

HQ Vancouver

Sustainability Action Plan



HURLEY
DEVELOPMENT



Newcomb & Boyd
CONSULTANTS AND ENGINEERS

Certification Strategy Menu



ENVISION™

THE Sustainable
SITES
Initiative®



Multiple rating systems have been investigated for this project. Utilizing a multi-faceted approach, elements from several rating systems will be incorporated into design standards to demonstrate Hurley's commitment to sustainability in a manner that best fits the needs of the development and community.

Certifications Pursued



SILVER



SILVER



THREE STARS

LEED v4



Opportunities

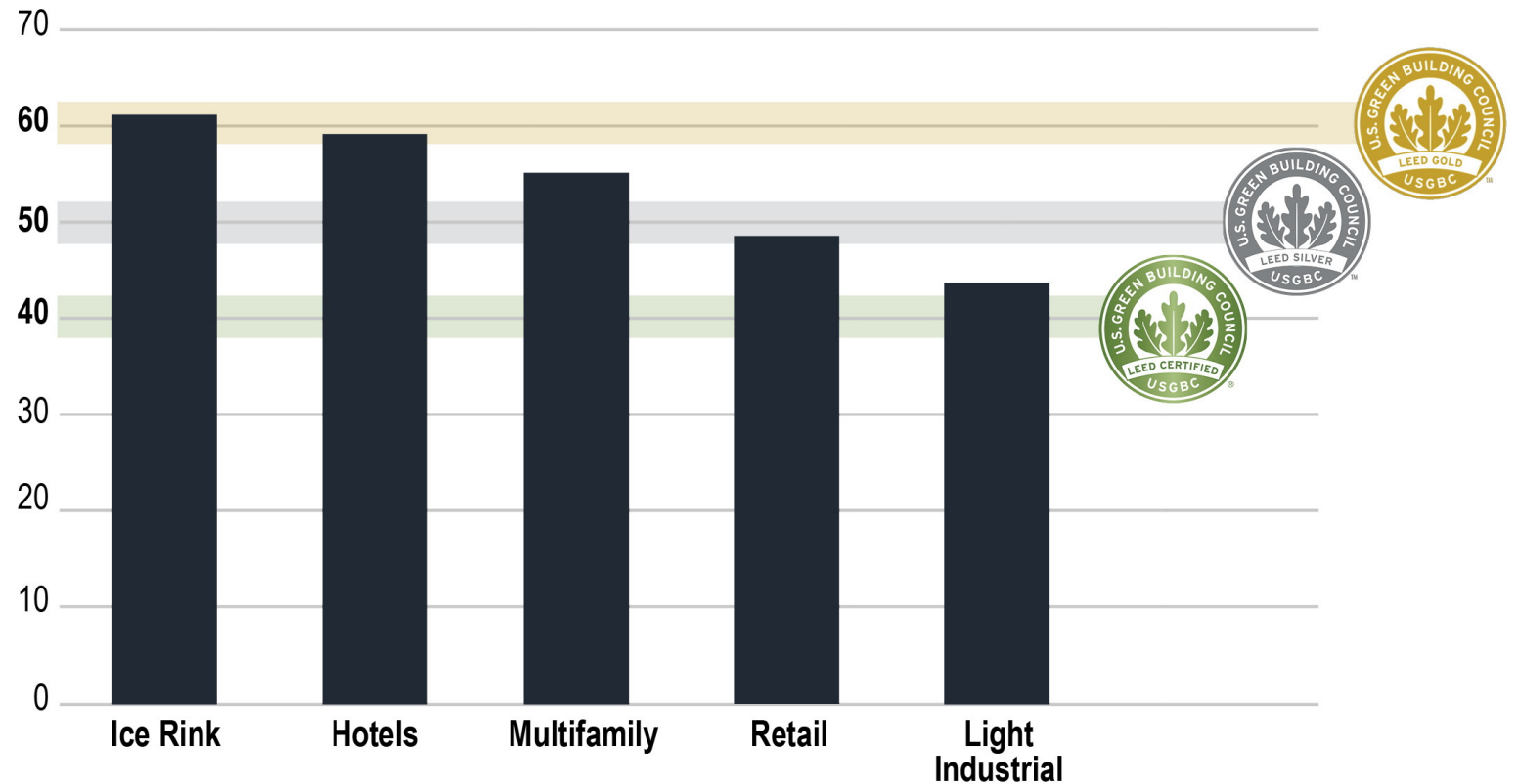
- Coordination with Vancouver around solar opportunities can earn additional points.



Roadblocks

- Location and Transportation
- Limited energy savings opportunities for core & shell

LEED Points by Project Type

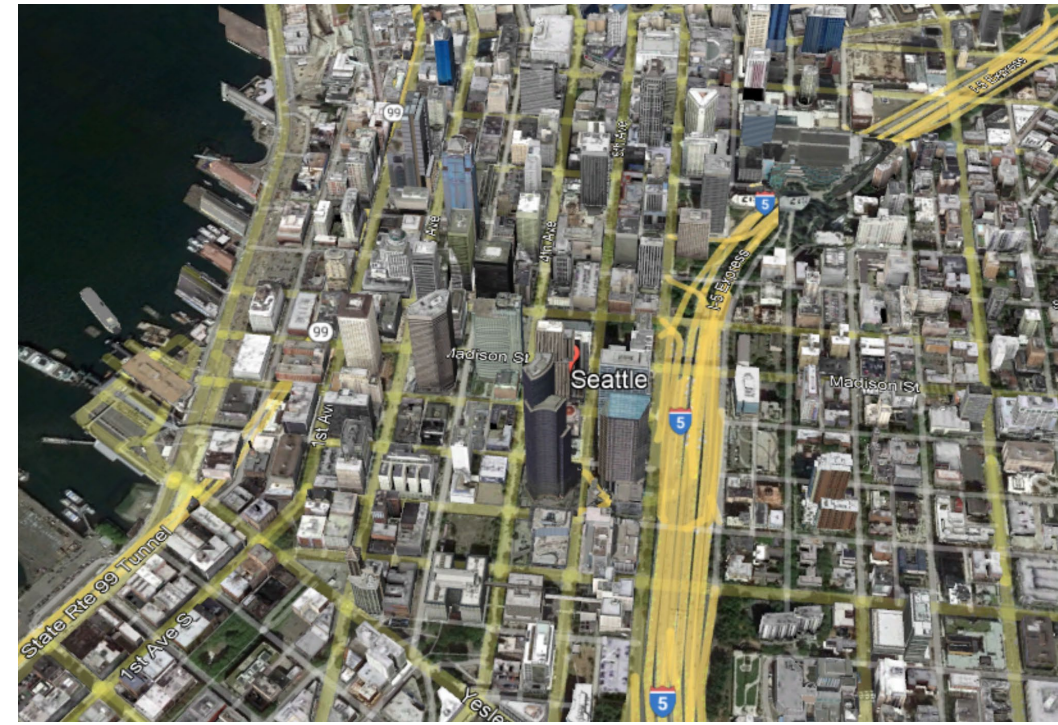


LEED: Location Matters

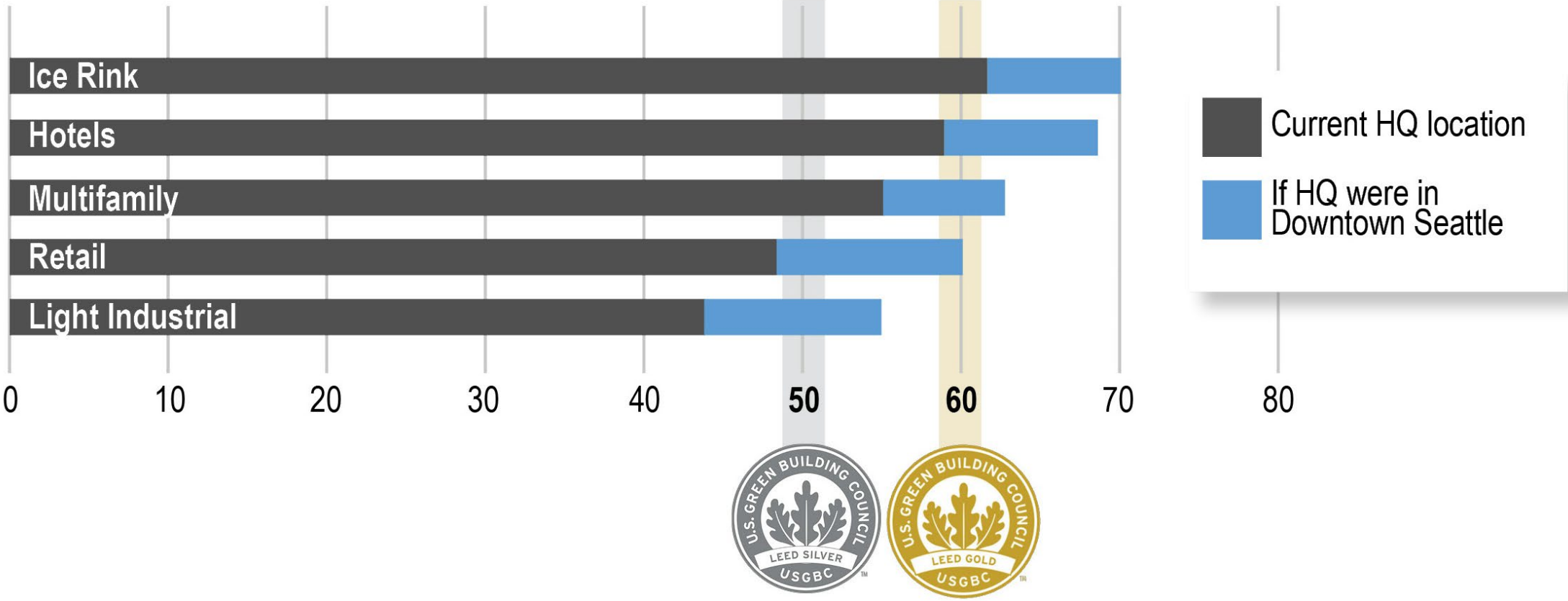
A multifamily building in Seattle will **automatically earn 8 points more** than the same multifamily building located at the HQ site. This can mean the difference between Silver and Gold.

Why?

- Public Transportation Access (5 points)
- Surrounding Density (3 points)



LEED: Location Matters



Envision v3



What is Envision?

Envision is a third-party certification that provides a framework for assessing sustainability, resiliency, and equity in civil infrastructure.

While the main focus of the LEED rating system is vertical infrastructure, **Envision's focus is the project site from conception to end-of-life.**

“Envision was designed to help infrastructure stakeholders implement more sustainable, resilient, and equitable projects.

Envision helps communities cut greenhouse gas (GHG) emissions, create good-paying ‘green’ jobs, address environmental justice, and meet climate-change targets.

Infrastructure owners and design teams, community and environmental groups, constructors, regulators, and policymakers can all benefit from using Envision.”

Envision v3



Institute for
Sustainable
Infrastructure

“The purpose of Envision is to foster the dramatic and necessary improvement in the sustainable performance and resiliency of physical infrastructure...”



Quality Of Life



Leadership



Resource Allocation

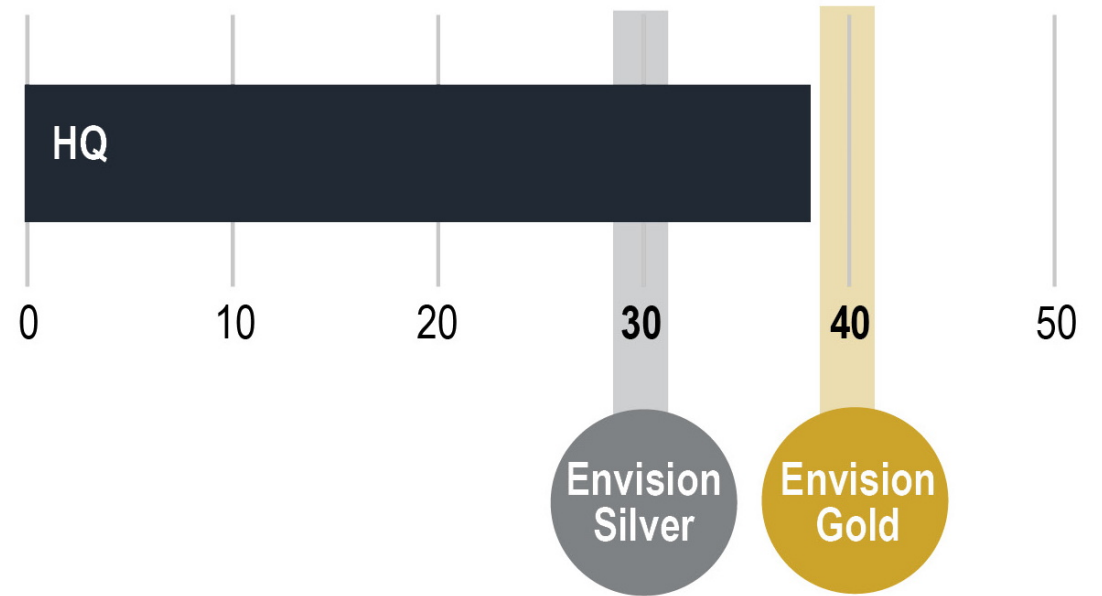


Natural World



Climate And Resilience

Envision Points



Site

	LEED	WELL	Fitwel	Green Globes	ENVISION
EV charging	X				X
Community Destinations	X	X	X		X
Walk/Bike Trails	X	X	X	X	X
Shared Cargo Bicycles and Bike Parking	X	X		X	X
Locate on Previously Developed Land	X		X	X	X
Open Space / Outdoor Amenities	X	X	X	X	X
Native/Adapted Vegetation	X				X
Wayfinding			X		X
Street Trees	X		X		X
Light Pollution Mitigation	X		X	X	X
Noise Mitigation			X		X
Irrigation Water Reduction	X			X	
Rainwater Management	X			X	X
Tree Preservation	X			X	X
Erosion and Sedimentation Control	X			X	X



Spire Smart Building Certification

Certification Levels: 1 star (low) to 5 stars (high)

Pursuing: ★ ★ ★

Sustainability
IT Infrastructure Connectivity
Health and Well-being

Power and Energy
Cybersecurity and Data Security
Life and Property Safety



Smart Building



Smart parking

- As a visitor, ability to easily navigate to my destination
- As a visitor, ability to find parking when I need it

KPI

Persona: Owner/Operator/Tenant/Visitor

- Increase Parking Space Utilization
- Decrease time to parking space
- Reduce number of incidents in parking area



Smart facilities

- As a facilities operator, I want an easy way to create work orders
- As a facilities operator, I want to efficiently receive notifications about issues

** This use case also applies to the tenant's experience: An efficient way to receive notifications about their residence*

KPI

Persona: Owner/Operator

1. Reduce response time to resolve issues
2. Decrease un-scheduled down-time by 'X%'
3. Improve fault/defect identification & resolution time
4. Improve productivity of the workforce

Smart Building



Smart Energy + Sustainability

- As a tenant, I want the ability to see how HQ is performing in terms of energy usage and to be informed about how I can contribute to the community effort in reducing energy usage
 - *Compare HQ's usage to others across the nation*
 - *To gain buy-in from all tenants, everyone needs to know the key KPIs*
- As an operator, I want the ability to manage all assets proactively, rather than rely on reactive maintenance of systems
 - *Receive notifications of system issues immediately, before damage is caused*

KPI

Persona: Owner/Operator

1. Reduce energy consumption
2. Reduce carbon footprint
3. Increase percentage of renewable energy
4. Reduce waste created in the facility (water, energy, solid)



Digital Signage

- As a tenant, I want access to bi-directional signage (e.g., a kiosk) that provides details about points of interest in the community, how to navigate to points of interest, and community regulations
 - *Kiosks throughout the community to communicate with the virtual agent*
- As a tenant, I want digital signage that navigates me to convenient parking and informs me about available parking options

KPI

Persona: Tenant/Visitor

1. Increase brand awareness and Identity for commercial/retail/entertainment spaces
2. Faster navigation to points of interest (POI's)
3. Increase unification of digital signage journey
4. Decrease customer frustration due to modality switches



SMART BUILDING FRAMEWORK



ELECTRIC METER



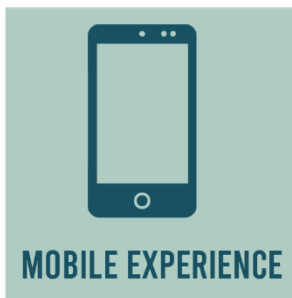
DATA CENTER



LABORATORY



AUTOMATED
COMMISSIONING



MOBILE EXPERIENCE



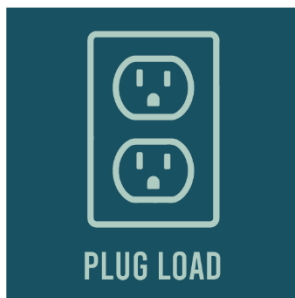
BUILDING
AUTOMATION



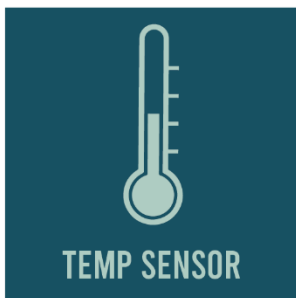
DASHBOARD & KIOSKS



MEASUREMENT
VERIFICATION



PLUG LOAD



TEMP SENSOR



SINGLE BUS
WORKSTATION



FAULT DETECTION



ENTERPRISE
SCHEDULING



LIGHTING CONTROL

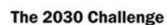


ALARMING

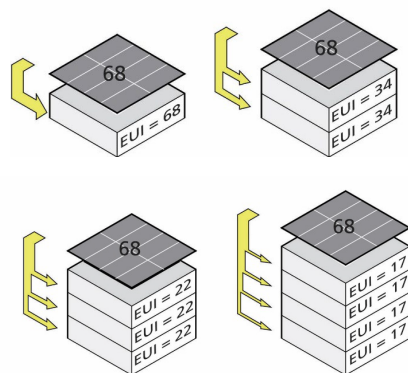


DEMAND RESPONSE

Establish an Energy Target!



Source: ©2015 2030, Inc. / Architecture 2030. All Rights Reserved.
*Using no fossil fuel GHG-emitting energy to operate.



Smart Building Dashboard - 12-month Performance

SITE DETAILS



All Meters ▼

WEATHER - ATLANTA, GA



Clear

68 °F

73 °F / 45 °F

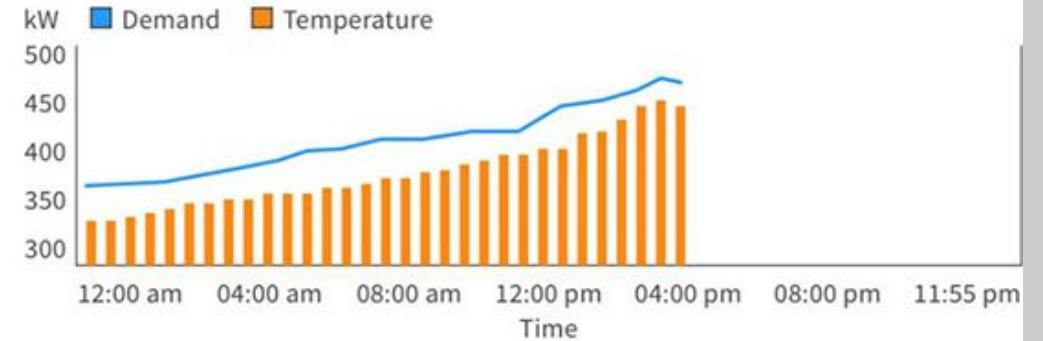
Humidity: 64 %

Precipitation: 0.0 in

Sunrise: 7:37 am

Sunset: 6:17 pm

WEATHER IMPACT ON ELECTRICITY DEMAND



ELEC PRODUCTION & CONSUMPTION

Production (Solar)

2,100.0 kWh

↑ 5.4 % from previous period

Consumption (PV + Grid)

900.0 kWh

↓ 3.2 % from previous period

ELECTRICITY PRODUCTION vs. CONSUMPTION - 2019

Production: 140,000.0 kWh Consumption: 80,000.0 kWh Net +/- Rating: + 2.1 %

Day

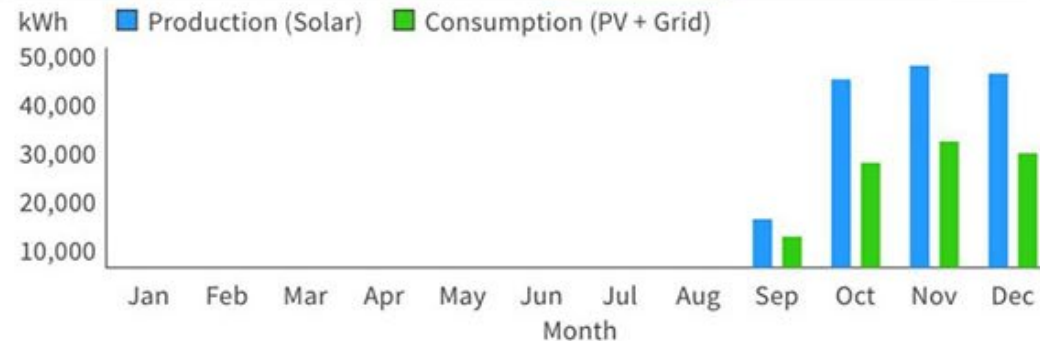
Week

Month

Year

Opening
To Date

2019 ▼



TOTAL ENERGY COST



COST

\$240.00

75.0 % to Target

↓ 4.1 % from previous period

Metering / Monitoring

	Multifamily units	Office	Light Industrial	Retail	Sports Arena	Campus
Solar photovoltaic energy generation	x	x	x	x	x	x
Total bldg/unit electricity consumption/demand	x	x	x	x	x	
Waste Management	x	x	x	x	x	x
Chilled water and Hot water BTUs		x	x	x	x	x
Hot water and chilled water pump energy usage		x	x		x	x
Interior lighting		x	x	x	x	
Exterior lighting		x	x		x	x
Weather monitoring						x
Receptacle / large process loads		x	x	x	x	
Elevator energy usage	x	x	x		x	
HVAC fan energy usage		x	x	x	x	

	Multifamily units	Office	Light Industrial	Retail	Sports Arena	Campus
HVAC power consumption		x	x	x	x	
Rainwater collection	x	x	x		x	x
Condensate collection		x	x		x	x
Greywater / Blackwater collection						x
Irrigation - potable water usage	x	x	x		x	x
Domestic potable water usage	x	x	x	x	x	
Total energy cost per square foot	x	x	x	x	x	x
Total water/sewer cost per square foot	x	x	x	x	x	
Ventilation air volumes	x	x	x	x	x	
IAQ data (CO2, VOCs, PM2.5)	x	x	x	x	x	x
Carbon Monoxide	x (If gas source provided)	x	x		x	x (Parking decks)

Water – Rainwater Reuse



Like the Seattle Kraken's Climate Pledge Arena, HQ will utilize rainwater to create ice in the arena.

Additionally, rainwater will be collected for toilet and urinal flushing in the Ice Rink building.

<https://fb.watch/bLrhaU5lfS/>

Water



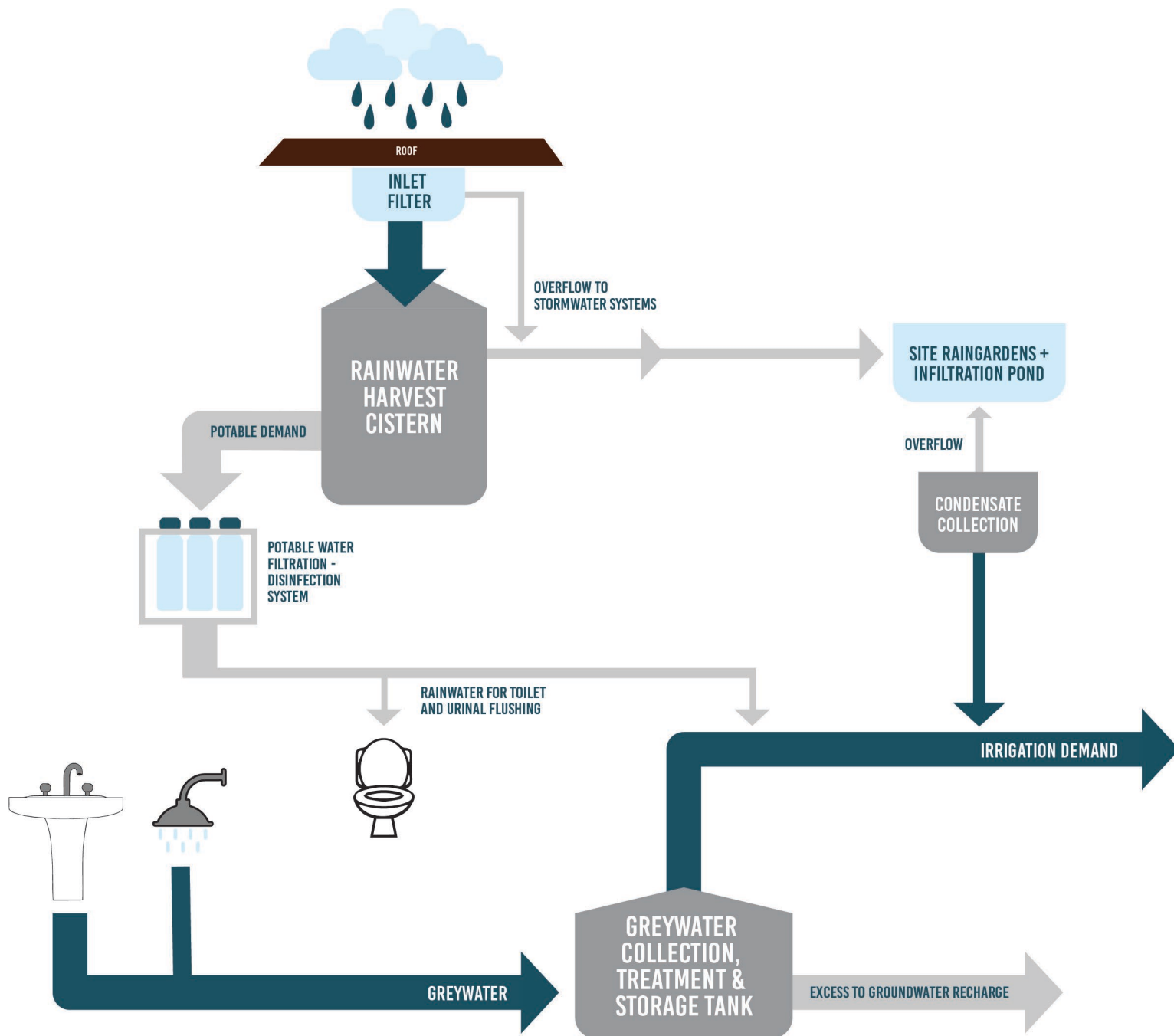
Opportunities

- Rainwater and condensate collection
 - Irrigation
 - Ice Rink
 - Toilet flushing



Roadblocks

- Only rainfall on building roofs can be captured and reused. Rainfall on site cannot be captured and reused. (RCW 90.03 and 90.46.130)
- Irrigation via collected/stored rainfall (from roof) is restricted (BMP T5.20)



Energy



Carbon Action Plan

- Reduce building energy demand

Energy Use Reduction

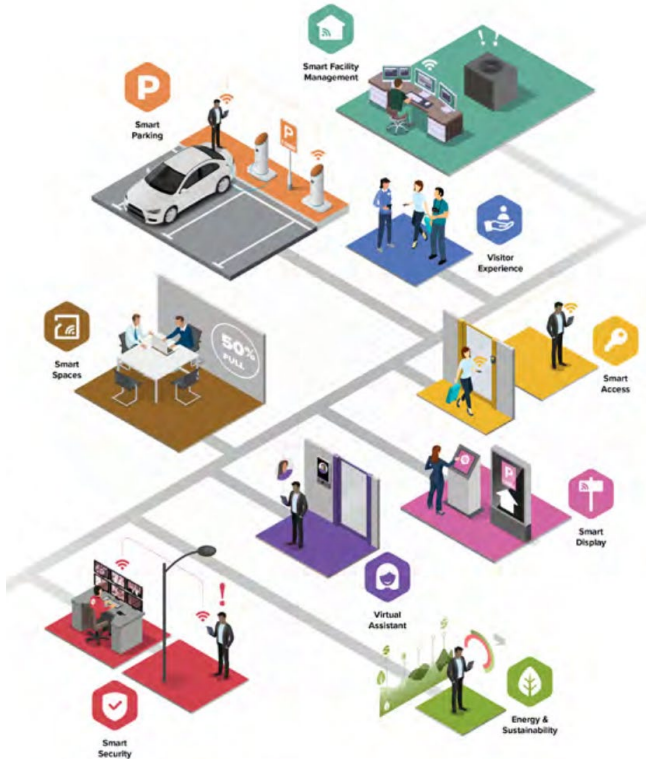
- A. Meet or exceed latest state energy code which leads the nation in building energy reduction
- B. Provide energy metering and transparency to occupants to drive operational energy reductions
- C. Set a goal to have building designs beat code baselines, and beat LEED baseline building energy cost by 20% for Multifamily, Hotels, and Ice Rink, and 10% for core & shell (retail, light industrial)

Energy



Carbon Action Plan

- Reduce building energy demand



Smart Building Infrastructure

- Incorporate controls to reduce energy consumption in unoccupied spaces, decrease lighting energy consumption by utilizing daylight harvesting sensor technology.
- Identify how HQ is performing as it relates to energy usage and provide owners and occupants with strategies to contribute to energy savings.
- Provide fault detection and diagnostics (FDD) to continuously identify the presence of faults and target opportunities for improved energy efficiency.

Solar



Carbon Action Plan

- Reduce building energy demand

Hurley Actions

- A. Provide all properties with solar ready infrastructure
- B. Provide solar to serve all retained (owned/operated) properties
- C. Advocate and try to partner with Clark PUD, Northwest Natural Gas, and City of Vancouver to use development as test case for community renewable energy

Electric Vehicle Destination

Partnerships

EV Gateway (LA
Metro & Microsoft)

Tesla

Encourage Carbon-neutral Lifestyle

- 300+ EV spaces at HQ plus 300 EV-ready spaces
- Reporting metrics will be shared with city and public:
 - EV visitors per month
 - # of residents with EV's
 - Carbon emissions reduction due to EV use at HQ
- Applications will drive interest of EV owners to visit HQ:
 - EV Gateway
 - Google Map points of interest
 - Gamification
- HQ supports fleet programs and taxi superchargers



Decarbonization



Carbon Action Plan

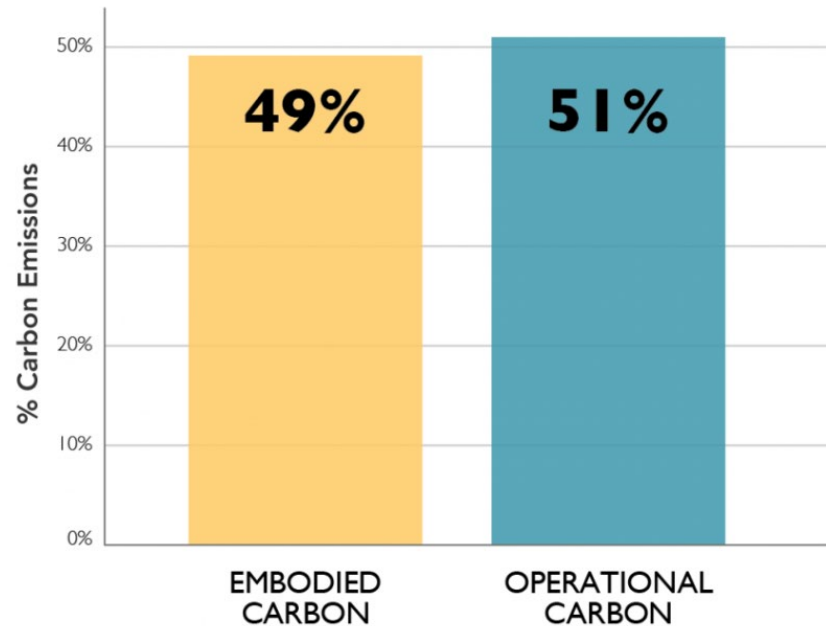
- Analyze low-carbon power sources available for building heating/cooling and cooking

Hurley Actions

- A. Team with utilities to understand and advance their decarbonization efforts and timelines
- B. Work toward decarbonization through efficiency, on-site renewables, and low-carbon power sources
- C. Provide site and building solutions tailored to use and needs of different building types

Embodied Carbon

Total Carbon Emissions of Global New Construction
from 2020-2050
Business as Usual Projection



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Embodied carbon will be responsible for *almost half* of total new construction emissions between now and 2050

Embodied carbon is the sum of greenhouse gas emissions released for a product or system during the following life-cycle stages: raw material extraction, transportation, manufacturing, construction, maintenance, renovation, and end-of-life.

Embodied Carbon

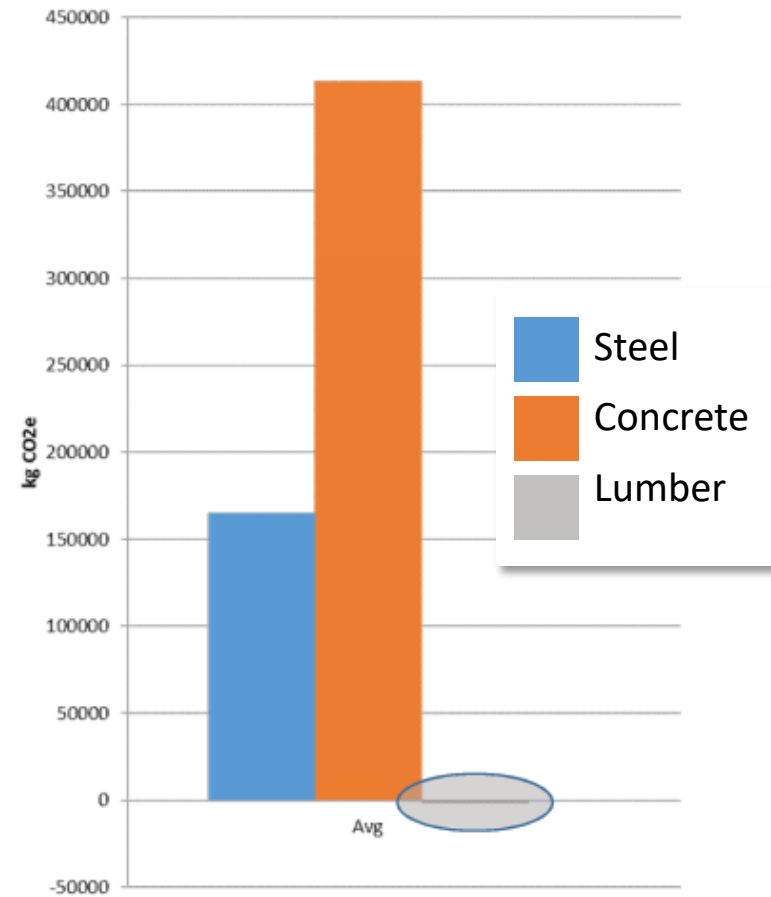


Opportunities

- Structural materials
- Recycled materials
- Material reuse

STRUCTURAL SYSTEMS AVERAGE CO2

(42,000 SF BUILDING IN ATLANTA)



SOURCE: Lawrence Berkeley National Lab B-PATH Tool

Indoor Air Quality

Indoor Air Quality (IAQ) Monitors in:

- All Multifamily units and Hotel Rooms.
- IAQ monitors in ice rink, retail, and light industrial according to RESET Core & Shell guidance.

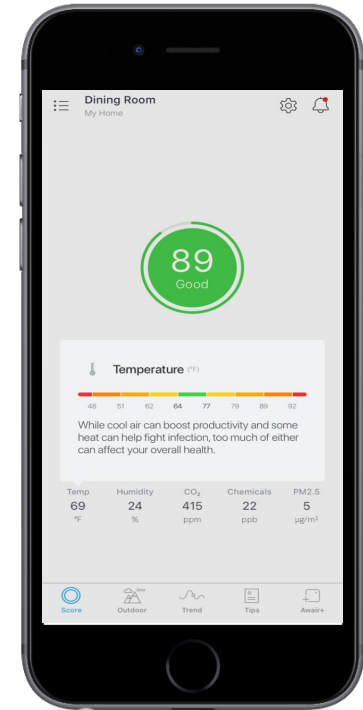
Residents and visitors will be able to see their IAQ in their space in real time.

Smart Technology can tie in IAQ sensors to building management alerts and HVAC functionality to optimize IAQ in occupant spaces.



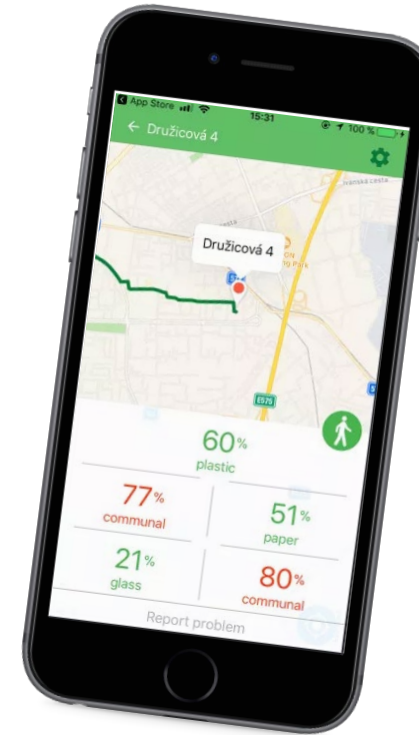
Occupant Comfort

Smart Thermostats and Lighting Controls



Waste

Smart Waste sensors, Dashboard and Metrics



BIN FILL LEVEL

Now

43%

COSTS PER ROUTE

Total costs

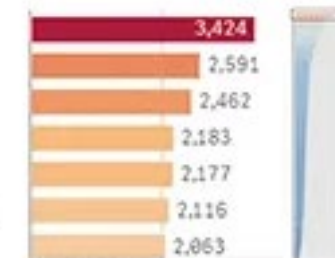
1,887,690

Average costs per route

3,575



COSTS PER TONNE



Appendices

1. LEED Scorecard
2. ENVISION Scorecard
3. HQ Contributions to Vancouver Climate Action Plan



Links to Educational Resources



1. Climate Pledge Arena – Water Reuse for Ice Rink
 - a. <https://fb.watch/bLrhaU5lfS/>
2. Embodied Carbon
 - a. <https://se2050.org/resources-overview/embodied-carbon/>
3. Renewable Natural Gas
 - a. What is Renewable Natural Gas?
 - i. https://afdc.energy.gov/fuels/natural_gas_renewable.html
 - b. NW Natural initiatives
 - i. <https://www.nwnatural.com/about-us/the-company/newsroom/2022-renewable-energy-survey>
 - c. Clean Energy Transformation Act – Requires Washington’s electric utilities to eliminate carbon emissions from energy resources by 2045.
 - i. <https://www.utc.wa.gov/regulated-industries/utilities/energy/conservation-and-renewable-energy-overview/clean-energy-transformation-act>
 - d. Climate Commitment Act – Sets a cap on greenhouse gas emissions in Washington, pushing fuel suppliers and power plants to reduce emissions and use cleaner energy.
 - i. <https://ecology.wa.gov/Air-Climate/Climate-change/Reducing-greenhouse-gases/Climate-Commitment-Act>
4. Water Reuse
 1. Rainwater harvesting in Clark County (RMP T5.20): <https://clark.wa.gov/sites/default/files/dept/files/environmental-services/Stormwater/Code/ccsm2015-book-2.pdf>
 2. Rainwater collection in Washington: <https://ecology.wa.gov/Water-Shorelines/Water-supply/Water-recovery-solutions/Rainwater-collection>
 3. Rainwater collection clarification for RCW 90.03: <https://apps.wa.gov/docs/WaterRights/wrwebpdf/pol1017.pdf>
 4. RCW 90.03 Water Code: <https://app.leg.wa.gov/rcw/default.aspx?cite=90.03>
 5. RCW 90.46 Reclaimed Water Use: <https://app.leg.wa.gov/rcw/default.aspx?cite=90.46&full=true>
5. Gamification of waste collection
 - a. https://www.researchgate.net/publication/326310245_Use_of_Gamification_Techniques_to_Encourage_Garbage_Recycling_A_Smart_City_Approach_13th_International_Conference_KMO_2018_Zilina_Slovakia_August_6-10_2018_Proceedings

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