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35+ years
13,000+ homes
400+ awards
multifamily experts
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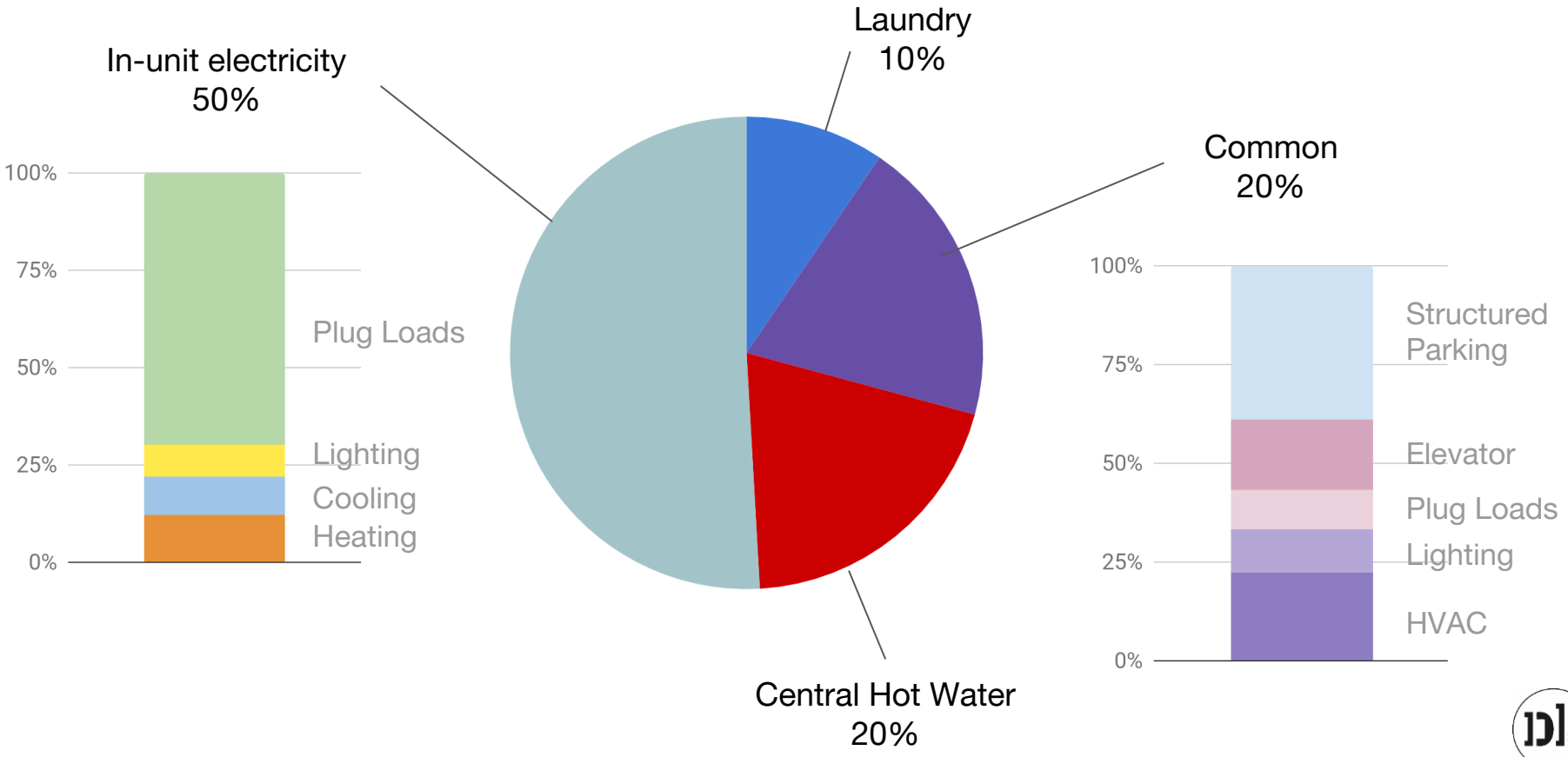
Coliseum Place Affordable Family Housing, Oakland, CA

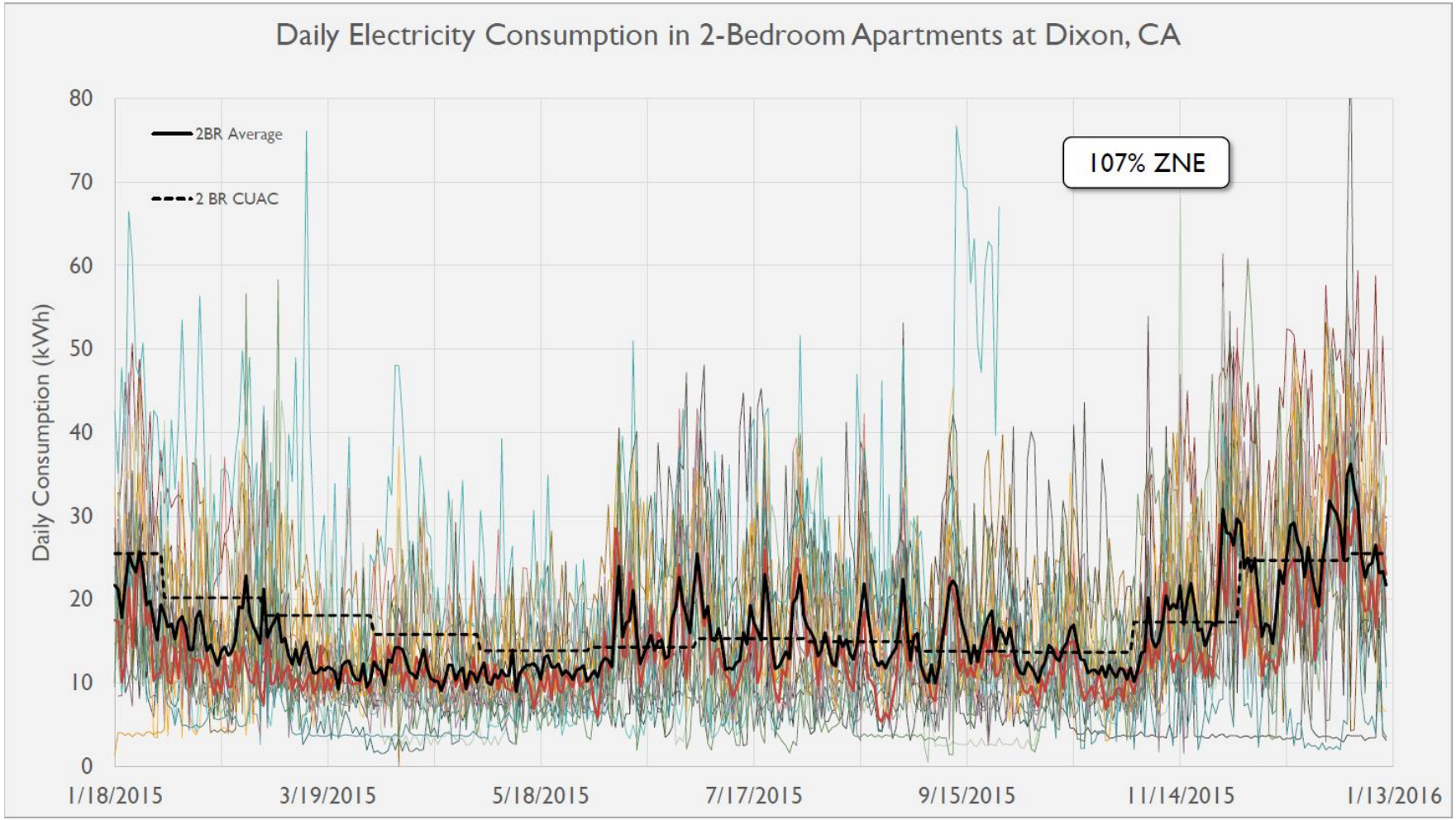
Zero Net Energy Goal

INTERNATIONAL LIVING FUTURE INSTITUTE℠

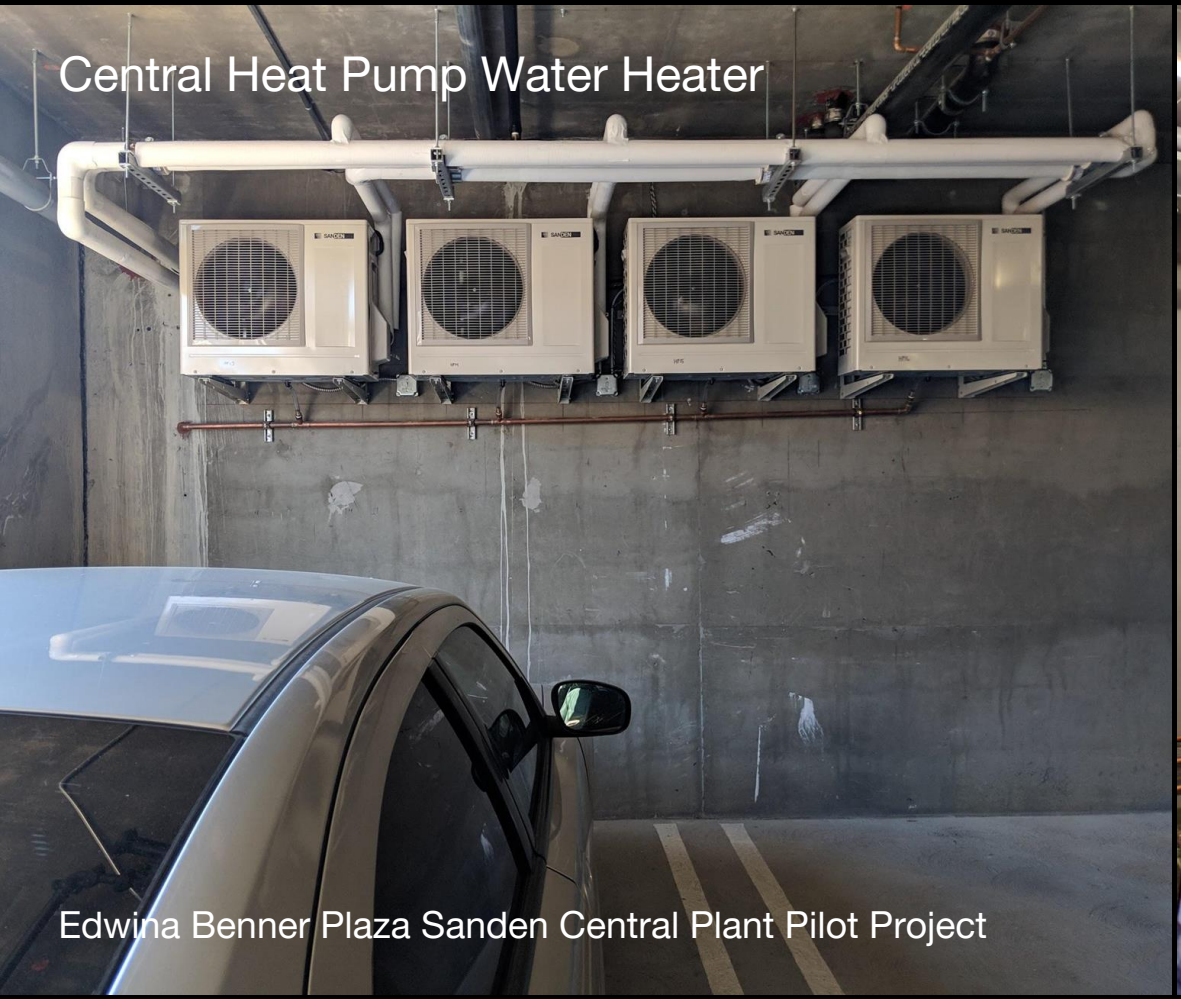
Affordable Housing Pilot

Energy Loads for Coliseum Place



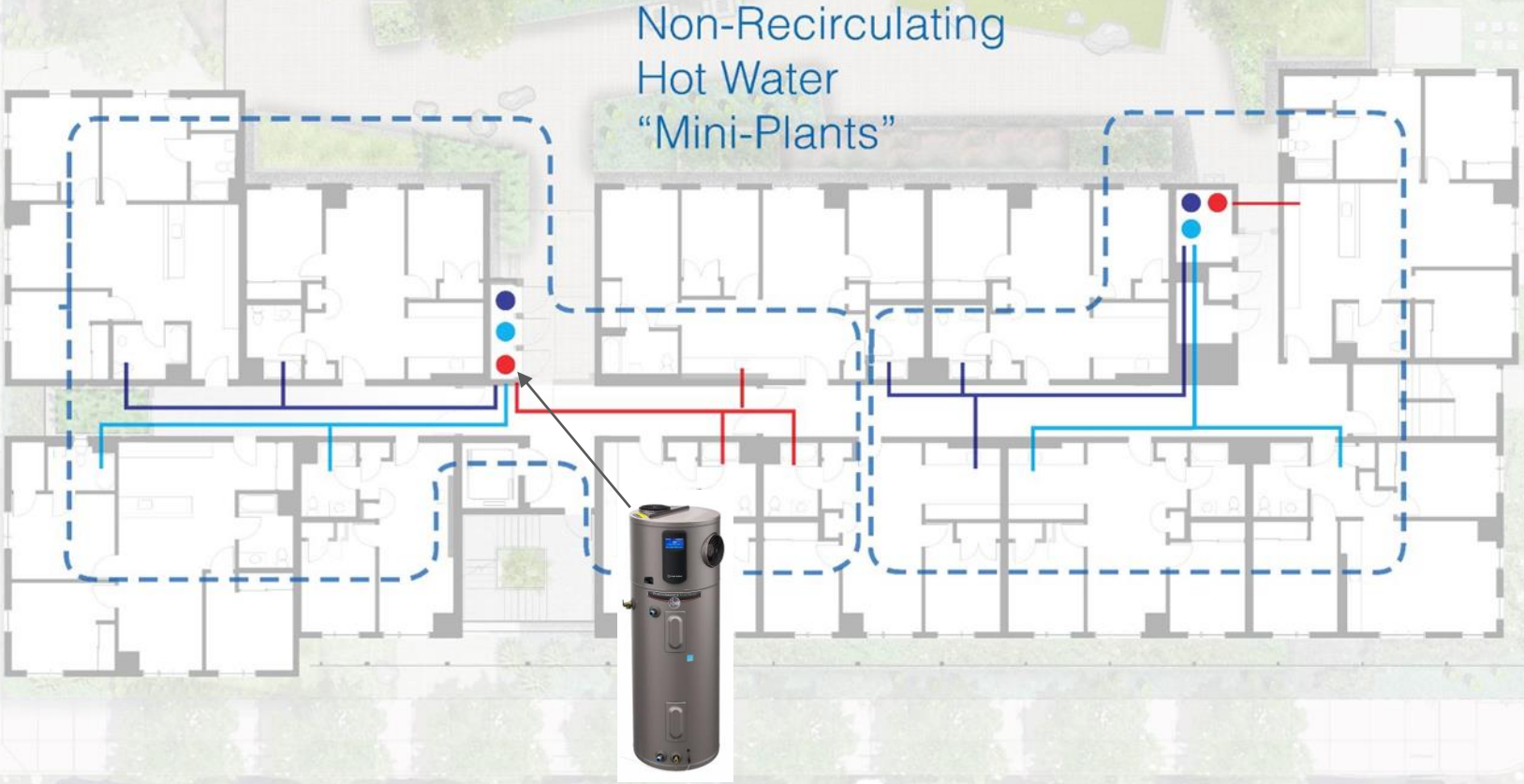

Daily Electricity Consumption in 2-Bedroom Apartments at Dixon, CA
2BR Average
2 BR CUAC
107% ZNE
Daily Consumption (kWh)
80
70
60
50
40
30
20
10
0
1/18/2015
3/19/2015
5/18/2015
7/17/2015
9/15/2015
11/14/2015
1/13/2016

Central Heat Pump Water Heater



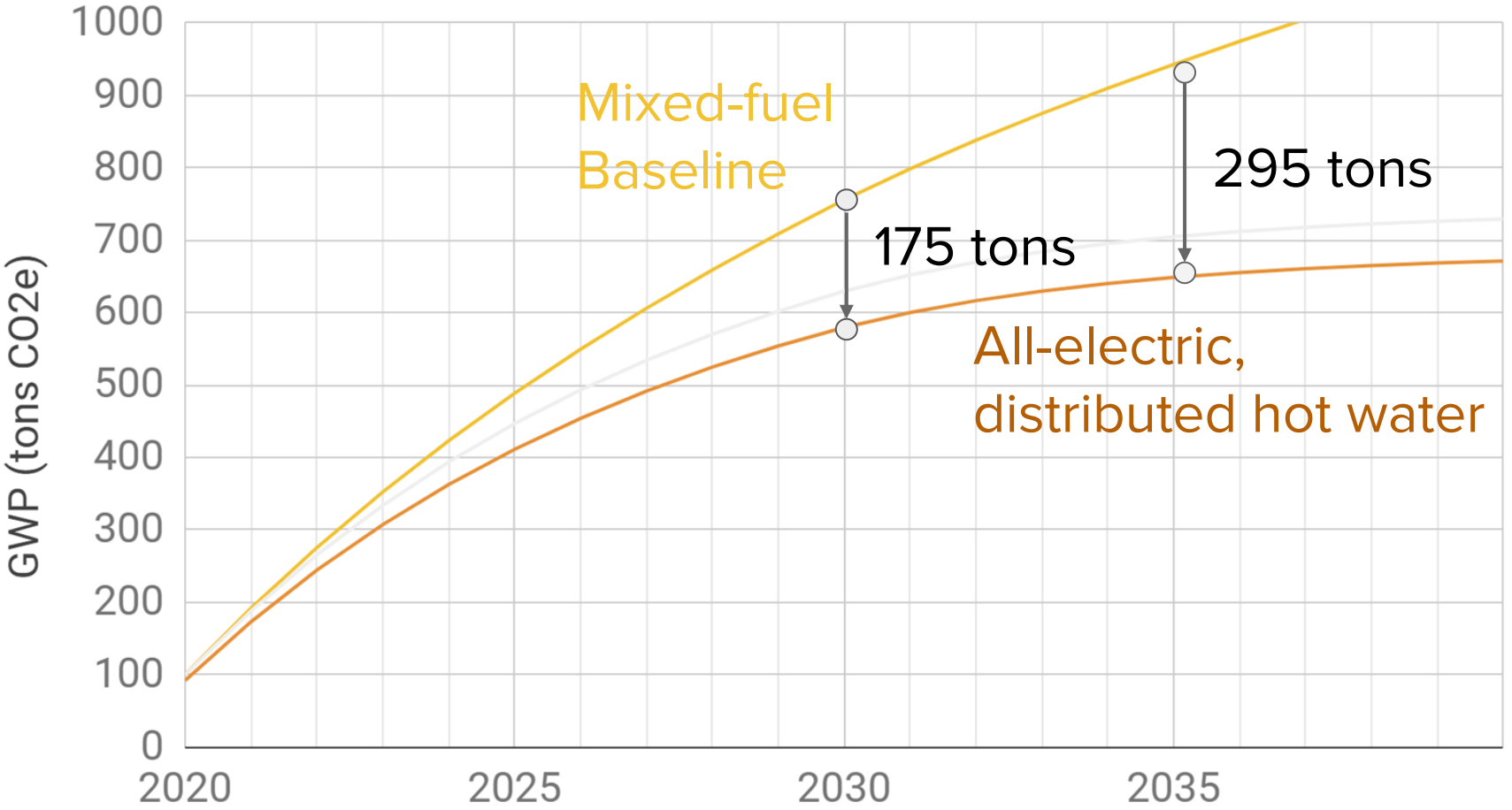
Edwina Benner Plaza Sanden Central Plant Pilot Project

Decentralized Hot Water

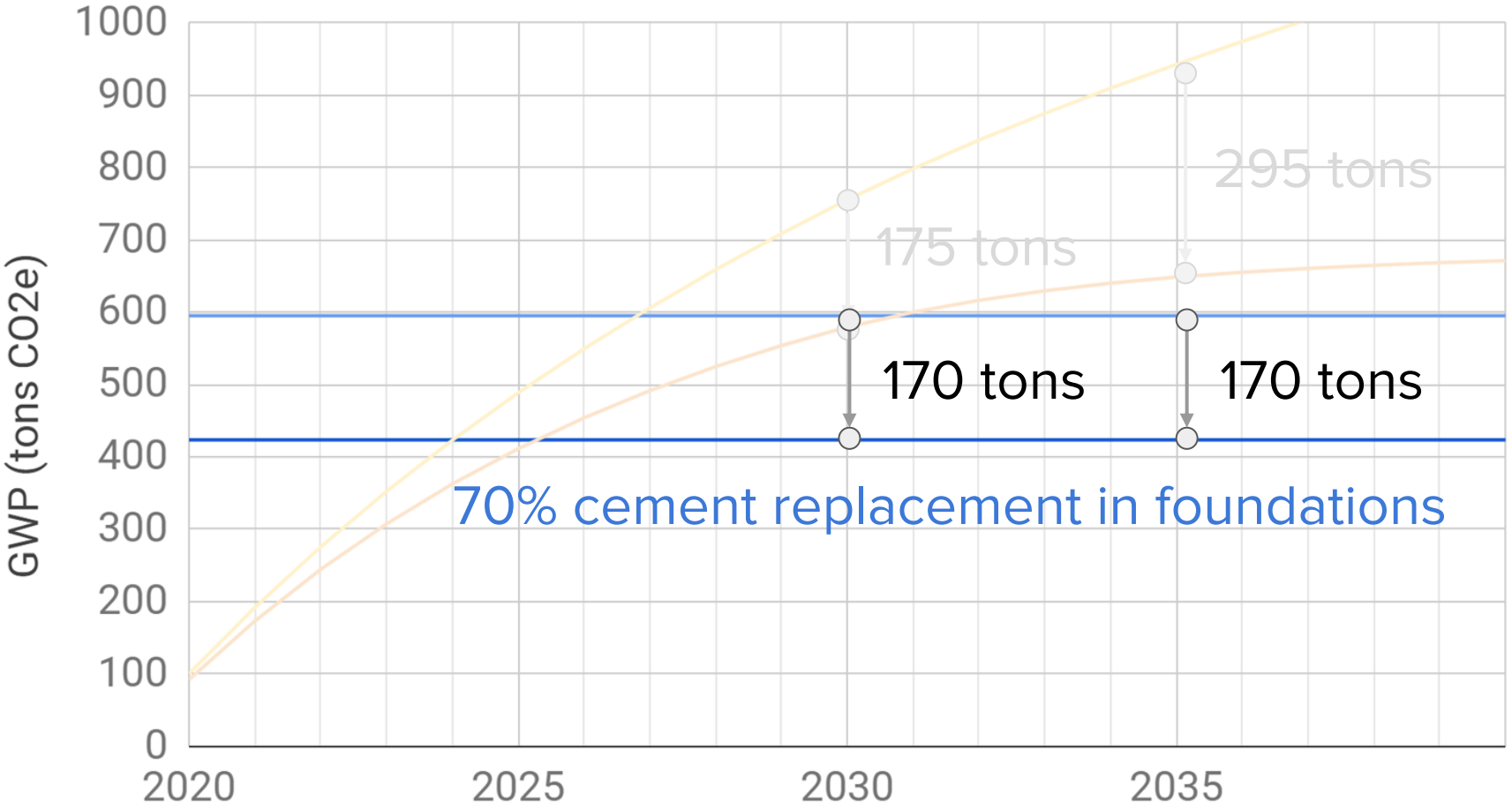


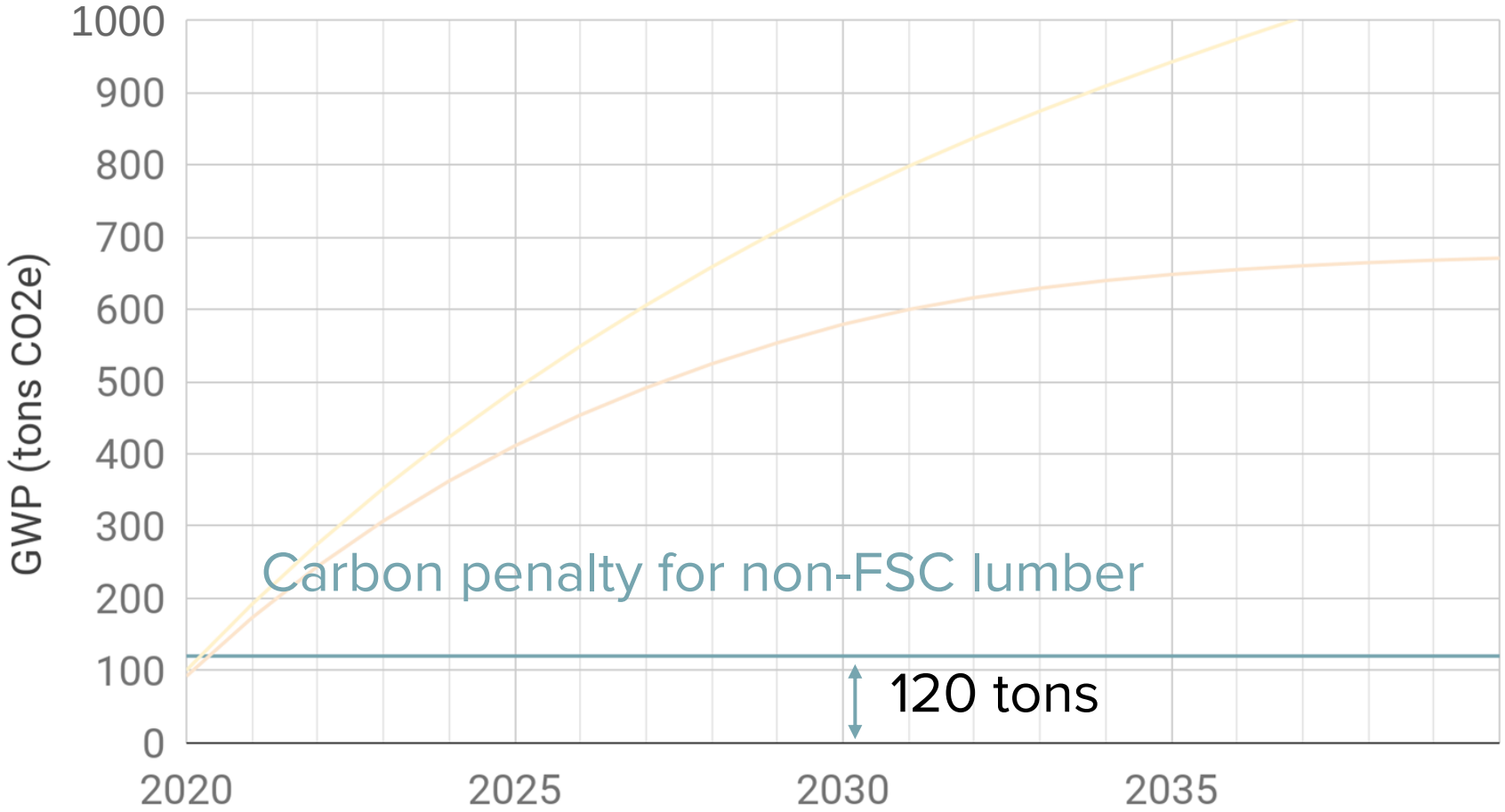
Decentralized Hot Water

Operational Carbon vs Embodied



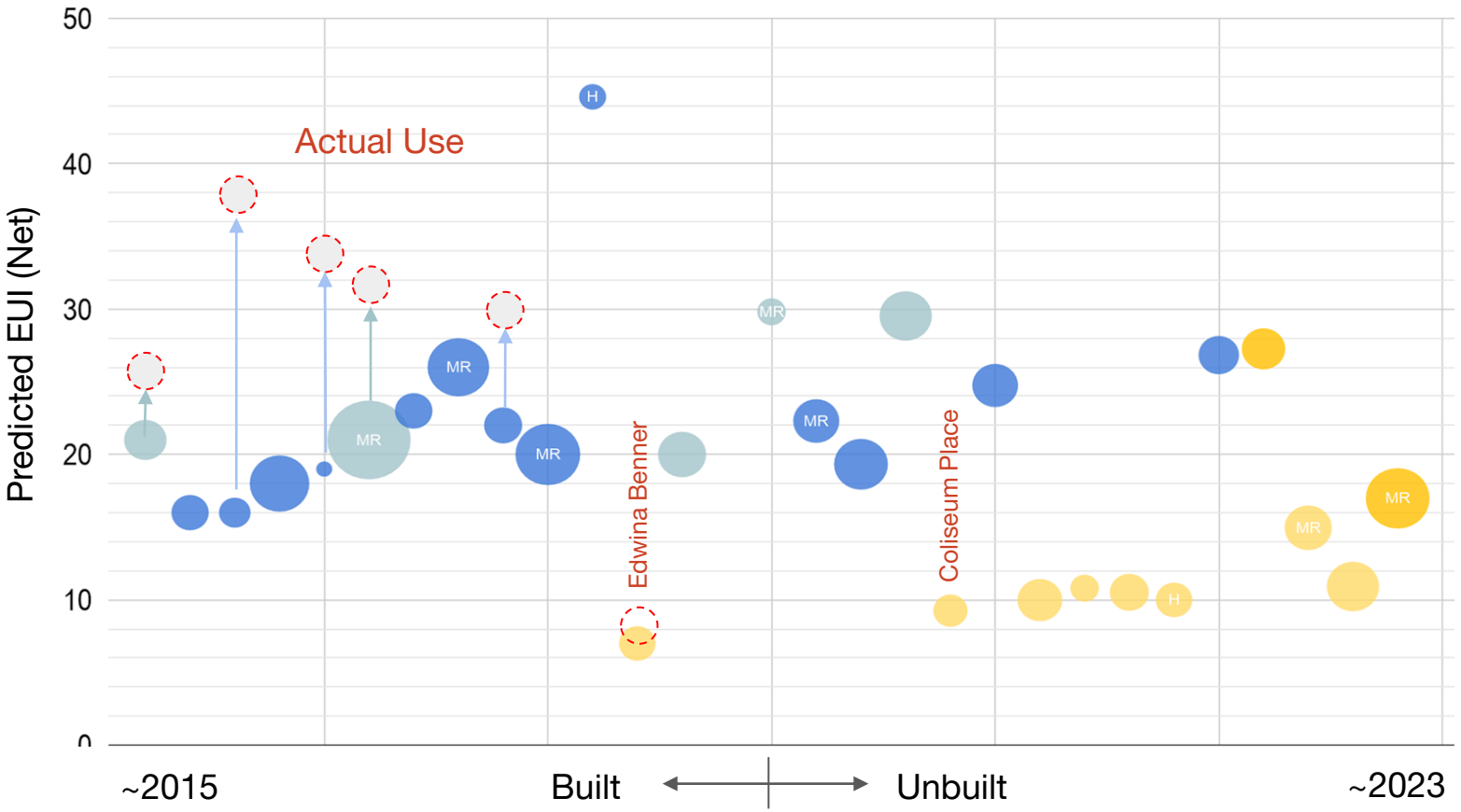
Operational Carbon vs Embodied




1000
900
800
700
600
500
400
300
200
100
0
GWP (tons CO2e)
2020
2025
2030
2035
Carbon penalty for non-FSC lumber
120 tons

DBA Portfolio Evaluation & Reporting

AIA 2030 Commitment



Predicted Use

- Conventional (w PV)
- Conventional (no PV)
- All-electric (w PV)
- All-electric (no PV)

MR Market Rate
H Hotel
Others Affordable

Size of Bubble = # of units

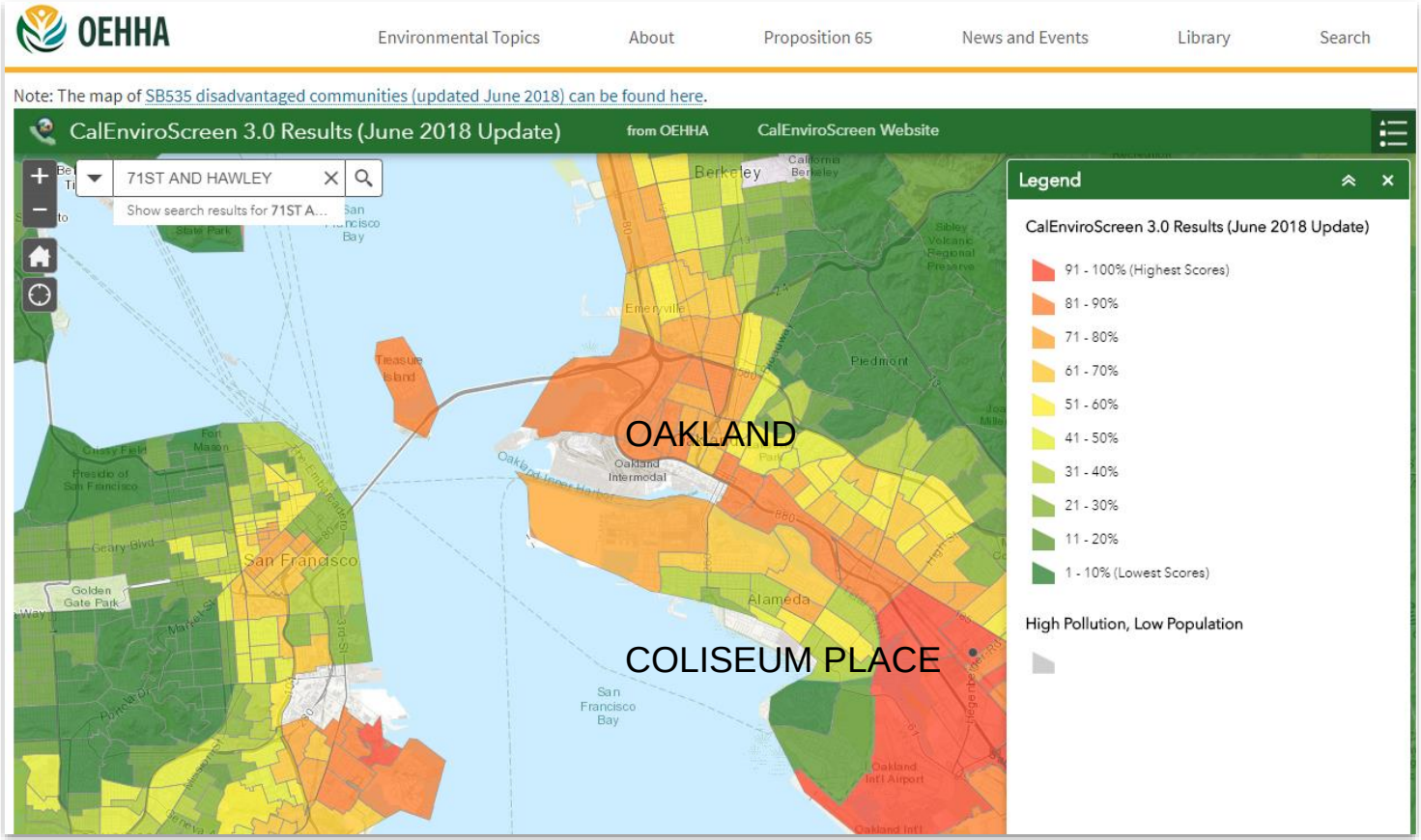
Buildings and Climate Change

1) Resources (energy, water, waste)
2) Renewable energy
3) Emissions reduction
4) Ecological impacts

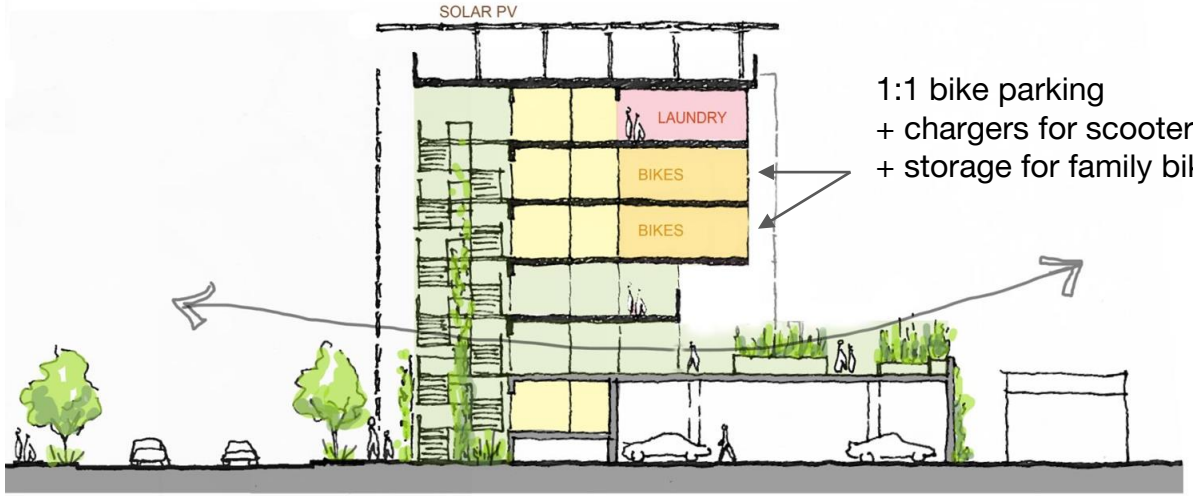
Housing and Climate Change

1) Resources (energy, water, waste)
2) Renewable energy
3) Emissions reduction
4) Ecological impacts
5) Density & displacement
6) Resident access to transit and micro-mobility
7) Social resilience
8) Economic participation & stability
9) Health, wellbeing & autonomy
10) Equal and fair access to innovation & adaptation

Fighting Environmental & Social Vulnerability



Access to Nature, Innovation, Affordable & Efficient Mobility



1:1 bike parking
+ chargers for scooters, wheelchairs
+ storage for family bike accessories

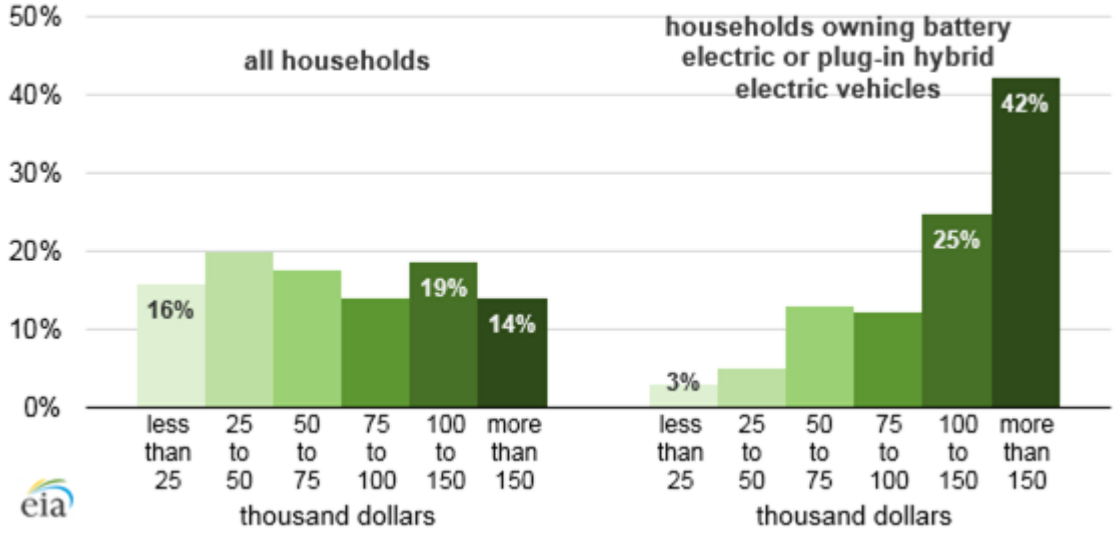
BART
(1 block)

...next time...

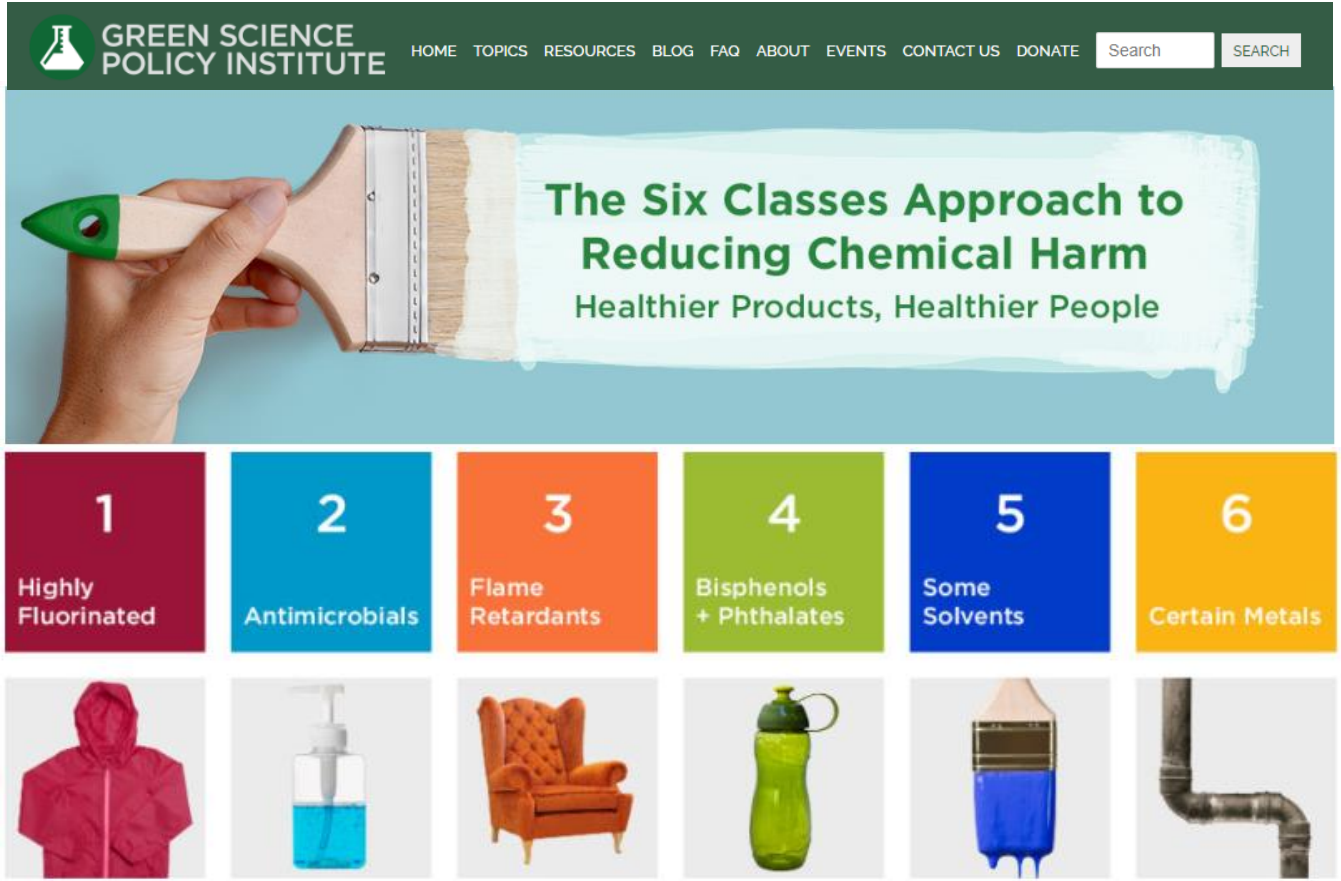
1:3 parking, 100% EV-primed

Access to Nature, Innovation, Affordable & Efficient Mobility

U.S. Household Income Distribution and EV ownership



Access to a Non-Toxic Indoor Environment



Related Product News

A Cheat Sheet for Decoding Vinyl Product Literature

Healthy Building Network recently demo'd our approach to product research for the Community of Practice team in Seattle. In preparation for the call, we reviewed product literature for a vinyl sheet floor that had been specified for their demonstration project, and matched that agains...

Spectrum of Flooring Options Now Includes Ceramic Tiles

Healthy Building Network and the HomeFree team have now had a chance to talk with several communities of practice, working hard to incorporate healthy materials guidance into their varied - but all amazing - affordable housing projects. As part of these conversations, we have highlighted ...

Brief: Post-Consumer Flexible Polyurethane Foam Scrap Used In Building Products

Carpet cushion (that soft layer installed between a sub-floor and a carpet) is made from flexible polyurethane foam (FPF). Generally that foam is recycled scrap from the manufacture of furniture, such as couch cushions, or old carpet cushion itself. Healthy Building Network's research into ...

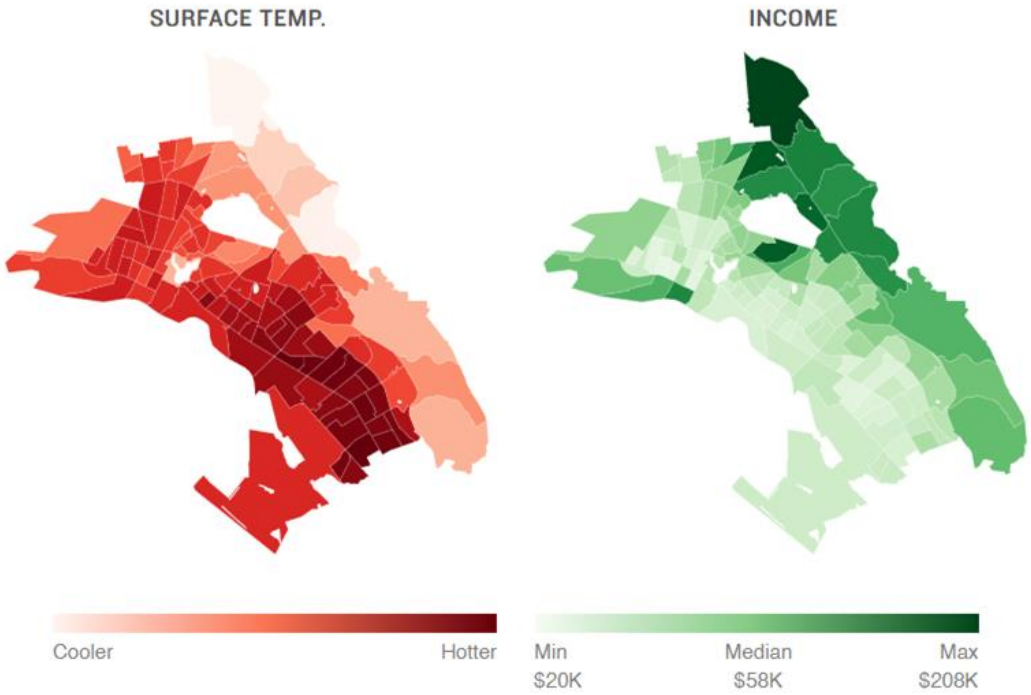
How Common Product Profiles Help Inform Product Decisions

On the Products section of HomeFree, in addition to individual products, visitors will now see Common Product Profiles (CPs for short). These Common Product

- Linoleum
- Pre-finished solid wood floors
- Pre-finished engineered floors
- Ceramic Tiles (made in the USA/Lead-free)
- Biobased floors
- Rubber or rubber/cork floors made without crumb rubber
- Laminate
- Carpets
- Finished on-site engineered floors
- New formulations of vinyl floors
- Ceramic Tiles (not made in the USA/presence of Lead is unknown)

Climate Change Adaptation

Heat and Income in Oakland



Climate Change Adaptation

Overheating Study, Mission District

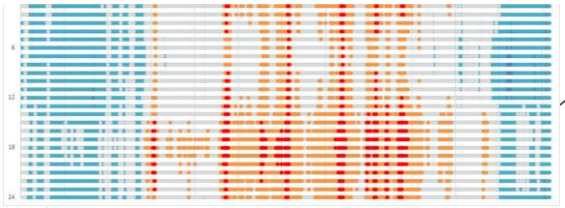
Max Indoor Air Temperatures without West Facing Courtyard Sunshades
View from South West

Image: Bright Green Strategies

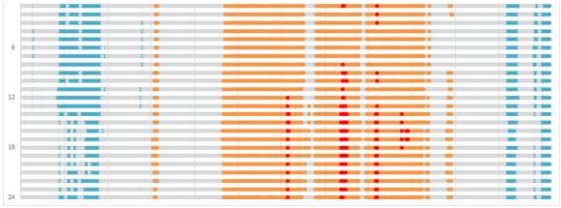
Climate Change Adaptation

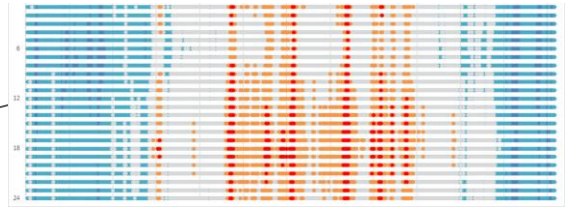
Indoor temperatures by unit

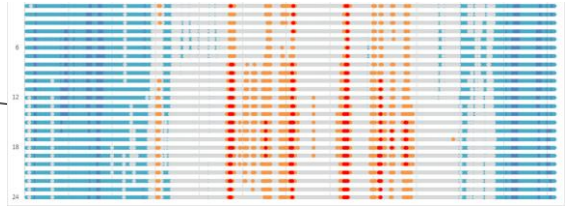
Passive Performance - HVAC is off
No windows open

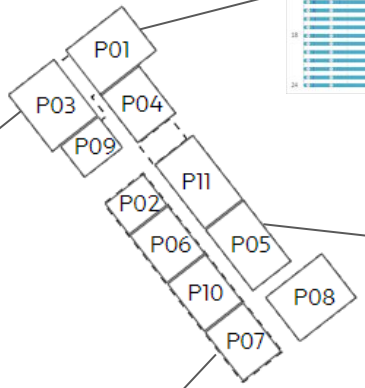


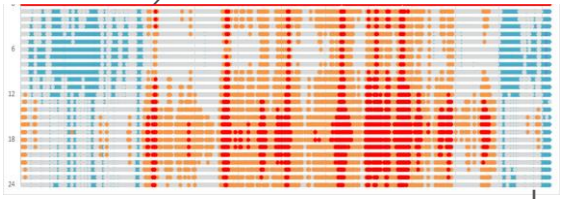
With overhangs
& increased air sealing

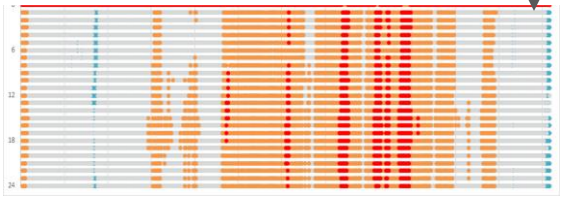




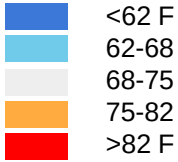








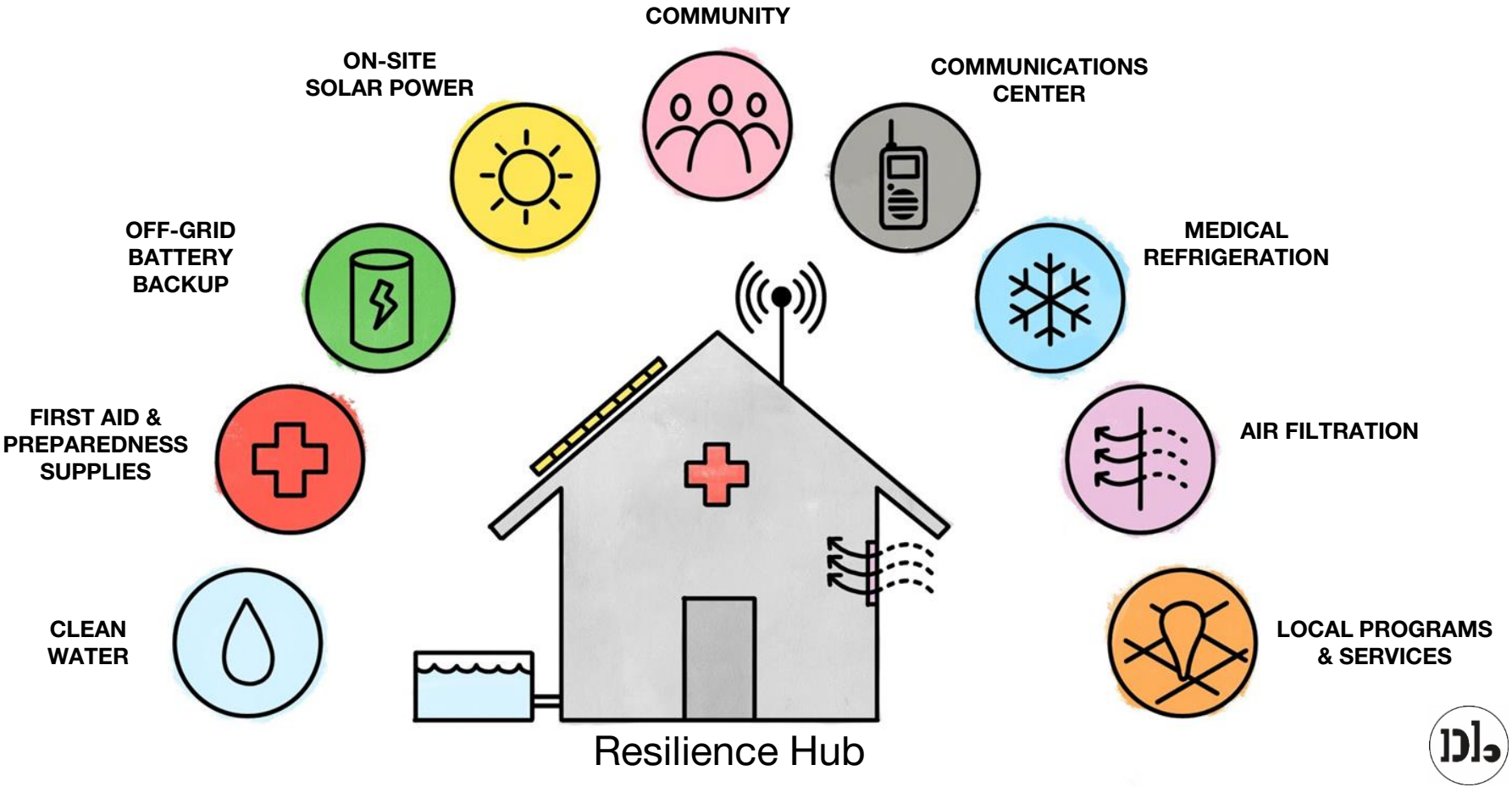
With shade screen
& increased air sealing



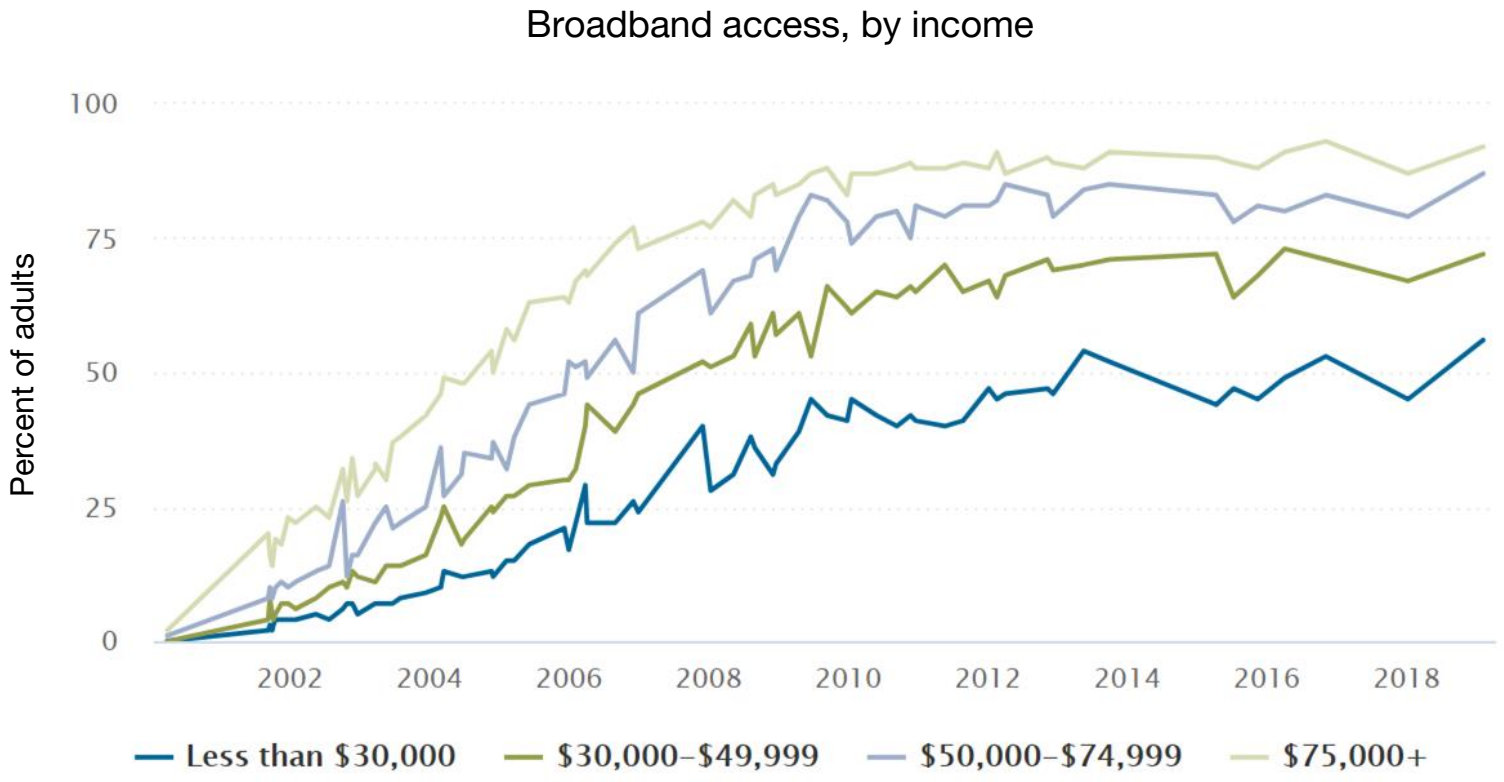
Climate Change Adaptation

Air Quality Index (PM2.5) in Oakland During the Camp Fire, 2018

Climate Change Adaptation



Economic participation & stability



Source: Pew Research Center

Economic participation & stability

Free Building Wi-fi

Self-Serve Library

San Francisco Public Library

Park w/ BBQ's & Community Garden

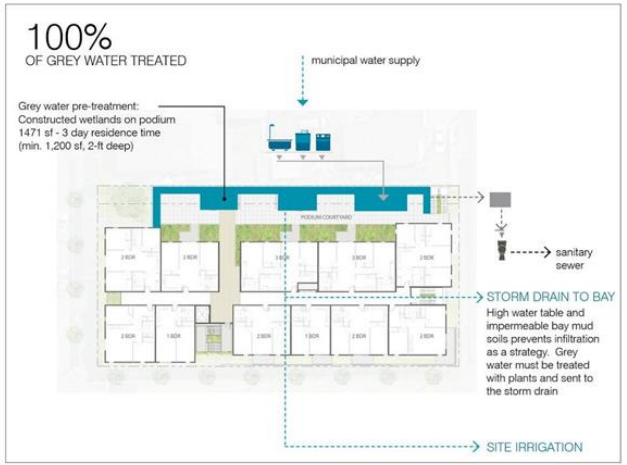
Kitchen/Cafe & Produce

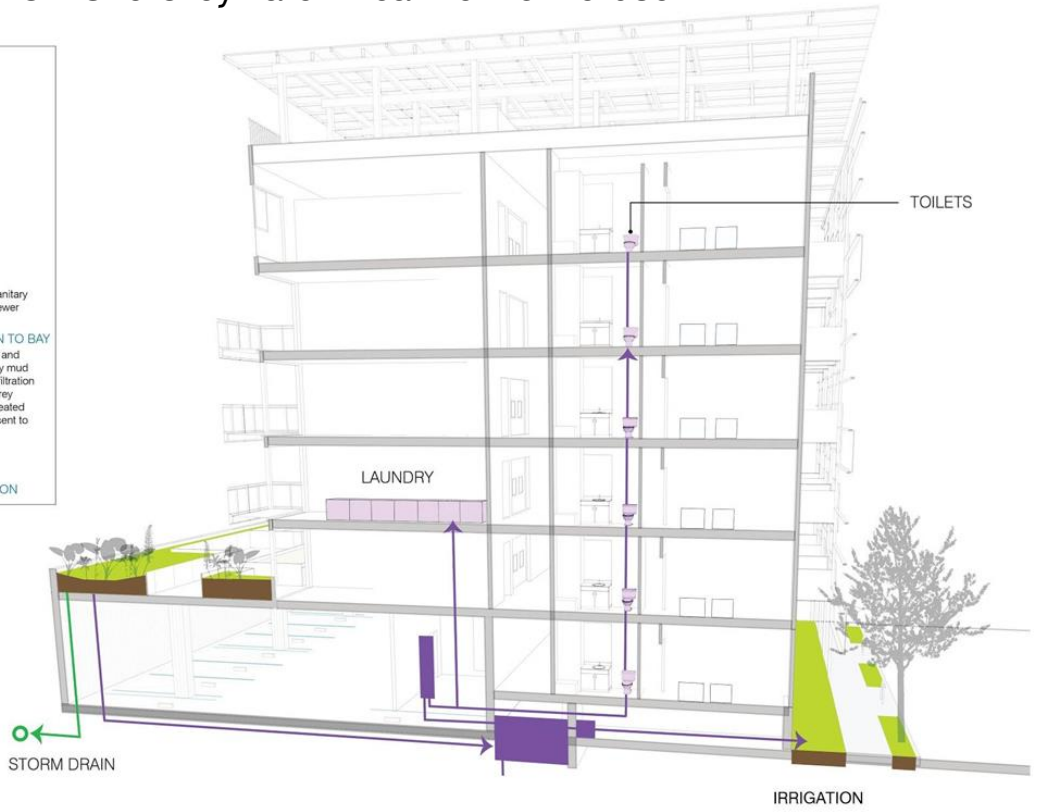
La Cocina

Peaches Patties
A JAMAICAN KITCHEN

When I Said “Housing as Infrastructure”...

Planning for On-Site Greywater Treatment & Re-use





Proposal would include a 4000 gallon storage tank, and **a custom treatment system** for indoor use.

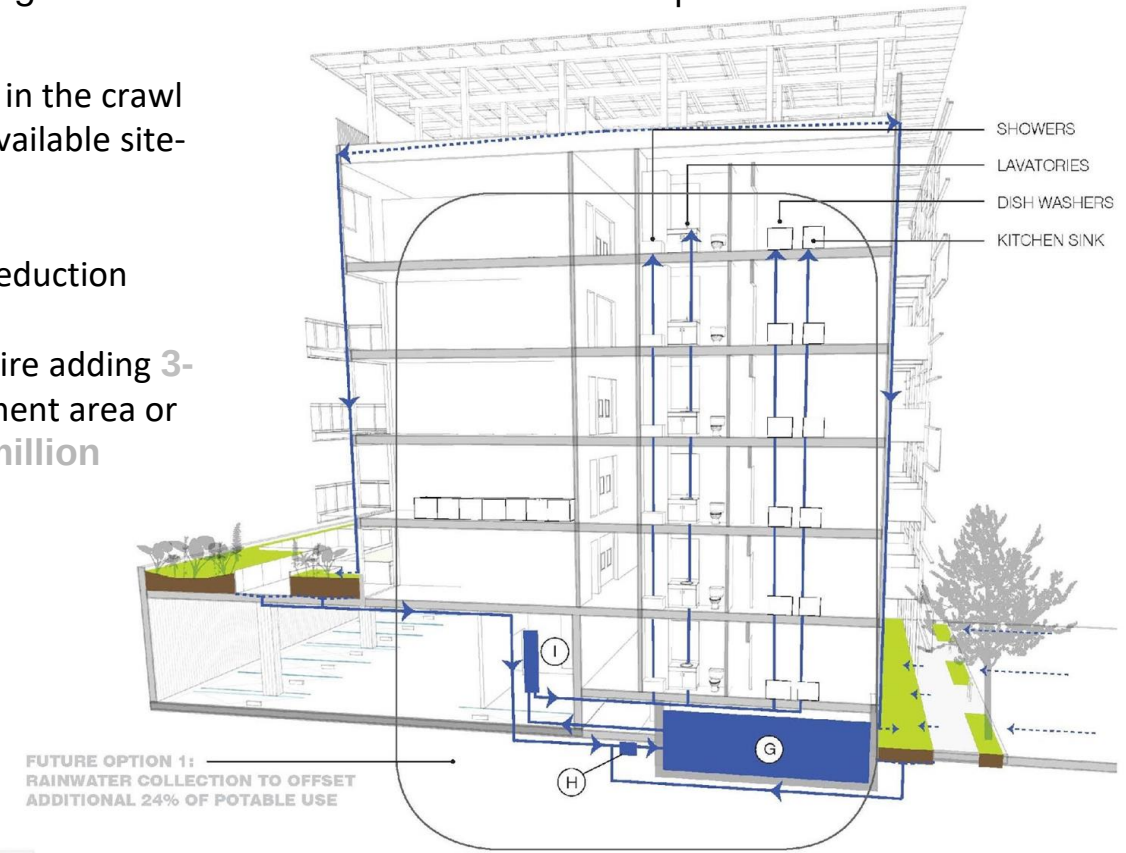
When I Said “Housing as Infrastructure”...

Planning for Site-Sourced Water: Rainwater Capture

A **25,000 – 30,000 gallon cistern** in the crawl space, would be sufficient to store available site-sourced rainwater.

This would offer an additional 24% reduction

Reaching net-zero water would require adding **3-4 times the current site** in catchment area or otherwise creatively offsetting **1.2 million gallons per year**



When I Said “Housing as Infrastructure”...

Planning for Site-Sourced Water: Blackwater treatment

An on-site black-water treatment system (Aquacell) could use **4-8 times the amount of energy per unit water treated** compared to municipal blackwater treatment, according to a study by Hyphae Design.