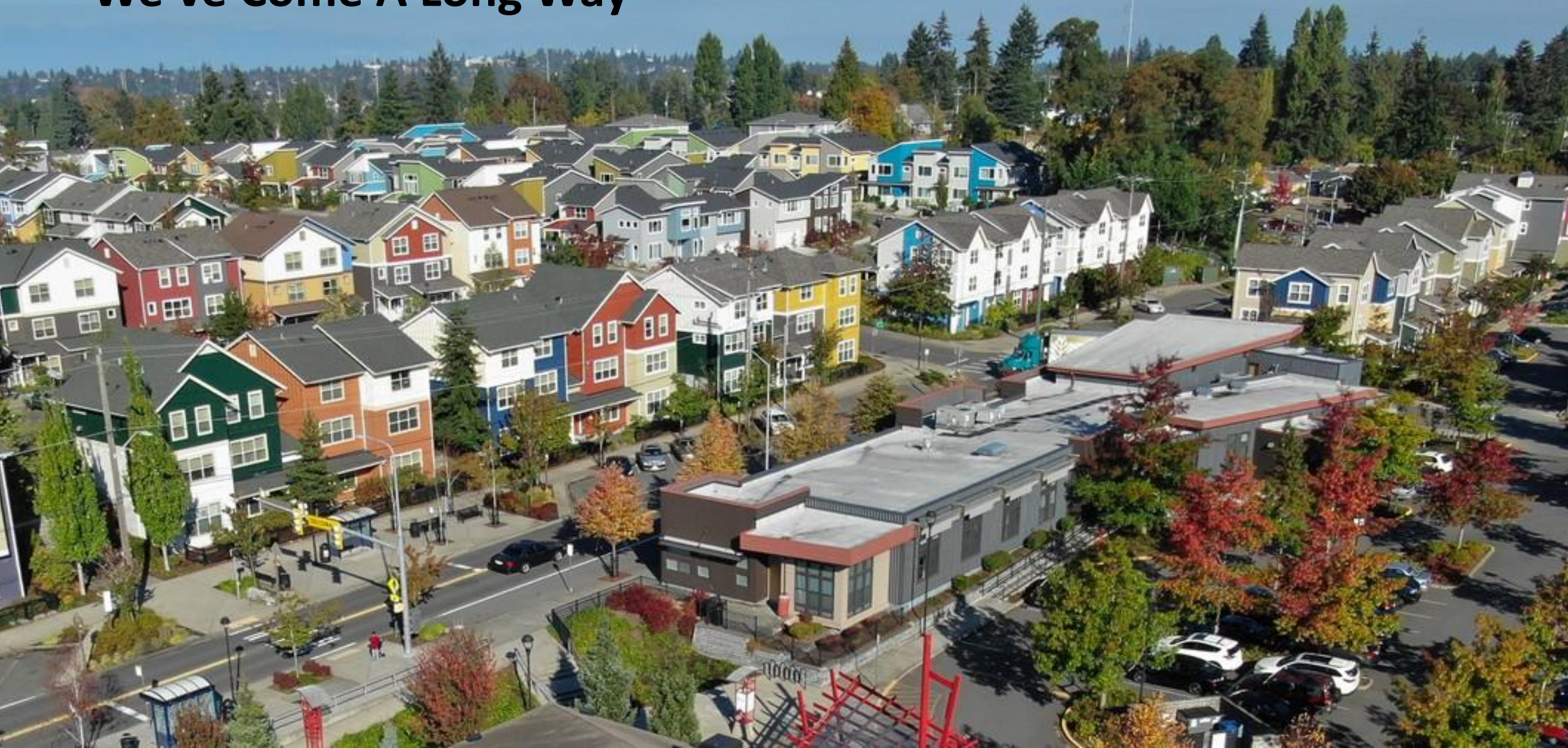
Energy Management
Analyst

Seattle City Light

We've Come A Long Way



We've Come A Long Way



We've Come A Long Way



We've Come A Long Way



We've Come A Long Way



We've Come A Long Way





INTERNATIONAL **LIVING FUTURE** INSTITUTESM



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CORE
GREEN BUILDING
CERTIFICATION



ZERO CARBON
CERTIFICATION



ZERO ENERGY
CERTIFICATION

Declare.



CASCADIA
GREEN BUILDING COALITION



ECOtone^{LLC}
publishing company

Reveal.

Just.

Net Positive Transit Oriented Development: Hopeworks Everett Station Phase North



Just.

Organization Name: GGLO
Organization Type: Service Provider
Headquarters: Seattle, Washington
Satellite Facilities: Marina Del Rey, CA
Number of Employees: 125

Social Justice and Equity Indicators:

Diversity	Worker Benefit
<input checked="" type="checkbox"/> Non-Discrimination	<input checked="" type="checkbox"/> Worker Happiness
<input checked="" type="checkbox"/> Gender Diversity	<input checked="" type="checkbox"/> Employee Health Care
<input checked="" type="checkbox"/> Ethnic Diversity	<input checked="" type="checkbox"/> Continuing Education

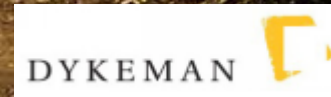
Equity	Local Benefit
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<input checked="" type="checkbox"/> Pay-Scale Equity	<input checked="" type="checkbox"/> Local Sourcing
<input checked="" type="checkbox"/> Union Friendly	<input checked="" type="checkbox"/> Stewardship
<input checked="" type="checkbox"/> Living Wage	<input checked="" type="checkbox"/> Responsible Investing
<input checked="" type="checkbox"/> Gender Pay Equity	<input checked="" type="checkbox"/> Community Volunteering
<input checked="" type="checkbox"/> Family Friendly	<input checked="" type="checkbox"/> Positive Products
	<input checked="" type="checkbox"/> Charitable Giving
	<input checked="" type="checkbox"/> Animal Welfare
	<input checked="" type="checkbox"/> Transparency

Safety
<input checked="" type="checkbox"/> Occupational Safety
<input checked="" type="checkbox"/> Hazardous Chemicals

THE SOCIAL JUSTICE LABEL
GLO-001 EXP 08/30/2021

HOPE
CHANGES
Everything

HOPEWORKS



GGLO

Why Did We Do It?

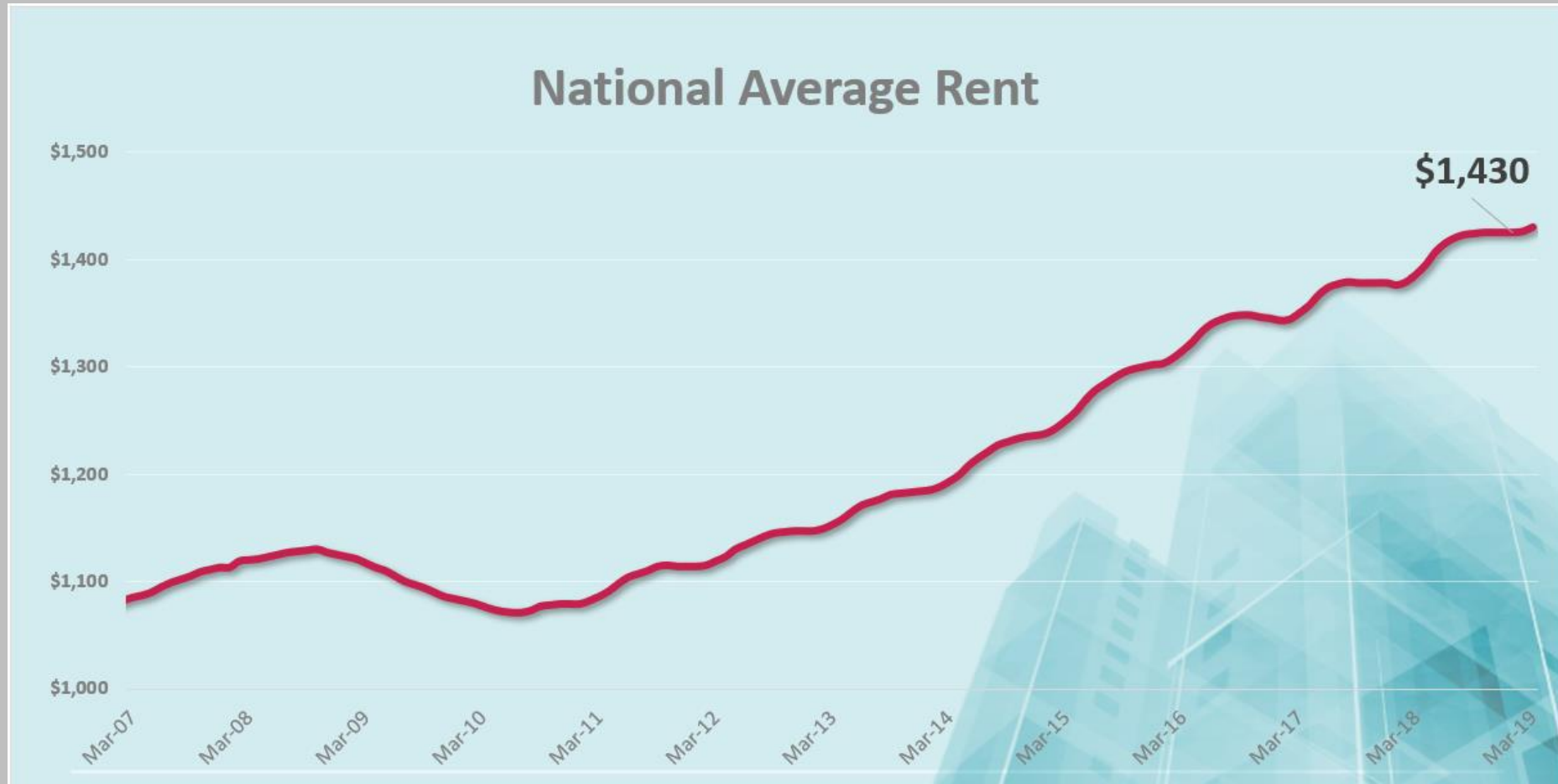
Demonstration On Three Levels

Affordable Housing
Workforce Development
Sustainability



Challenge

Lack of Homeless Housing and Affordable Housing



Challenge

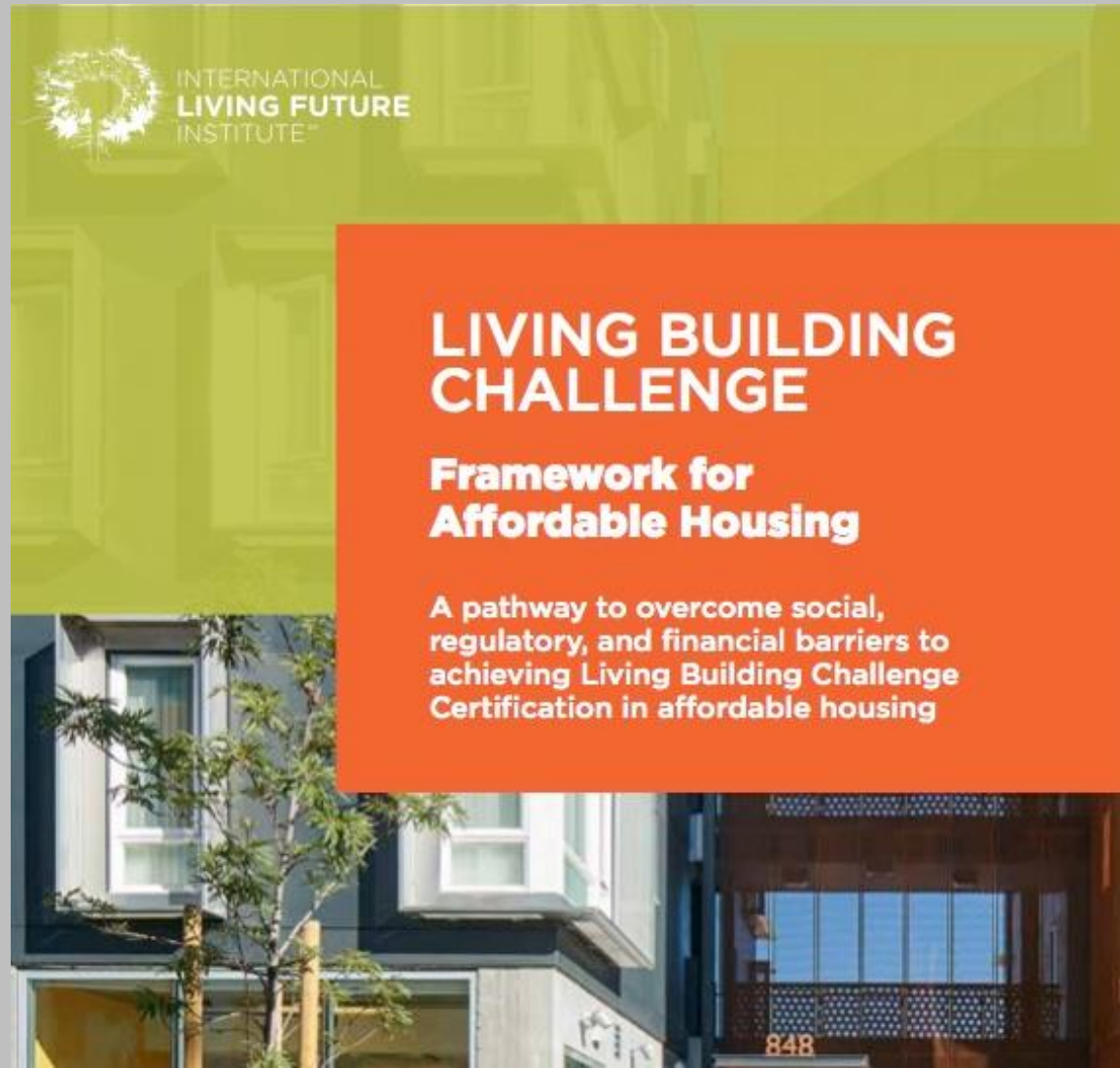
Population Stuck in Poverty

Monroe Mayor, Geoffrey Thomas



Challenge

Limited Affordable Housing Sustainability Models



Challenge

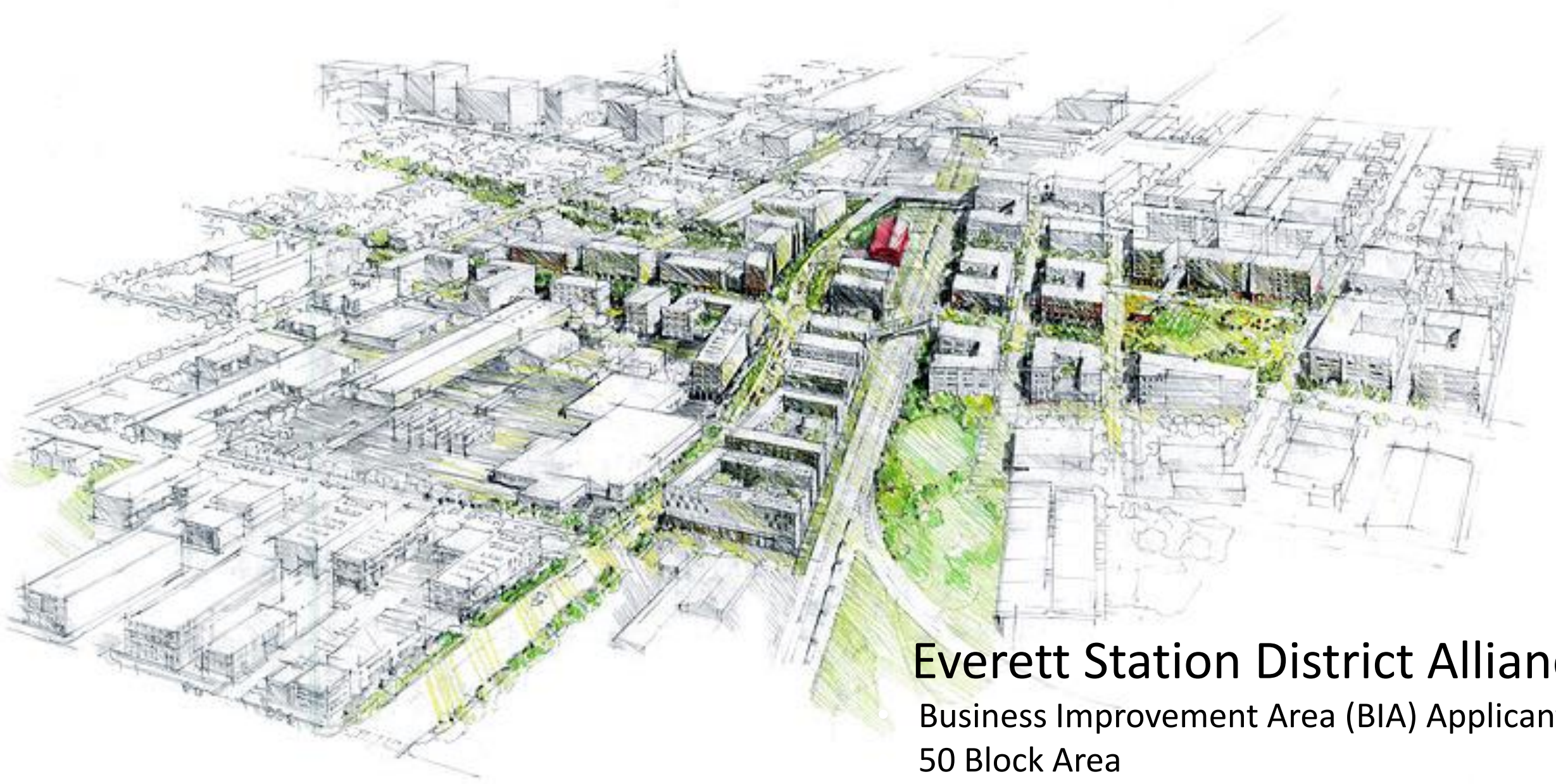
Transit Center Without a TOD Plan



Everett Station

HopeWorks Station

Phase 2
Phase 1



Everett Station District Alliance

Business Improvement Area (BIA) Applicant

50 Block Area

Transit Oriented Developments

Train, Bus, & Bicycle Connections



Hopeworks Station 2

Hopeworks Station 1

Transit Oriented Development

Challenge

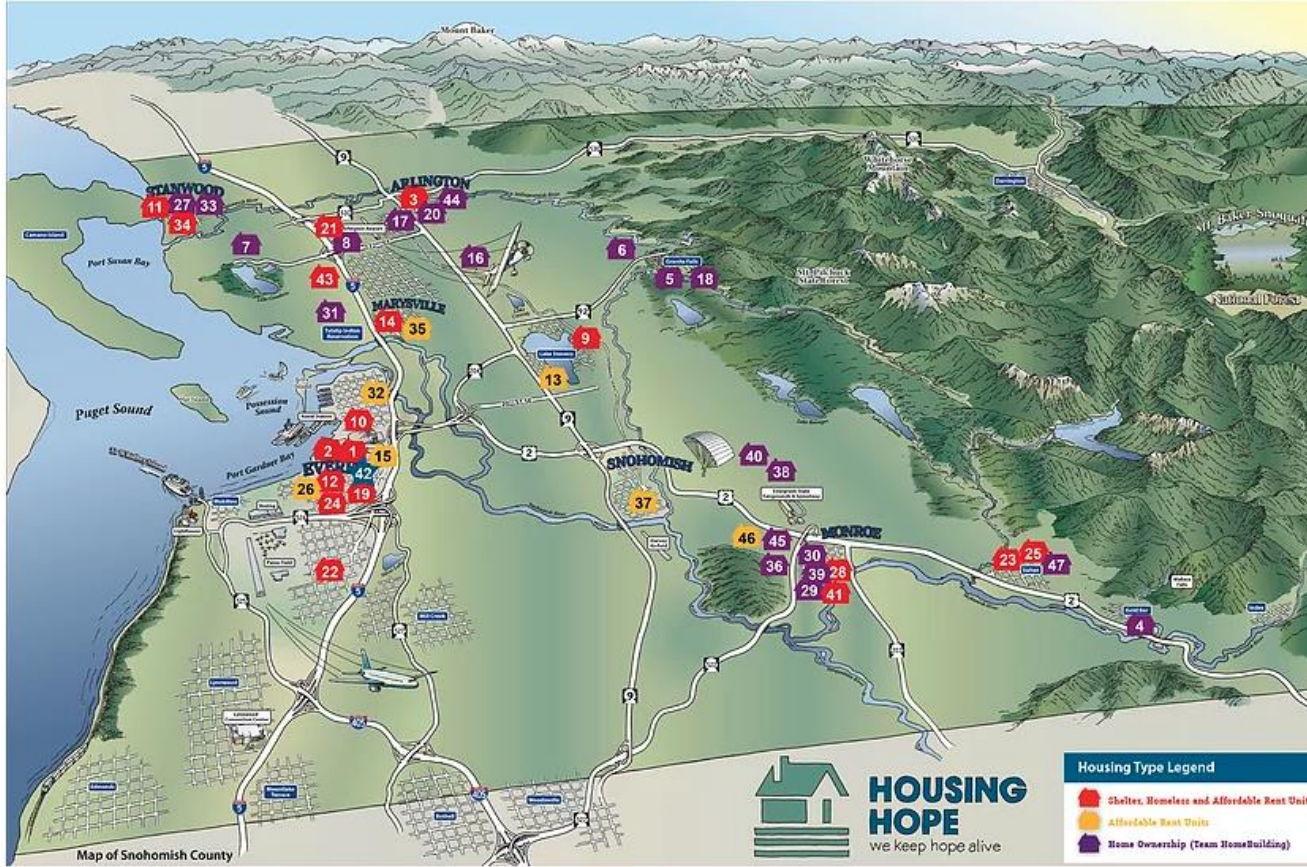
Rampant Homelessness



Partnership



What started as an idea in 1987 has grown into 479 residential units at 22 locations and 301 homeownership houses throughout Snohomish County. HopeWorks Station is home to our Social Enterprises and Phase II opens in 2019!



Housing Hope properties with number & types of units

- | | |
|--|---|
| 1. Crossroads (Everett)
6 Affordable rent, 5 shelter | 26. Fleming Duplexes (Everett)
6 Affordable rent |
| 2. Kennedy Court (Everett)
7 Homeless, 1 affordable rent | 27. Port Susan (Stanwood)
20 Homeownership |
| 3. Arlington Triplex (Arlington)
1 Affordable rent, 2 homeless | 28. Woods Creek (Monroe)
8 Affordable rent, 6 homeless |
| 4. Gold Bar (Gold Bar)
8 Homeownership | 29. Sky Meadows West (Monroe)
8 Homeownership |
| 5. Lake Alyson (Granite Falls)
16 Homeownership | 30. Sky Meadows East (Monroe)
8 Homeownership |
| 6. Blue Spruce (Granite Falls)
16 Homeownership | 31. Mission Highlands (Tulalip)
5 Homeownership |
| 7. Lake Howard (Seven Lakes)
16 Homeownership | 32. Mt. Baker View (Everett)
20 Affordable rent |
| 8. Timber Park (Arlington)
25 Homeownership | 33. Copper Station (Stanwood)
35 Homeownership |
| 9. Avanti House (Lake Stevens)
1 Affordable rent, 2 homeless | 34. Lincoln Hill Village (Stanwood)
19 Affordable rent, 5 homeless |
| 10. Commerce Building (Everett)
19 Affordable rent, 29 homeless | 35. Park Place Townhomes (Marysville)
14 Affordable rent |
| 11. Lervick Family Village (Stanwood)
7 Affordable rent, 6 homeless, 1 shelter | 36. Marvin Gardens (Monroe)
14 Homeownership |
| 12. Hope Village I (Everett)
6 Affordable rent, 13 homeless | 37. Pilchuck Place (Snohomish)
10 Affordable rent |
| 13. Vision House (Lake Stevens)
1 Affordable rent | 38. Rose Park (Snohomish)
10 Homeownership |
| 14. Beachwood (Marysville)
20 Affordable rent, 5 homeless | 39. Monroe Main Street (Monroe)
13 Homeownership |
| 15. Oakes Commons (Everett)
20 Affordable rent | 40. French Creek Bluff (Snohomish)
10 Homeownership |
| 16. Country Manor (Arlington)
29 Homeownership | 41. Monroe Family Village (Monroe)
10 homeless, 37 affordable rent |
| 17. Highland View Estates (Arlington)
8 Homeownership | 42. HopeWorks Station I (Everett)
Home of Social Enterprises |
| 18. Bogart Meadows (Granite Falls)
10 Homeownership | 44. Parkwood Estates I & II (Arlington)
14 Homeownership |
| 19. New Century Village (Everett)
18 Affordable rent, 26 homeless | 46. Fairview Apartments (Monroe)
31 Affordable rent |
| 20. The Bluff (Arlington)
32 Homeownership | 43. Twin Lakes Landing (Marysville)
38 homeless, 12 affordable rent |
| 21. Maple Leaf Meadows (Arlington)
9 Affordable rent, 12 homeless | 45. Hegger Short Plat (Monroe)
7 Homeownership |
| 22. Avondale (Everett)
14 Homeless | |
| 23. Winter's Creek South (Sultan)
2 Affordable rent, 3 homeless | Current & Future Developments |
| 24. Hope Village II (Everett)
3 Affordable rent, 9 homeless | 42. HopeWorks Station II (Everett)
Phase II |
| 25. Winter's Creek North (Sultan)
11 Homeless | 47. Siegel Short Plats (Sultan)
10 Homeownership |

Housing Hope's full range of housing and supportive services:

Shelter
Emergency Shelter for up to 90 day occupancy.

Service Supported Homeless Housing Units with comprehensive services for homeless families with children.

Affordable Rent Units affordable for families with low incomes.

Homeownership Team HomeBuilding sweat-equity homeownership for low income households.

Partnership



WHAT IS HOPEWORKS?

HopeWorks Social Enterprises is an affiliate of Housing Hope, and was launched in January 2011 with the goal of helping families gain skills and training for in demand jobs to enable them to start towards a living wage career.

HopeWorks creates and operates social enterprise businesses designed to provide paid internships for low-income Snohomish County residents.

[ABOUT US](#)

Partnership



Everett Station
DISTRICT ALLIANCE

Everett's Front Porch:
envisioning a brighter future for our community

Hopeworks Model

Three Floors of Housing: 65 apartments (57 homeless)

Ground Level Workforce Development Center

Training Academy Onsite

Resident Engagement

Career Pathways



Sustainability

WA Governor Inslee

International Living Future Institute

Everett Climate 350

Design Team



Demonstration Project

Energy Generation PV Array

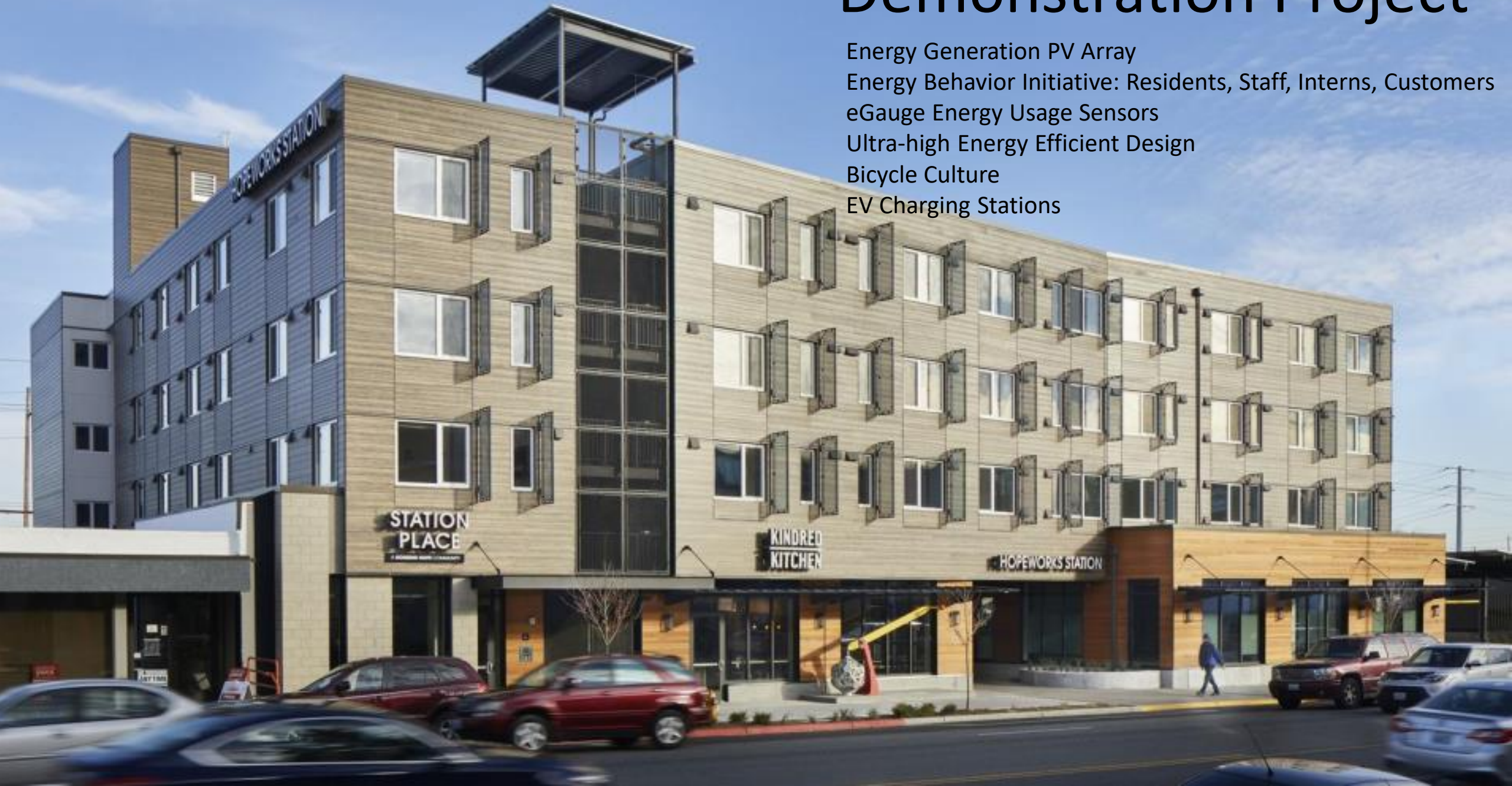
Energy Behavior Initiative: Residents, Staff, Interns, Customers

eGauge Energy Usage Sensors

Ultra-high Energy Efficient Design

Bicycle Culture

EV Charging Stations



Certifications (Planned)

LEED for Homes - Gold

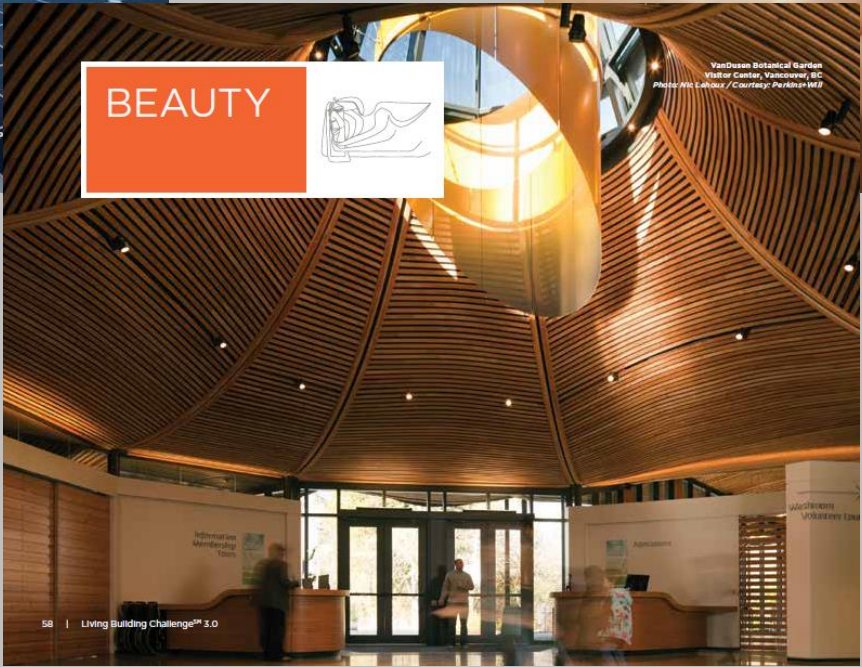
Living Building Petal Certification

Living Community Challenge in Station Neighborhood

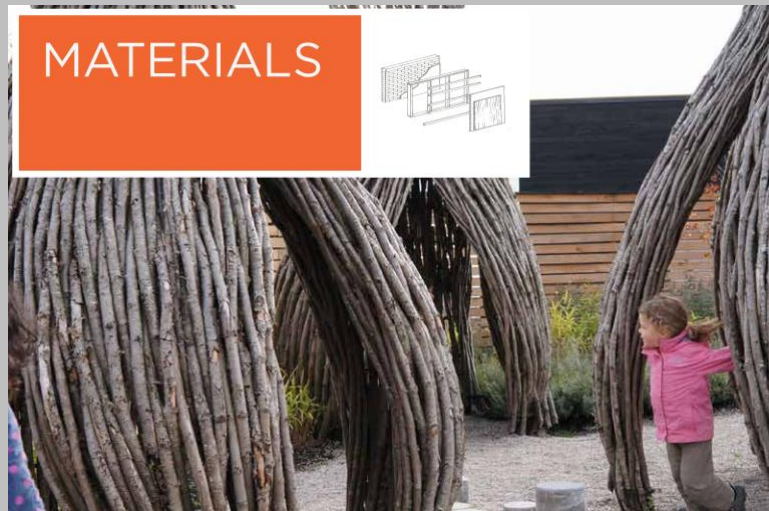


What Did We Do?

Living Building Petal Certification

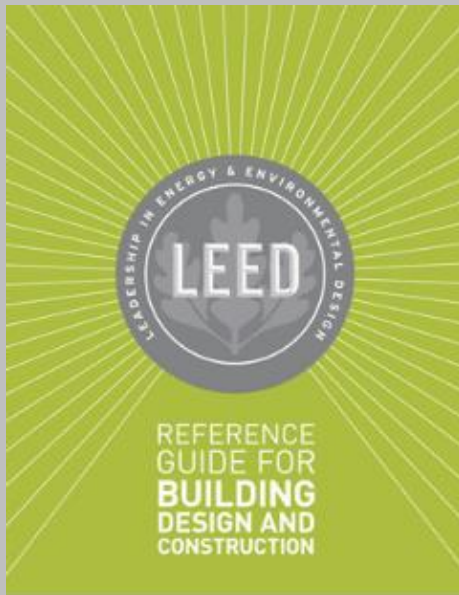


Living Building Petal Certification



Other Rating Systems

EVERGREEN SUSTAINABLE
DEVELOPMENT STANDARD
VERSION 3.0




STATE OF WASHINGTON
DEPARTMENT OF COMMERCE
1011 Plum Street SE • PO Box 42525 • Olympia, Washington 98504-2525 • 360-725-4000
www.commerce.wa.gov

Housing Trust Fund (HTF)
Ultra-Efficient Affordable Housing Demonstration (UHEE)
Application

 INTERNATIONAL
LIVING FUTURE
INSTITUTE™

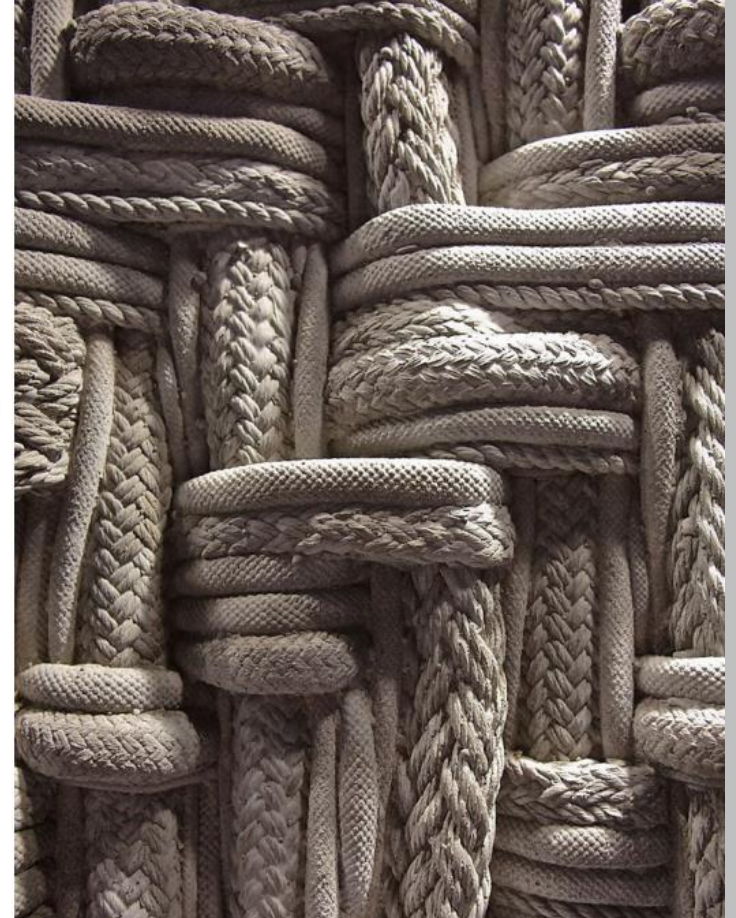


NETZERO
ENERGY BUILDING
CERTIFICATIONSM

Program

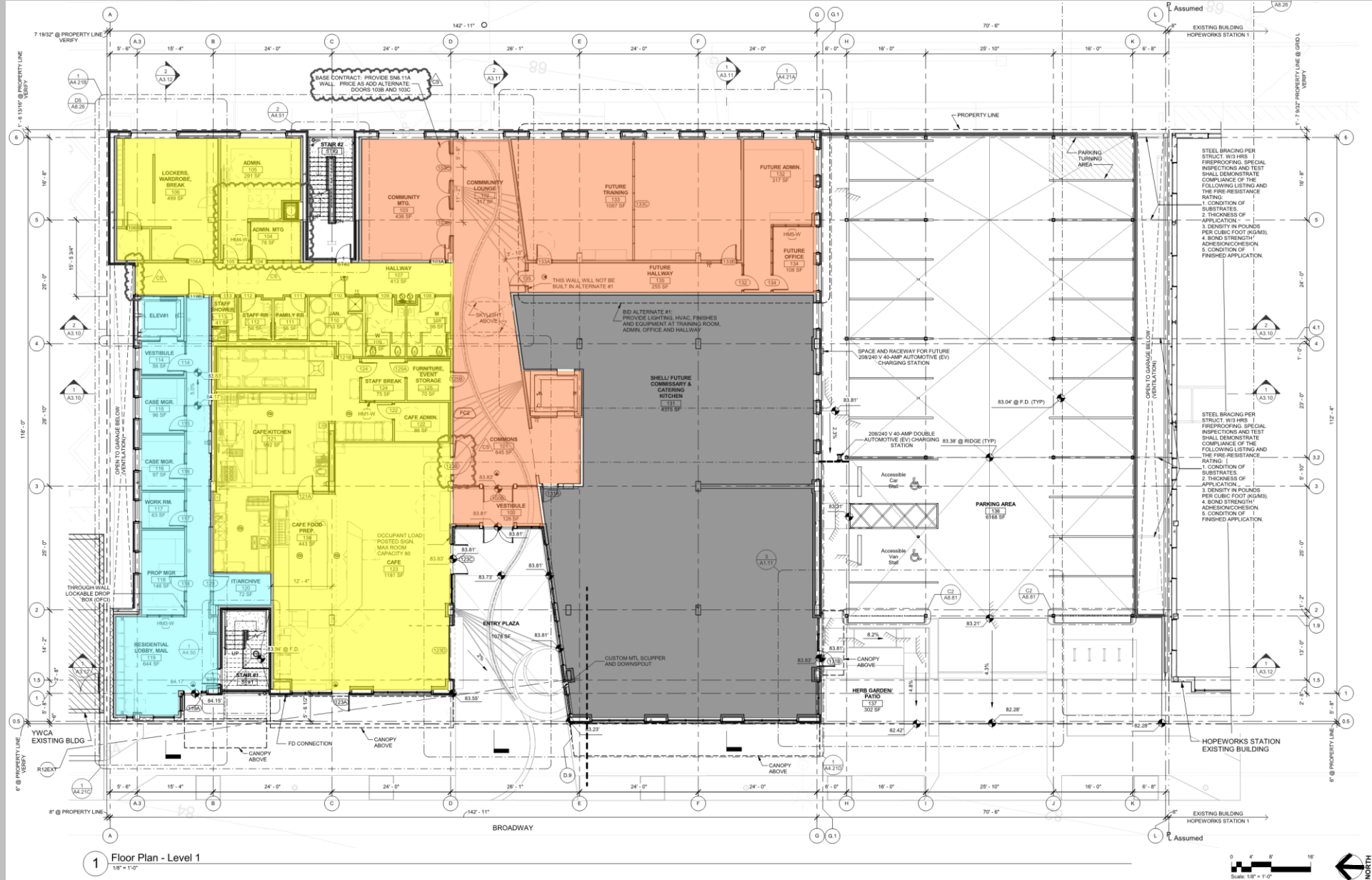
SUPPORT
+
CONNECT

HOPE

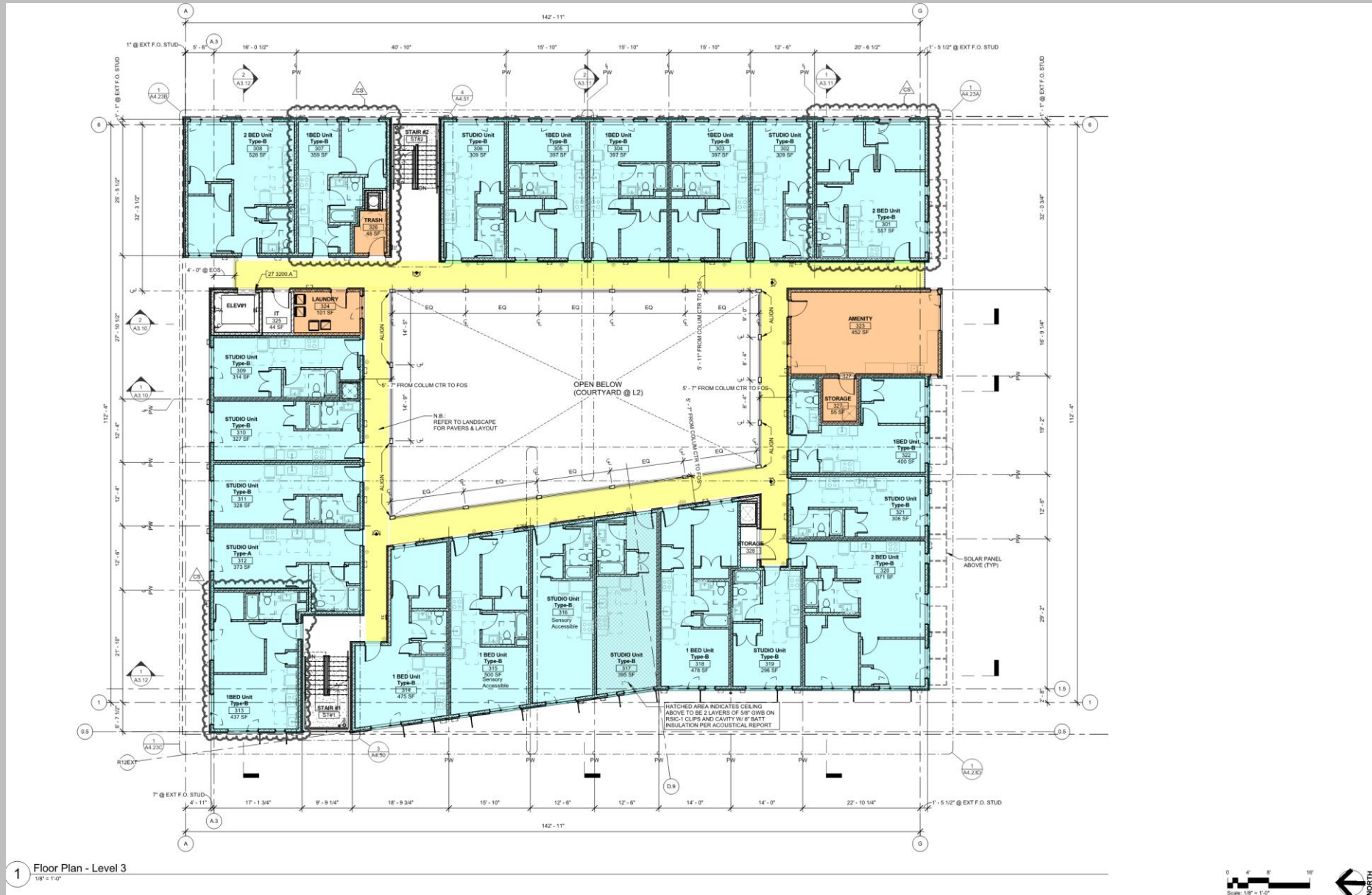


This project is a community focused on hope, powered by self-sufficiency, supported by stability, safety and a pathway to dignity.

Program



Program







HOPEWORKS STATION

ENTER
FACE

MINIB
KITCHEN

HOPEWORKS

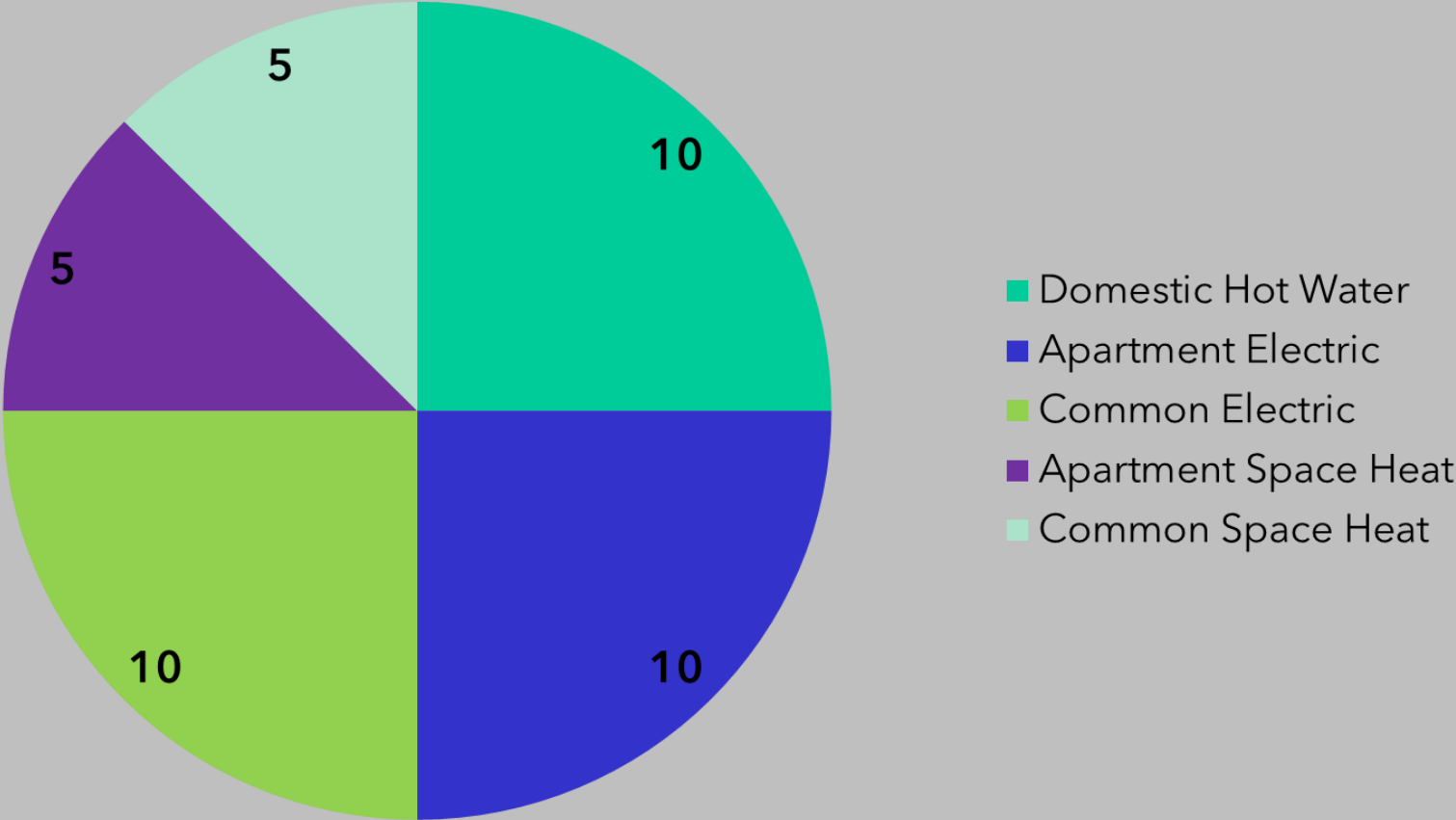
HOPEWORKS

ENERGY



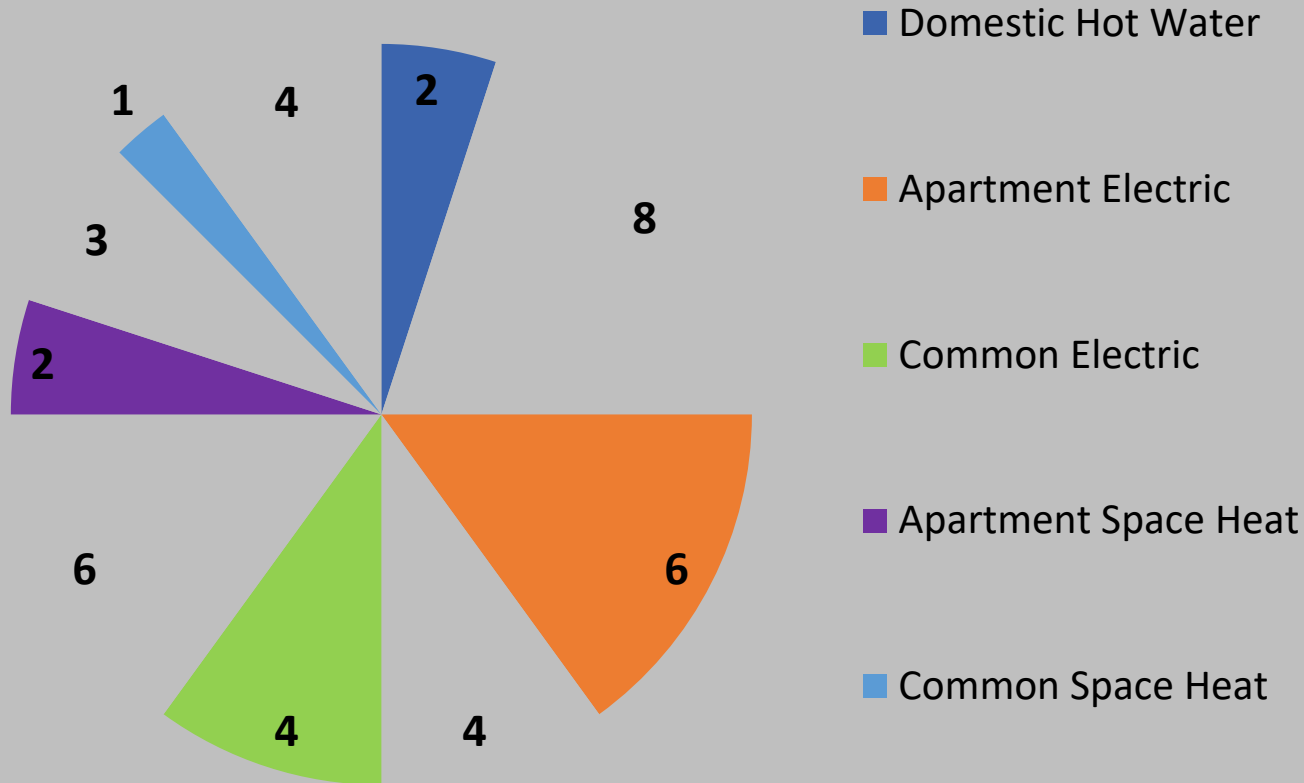
Energy

Local Mid-rise Housing Baseline: EUI ~ 40kBtu/SF/yr



Energy

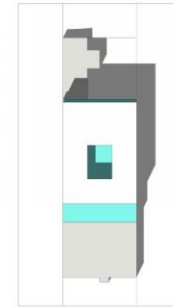
Proposed Apartments: EUI ~ 15kBtu/SF/yr



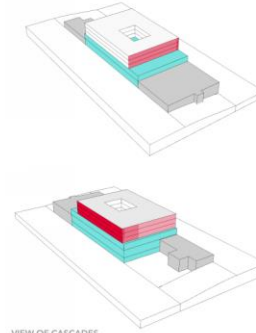
- Low Flow, Fixtures
 - Heat Pump Water,
 - Efficient Plumbing Design
 - EStar Appliances
 - LEDs
 - Heat Pump Dryers
 - Exterior Corridors
 - Fans
 - Lighting Controls
 - Apartment Heat Pumps
-
- Then PV = 190 kW

Energy

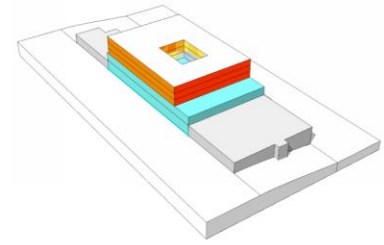
Option No. 1
 Annual Mwh 1,025
 Gross Area above podium 52,798 SF
 Net Residential Area (85% efficiency) 44,878 SF
 Average Unit Size 600 SF
 Approx. Unit Count 75



PLAN



VIEW OF CASCADES



SOLAR RADIATION

1

2

3

4

5

6

7

8

9

10

11

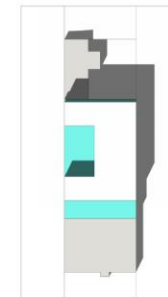
12

13

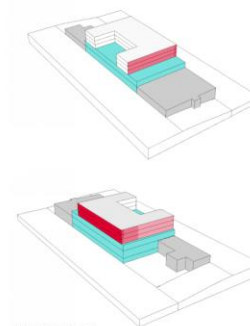
14

15

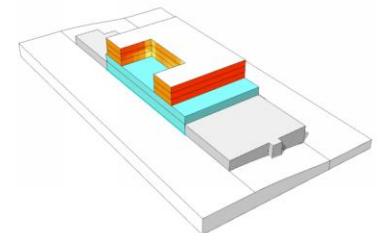
Option No. 4
 Annual Mwh 938
 Gross Area above podium 46,650 SF
 Net Residential Area (85% efficiency) 39,653 SF
 Average Unit Size 600 SF
 Approx. Unit Count 66



PLAN

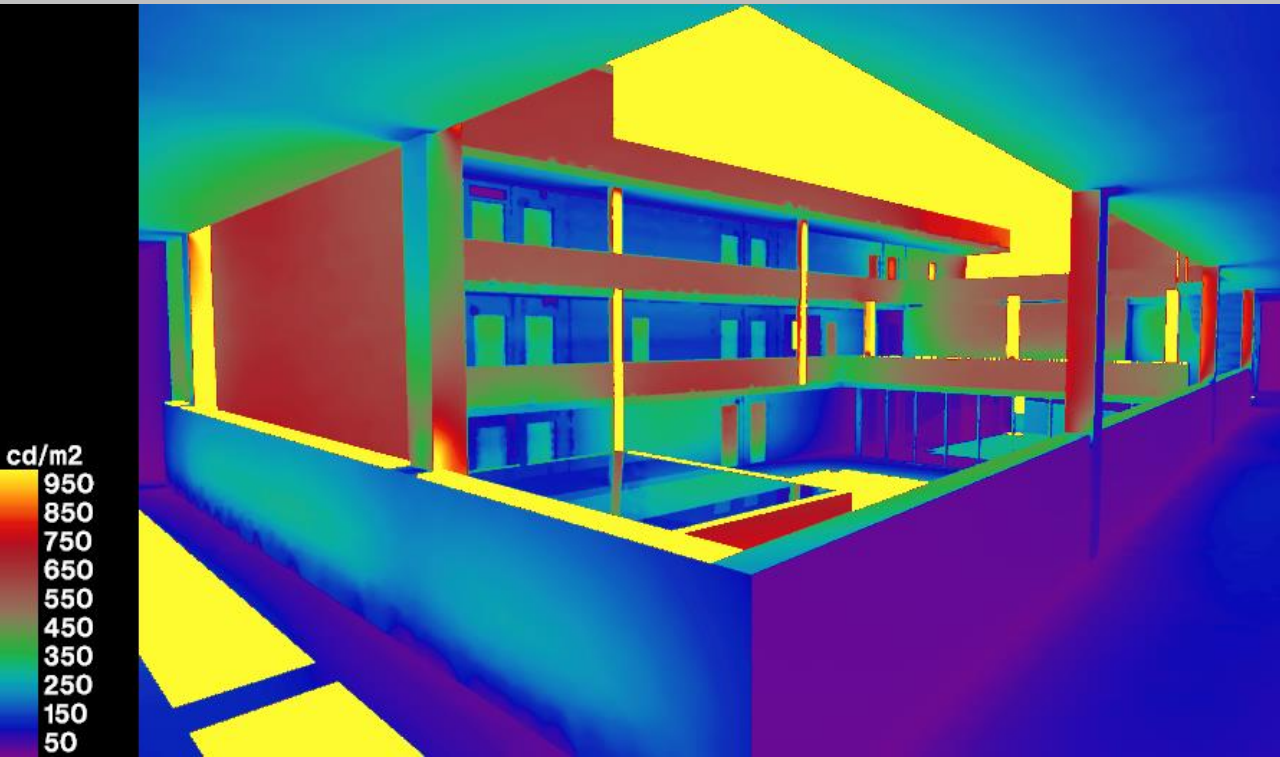
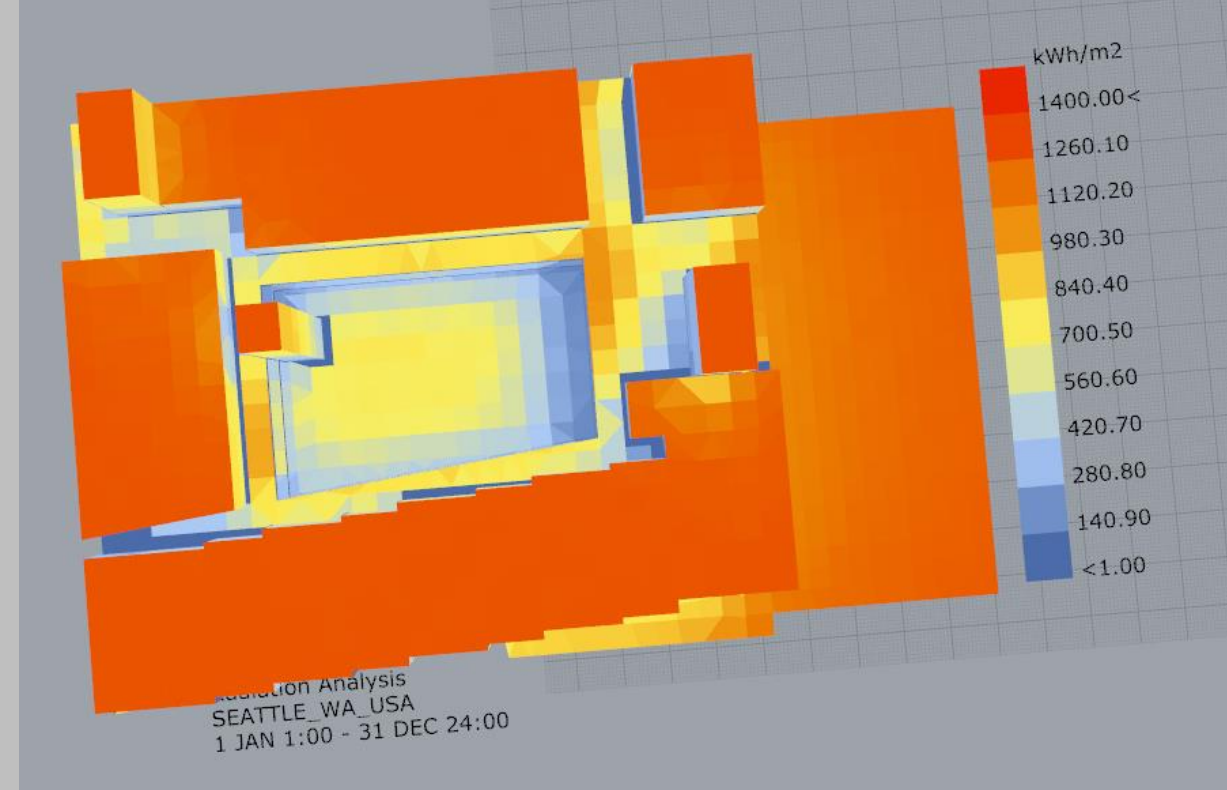


VIEW OF CASCADES



SOLAR RADIATION

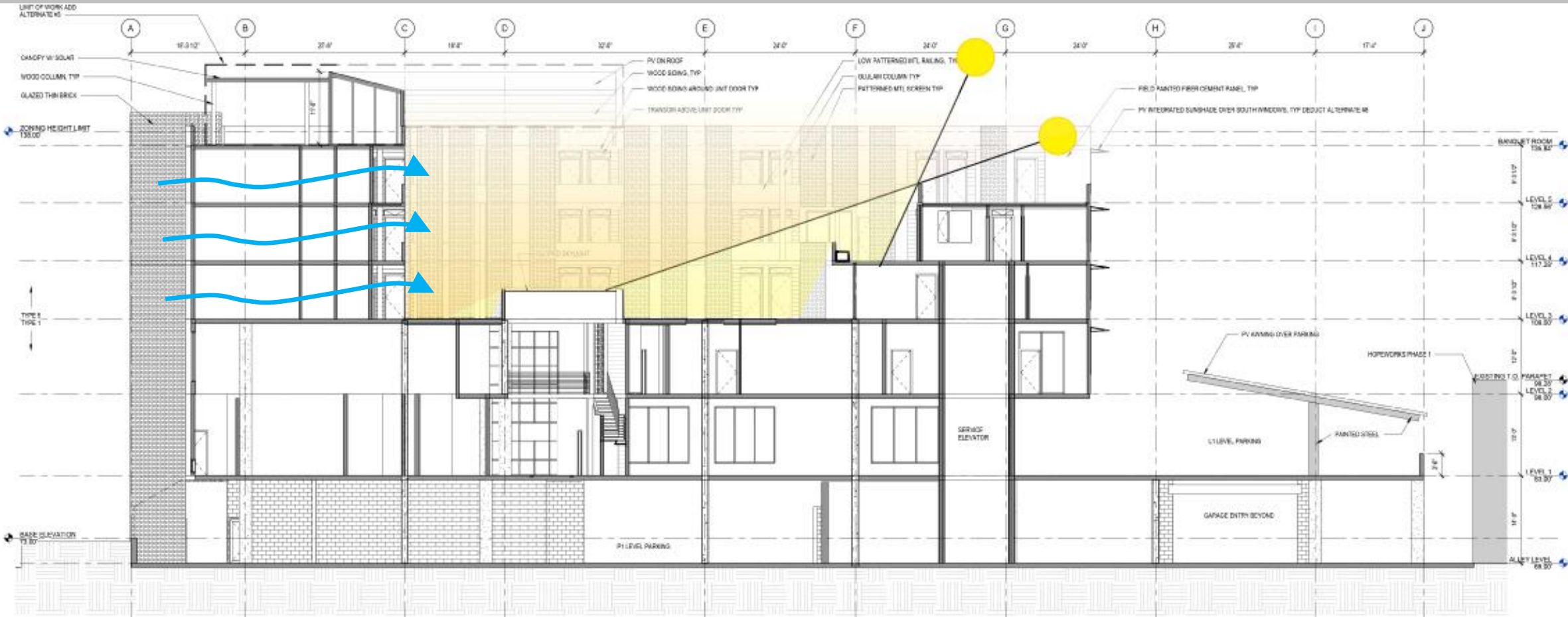
Energy



Energy



Energy



Energy



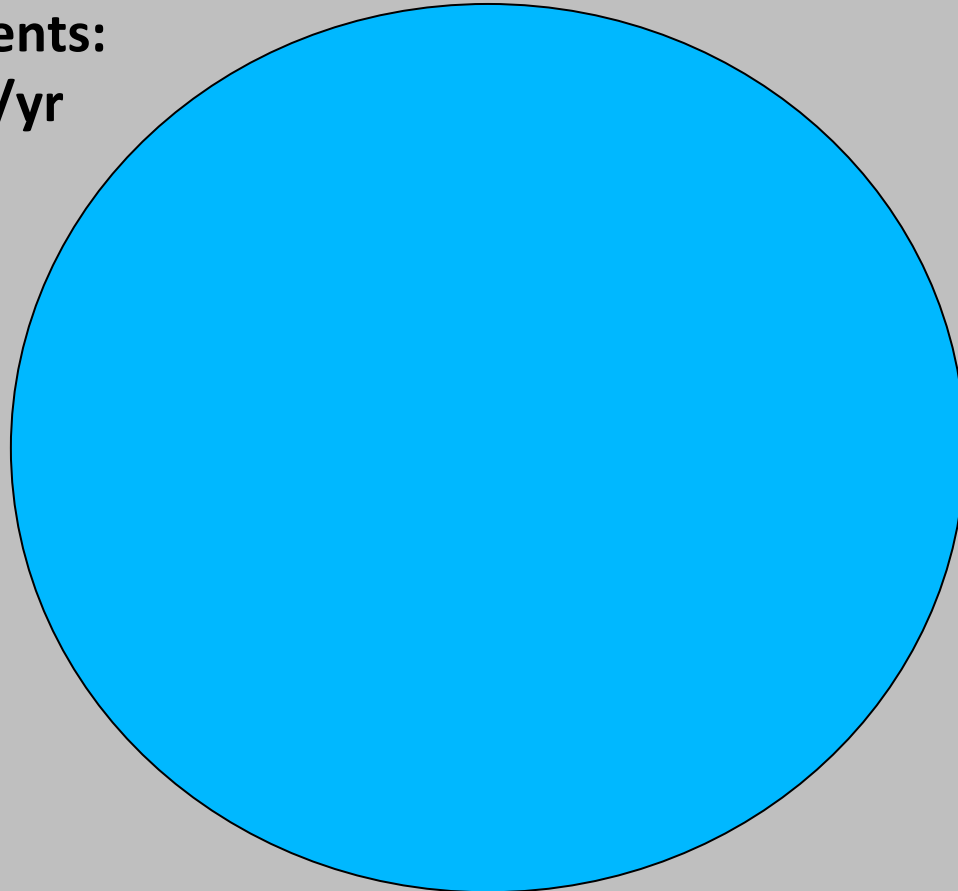
Energy



Energy

**Typical Restaurant Baseline:
EUI ~ 200-400 kBtu/SF/yr**

**Proposed Apartments:
EUI ~ 15kBtu/SF/yr**



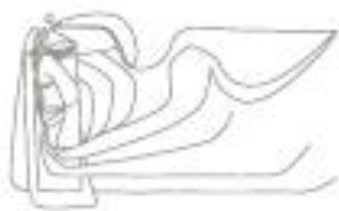
- Equipment
- Refrigeration
- Fans
- Hot Water Recovery

- Then PV offsite

Resilience Opportunities



BEAUTY



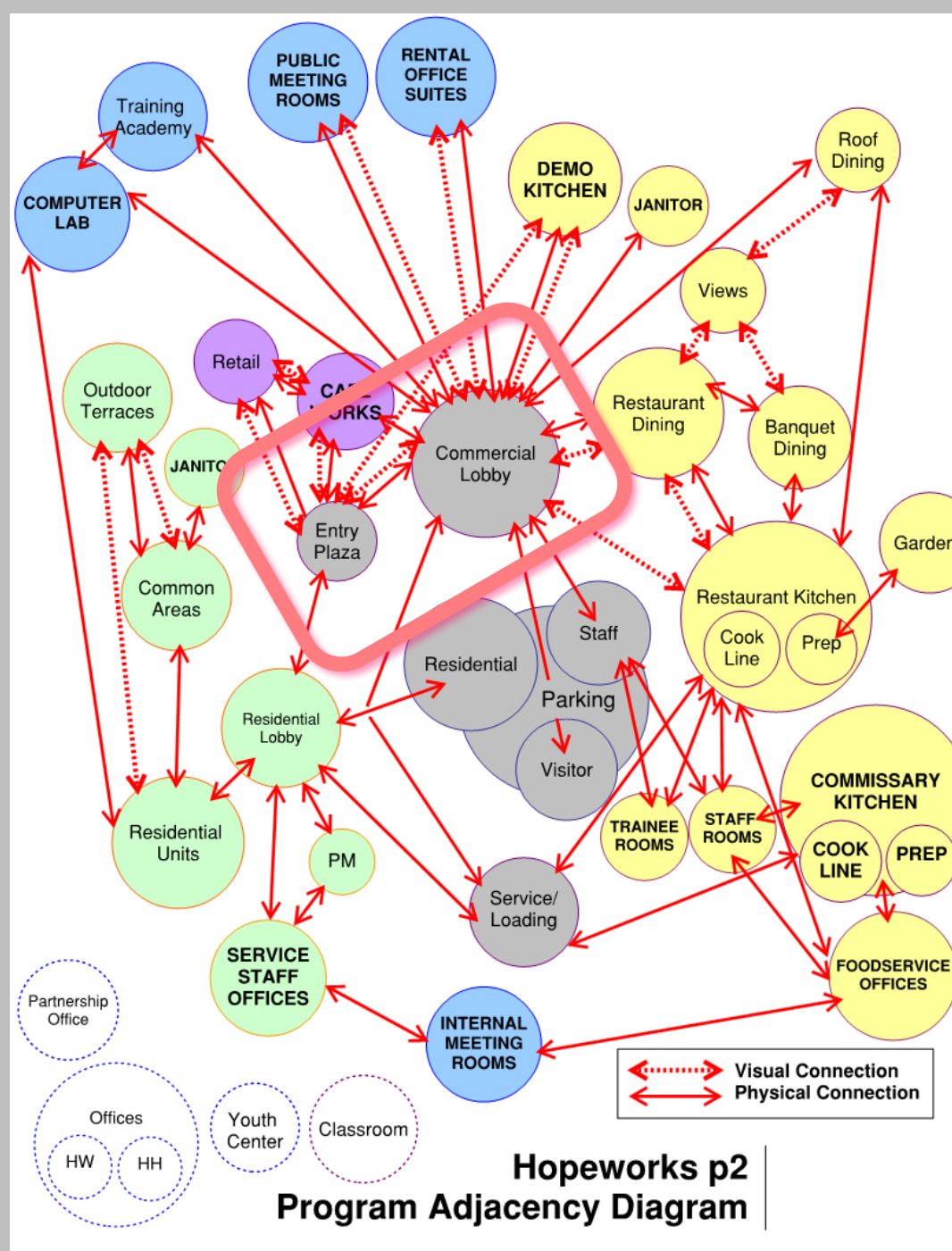
VanDusen Botanical Garden
Visitor Center, Vancouver, BC
Photo: Nic Lehoux / Courtesy: Perkins+Will

Beauty



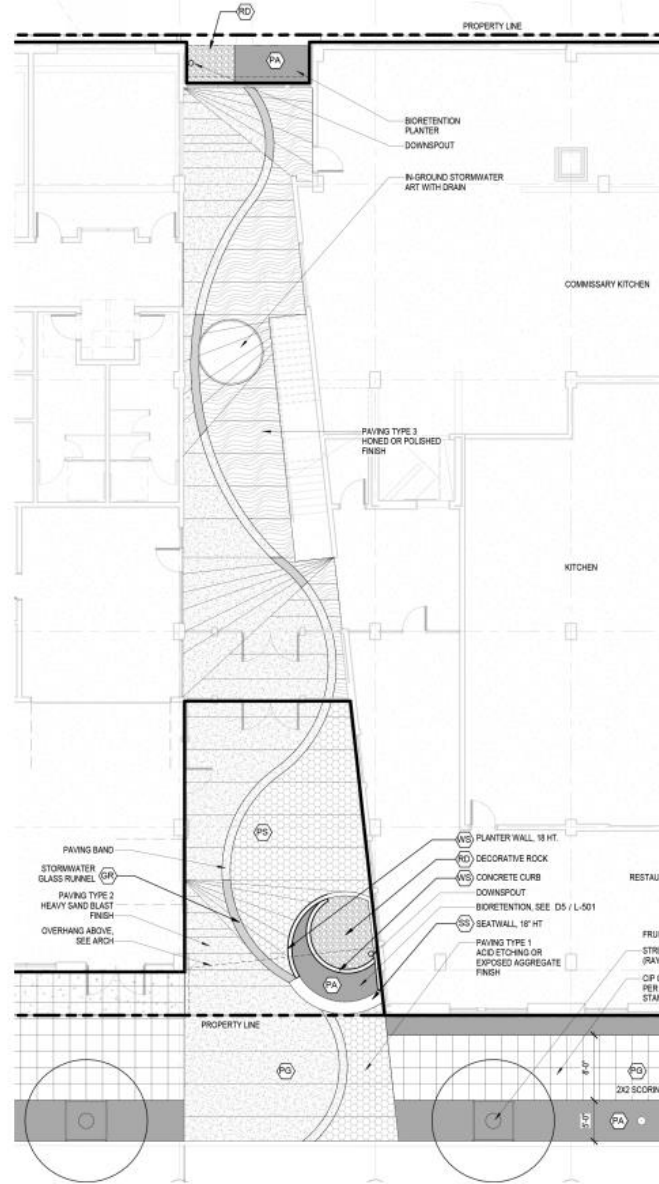
Art for Inspiration and Education

Beauty

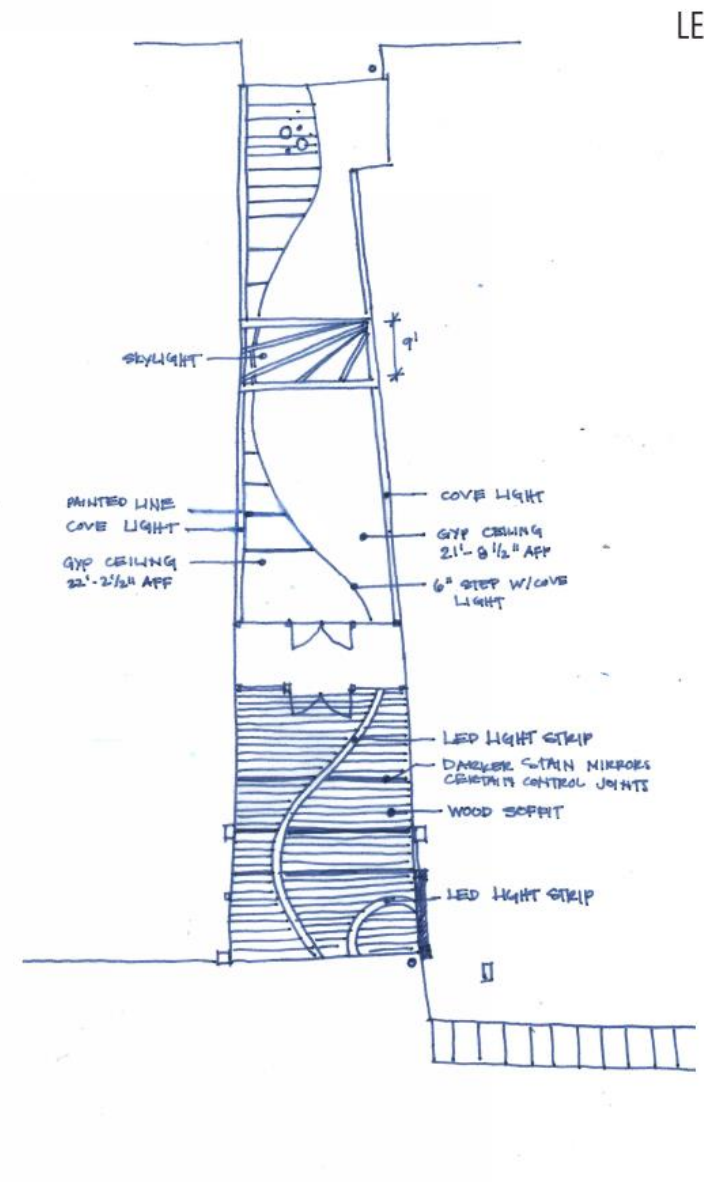


Beauty

HOPEWORKS PHASE II



FLOOR PLAN NORTH 0' 4' 8' 16'



REFLECTED CEILING PLAN NORTH 0' 4' 8' 16'

LEV

CAPITAL CAMPAIGN DONORS

Bill Chen	Robert McLeod and Judith Chubb	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller
The Bill & Melinda Gates Foundation	Bill Chen	David and Barbara	David and Barbara	David and Barbara	David and Barbara	David and Barbara	David and Barbara	David and Barbara	David and Barbara
Chen & My	Charles W. Day	Ed and Carl	Ed and Carl	Ed and Carl	Ed and Carl	Ed and Carl	Ed and Carl	Ed and Carl	Ed and Carl
System Architects	THANK YOU!	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller
Henry and Josephine	A village of generous donors helped make a building possible with contributions of \$500 to \$1,000,000.	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller	James H. Miller
Jillinger	Kenzie	Kenzie	Kenzie	Kenzie	Kenzie	Kenzie	Kenzie	Kenzie	Kenzie
Washington	Washington	Washington	Washington	Washington	Washington	Washington	Washington	Washington	Washington



Beauty

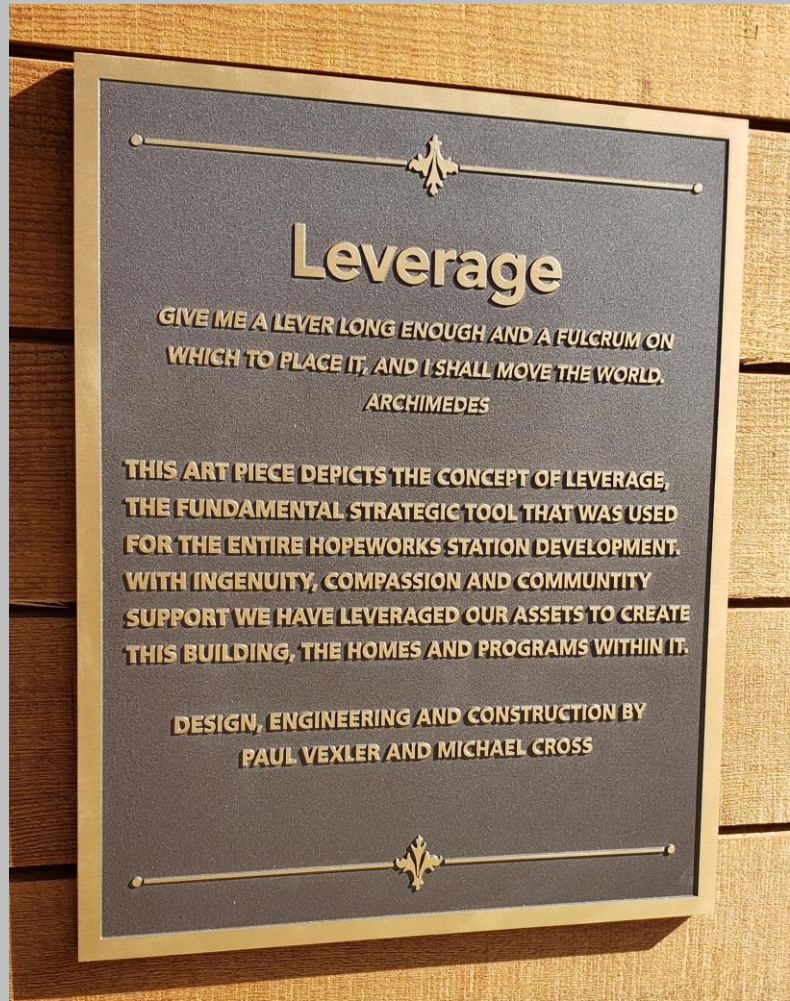
SCULPTURE COLOR OPTION - 1



Beauty

Lessons Learned:

- Inspire Locally
- Integrate Art into Design process
- Use Art as an Opportunity for Storytelling
- Future Expansion - Art accumulates over time





HOPE
CHANGES
Everything

KINDRED --- KITCHEN





HOPEWORKS STATION

STATION PLACE
A HOPEWORKS COMMUNITY

KINDRED KITCHEN

HOPEWORKS STATION

What Did We Learn?

Energy

Solar Energy:

- Net Zero Energy
- Net Zero Utility Cost
- Net Metering
- Know Your Utility



Energy

Lessons Learned:

- Get the Right Team Early
- Reduce then Add Renewables
- Know Your Utility
- Find Funding Sources



ENERGY PERFORMANCE

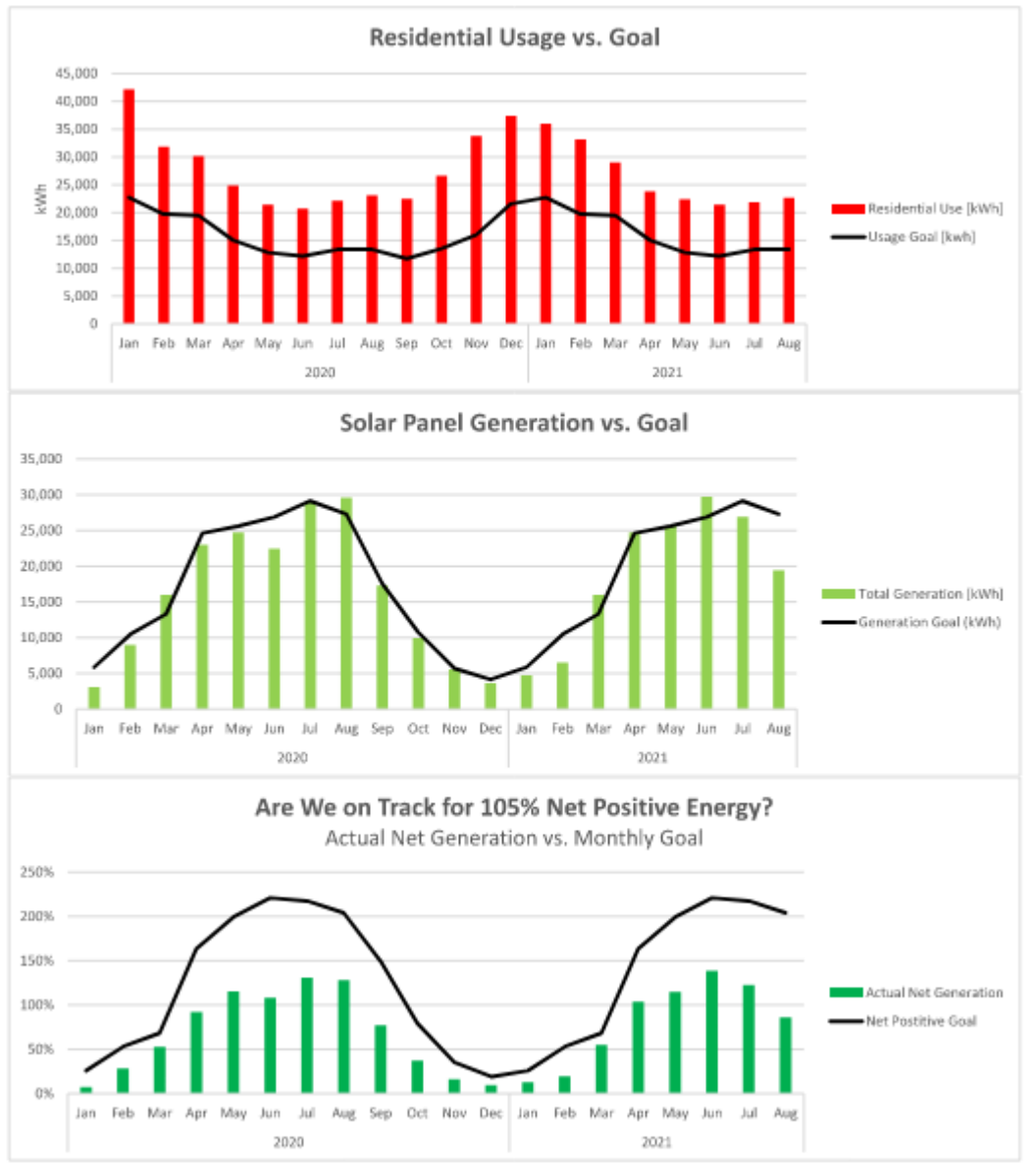
CAPITAL CAMPAIGN DONORS

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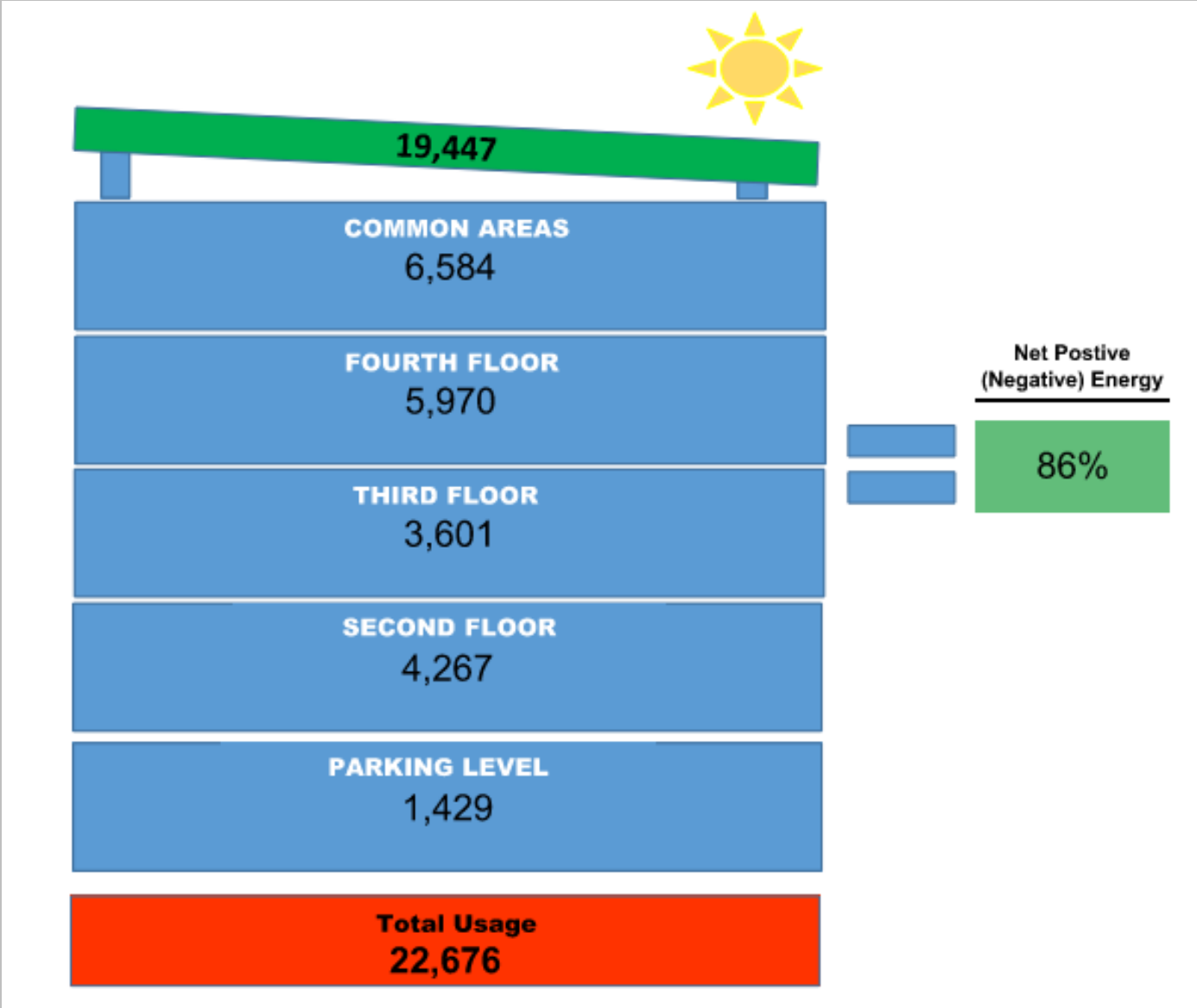
THANK YOU!
A village of generous donors helped make this building possible. Total contributions of \$500 to \$1,000,000.



ENERGY PERFORMANCE



ENERGY PERFORMANCE



ENERGY PERFORMANCE

Unit Energy Goal minus Actual Usage By Month (High, Medium, & Low)

##

Legend:

- High (Red)
- Medium (Yellow)
- Low (Green)

Click to Edit, Add, or Delete This Feature

Refresh

Blank Headers are the 3 average values for the month

Day/Mo	Oct-13	Nov-10	Dec-13	Jan-16	Feb-16	Mar-20	Apr-20	May-26	Jun-28	Jul-31	Aug-30	Sep-20	Oct-23	Nov-16	Dec-20	Jan-21	Feb-21	Mar-21	Apr-21	May-21	Jun-21	Jul-21	Aug-21
331	27	38	386	112	287	192	117	117	127	145	154	151	252	252	252	31	380	257	257	252	251	252	152
332	151	171	112	252	151	19	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
333	27	26	31	37	112	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
334	24	21	35	35	37	35	37	35	37	35	37	35	37	35	37	35	37	35	37	35	37	35	37
335	31	35	-14	-171	-247	-147	-334	-147	-21	35	35	35	35	35	35	35	35	35	35	35	35	35	35
336	31	35	-14	-171	-247	-147	-334	-147	-21	35	35	35	35	35	35	35	35	35	35	35	35	35	35
337	21	35	-12	35	112	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150	150
338	33	31	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35	35
339	31	35	-12	-171	-247	-147	-334	-147	-21	35	35	35	35	35	35	35	35	35	35	35	35	35	35
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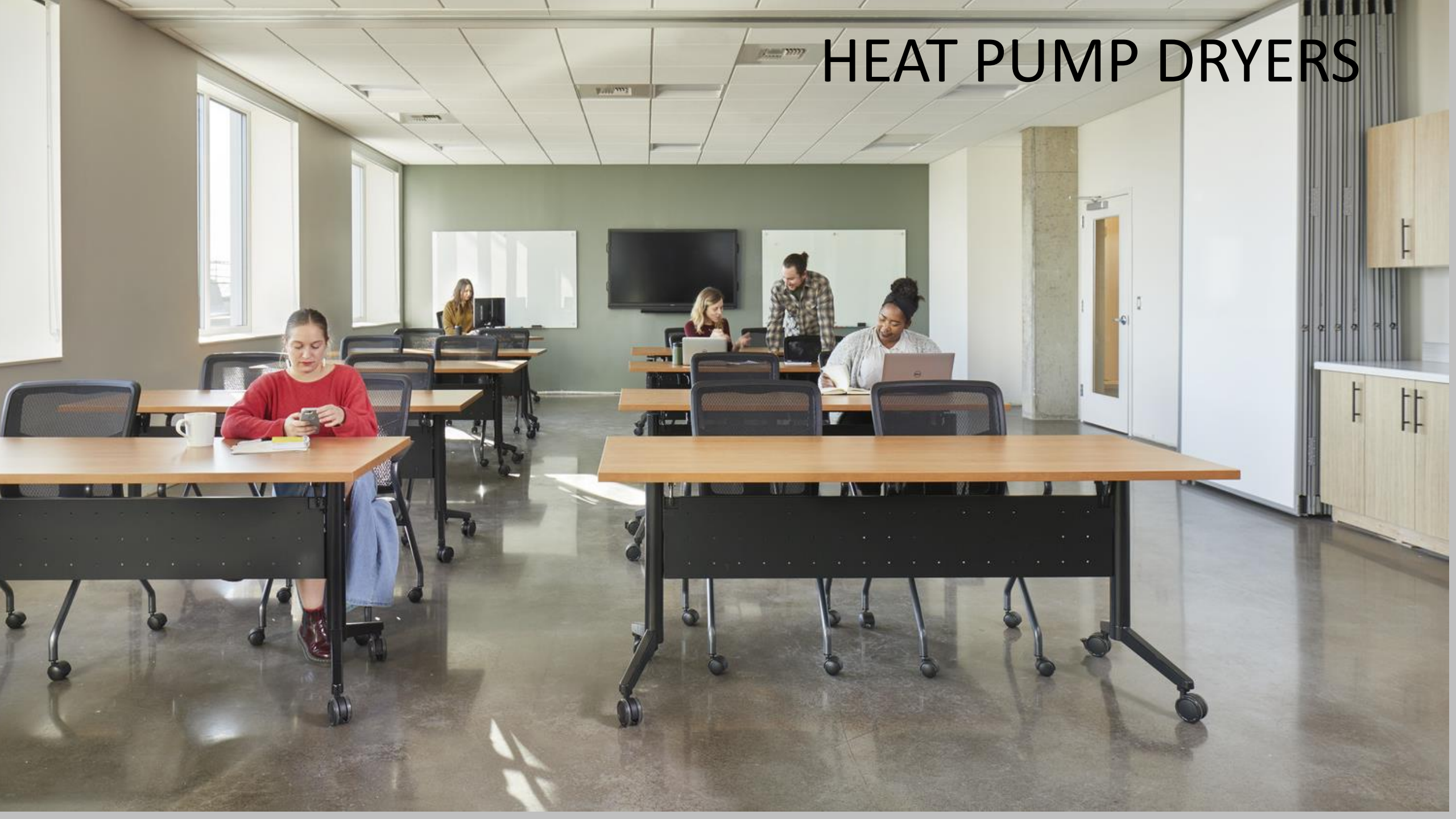
SMART THERMOSTATS



HEAT PUMP HOT WATER



HEAT PUMP DRYERS





QUESTIONS?

THANK YOU

Jon Hall

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