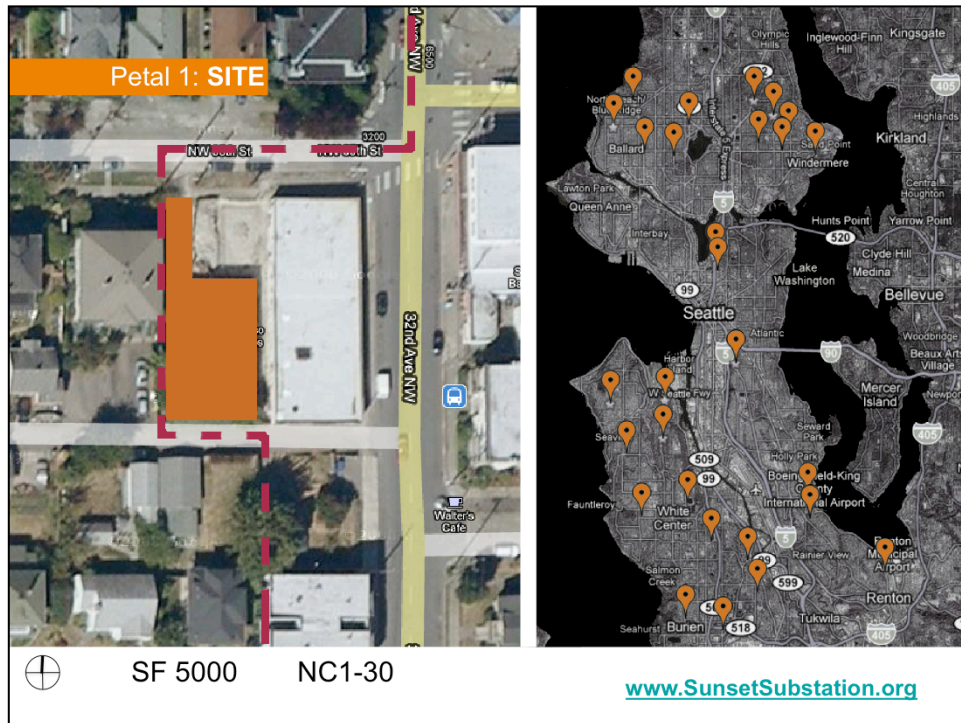




Good evening, I am Matt Hutchins of CAST architecture, and this is Sunset Substation Park.

First off I'd like to thank some people, the Sunset Hill Community Association, and the steering committee behind this great idea, Groundswell NW, and Dept of Neighborhoods. I'd also like to thank our consultants : Studio 342, Puget Sound Solar, Swenson Say Faget, Roen and Associates, and Jessica Trupin.

Sunset Substation Park, or SunStation, is a prototype for turning Seattle's obsolete Substations into a network of neighborhood friendly, solar powered pocket parks. We are targeting meeting the Living Building Challenge, a holistic performance based standard which seeks to inspire every act of design and construction to actively make the world a better place. I will be addressing each of the LBC's seven performance areas, "petals"




Let's start with the SITE:

Each dot on the right is an obsolete City Light substation, and slated to be sold. Each is a void—a driveway, to a chainlink fence, surrounded by shrubs and trees, with an empty concrete slab. It might be between a couple of houses, next to a school, or in our case, on Sunset Hill, between an Italian restaurant and a classic 4 plex. 65th is to the North, with an alley access to the south.

700 neighbors halted the sale of this lot and kept it from probably becoming a parking lot, then hired us to help them visualize what it could be.

The first step in the LBC criteria is that the site cannot be virgin prairie, forest, flood plain, sensitive habitat. City Light took care of this by paving it. The LBC requires a habitat exchange, so part of the budget is the purchase of an acre addition to the Redwood Creek Watershed Protection Project.



COMMUNITY DESIGN

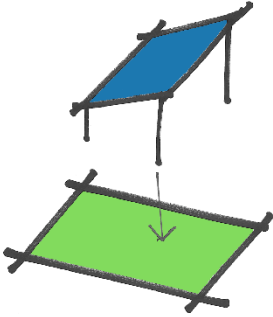
Public land should stay in public hands.

Power generation and public use can coexist.

Community involvement in design will lead to community stewardship of park.

Canopy based on site's solar access and orientation

Community designed park based on neighborhood needs



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Out of the community design process we also developed some principles to guide the vision, and I think these are applicable to all the substation sites:

Public land should stay in public hands

Power generation and public use can coexist

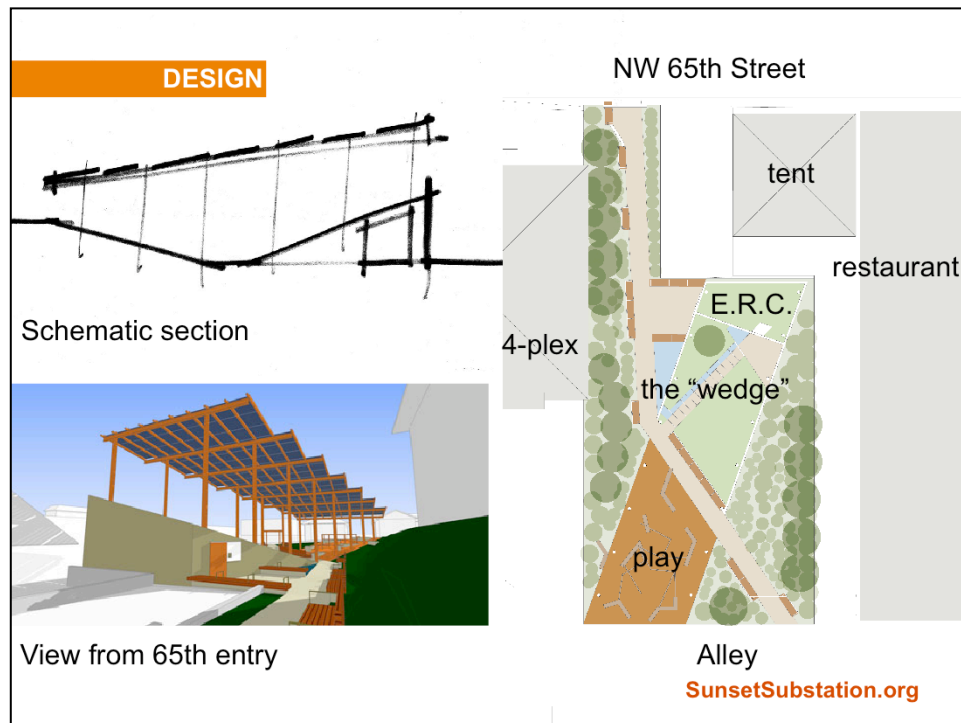
Community involvement in the design will lead to community stewardship of the park.

We also came up with a template for taking this idea citywide:

The park is designed for the community based to fit the neighborhood's needs.

The solar component is designed to the site's orientation and solar access.

Because each neighborhood is unique, and each site are unique, each park will be unique



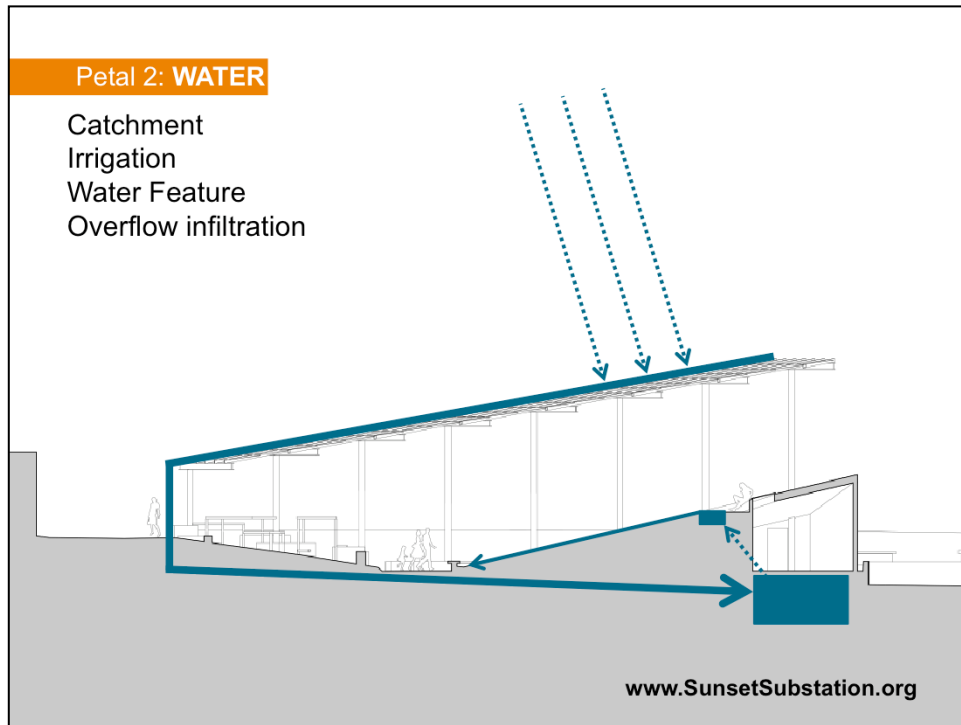
I'll walk you through the park now.

There is a diagonal path connects 65th to the alley, and the east and west edges are planted to shield the back of the restaurant and the side of the 4 plex.

The solar canopy steps from the southwest to northeast dodging the shadow of the fourplex, at a slope of 10 degrees. It starts at about 9' at the alley, and rises to 30' by the front edge—giving the park a dynamic presence on 65th drawing people into the park.

Under the canopy we have two elements—a play space, and the Wedge—a rammed earth geometric landform. The top of the wedge is shade loving plants, and some of the water collected off the panels is circulated into a cascading water feature, with a shallow pool next to the gathering space.

Under the wedge there is a space for Equipment, but also a Emergency Relief center since in a disaster the site will have both water and power. On the west side of the wedge, the door to the ERC slides back and the space acts as a classroom to teach about renewable energy.

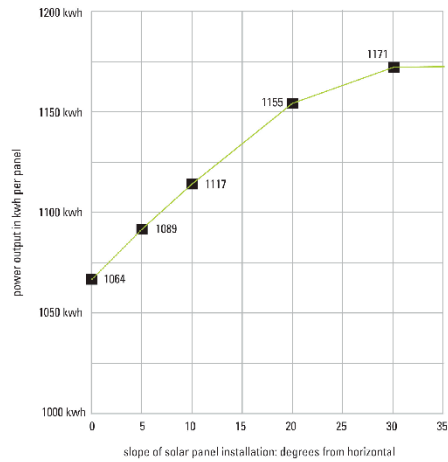
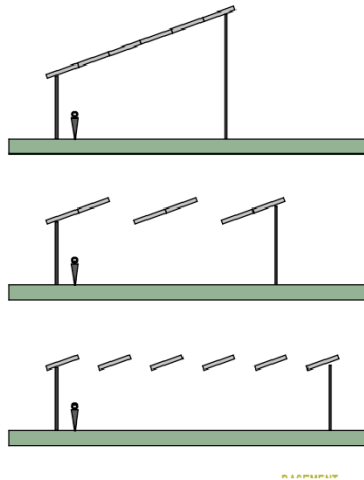


According to the LBC, the project must have net zero water use and restore the ecological water flow.

Since we don't have toilet facilities generating wastewater, we just need enough irrigate the plantings, to run the water feature, store for emergencies. Overflow would be taken care of on site through the plantings along the east and west edges.

Petal 3: ENERGY

189 panels = 31.5kW = 35,185 kWh/year = 3 typical houses


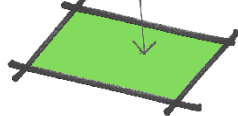
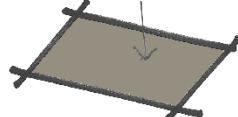


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The LBC also requires net Zero energy use, and we have more than enough to power 3 houses.

One of the desires of the community was to maximize the solar power potential, but balance open space and we studied different arrangements and the effect of slope on output of the panels

We presented schemes for each typology, and ended up with a hybrid of 1 and 3—a lower slope but covering a large part of the site--high enough and light enough so that sunlight enters from either side and the park flows through

COMMUNITY SOLAR		
Option 1: Community Solar Type 1 (individual owned)		
	35 investors in non-profit	\$378,000
	415 individual donors + grants	\$617,500
	Land acquisition from Seattle City Light	\$570,000
		\$1,569,400
		SunsetSubstation.org


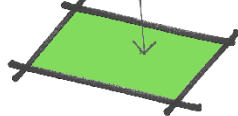
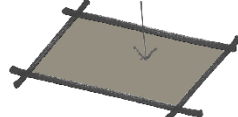
Let's talk about funding—not typical Green Building Slam! Information but critical to the understanding of the idea. Before I do, I want to note that we've broken the park components into three: the land, the parkscape and the solar canopy. In each case, the parkscape, trees and paths, benches and bricks would be funded by a combination of private donors and grants.

As part of Community Solar (SB 5101) the statute lays out 4 paths to take advantage of the production incentives and I'll talk about two here: Individual owned and Utility owned.

Option 1: Quite simply, 35 individuals invest in the solar canopy, about the twice cost of donating a park bench through the Seattle Parks Foundation. In return, the non profit sells the electricity to City Light, City Light get a tax credit, and the investors get a dividend based on the actual production. We estimate that investors would get a 3% to 6% return on their investment by the time the credit sunsets in 2020.

Because the total amount of money in this legislation is limited, they split the pot up, so utilities don't grab all the credits. Unfortunately, as part of Type 1, Utilities cannot own the land that individual owned Community Solar sits on. We'd have to acquire the land through other grants.

That may seem like quite a mountain to climb, but is nothing compared to option two:

COMMUNITY SOLAR		
Option 2: Community Solar Type 2 (utility owned)		
	Grants and Seattle City Light Green Up program	\$378,000
	415 individual donors + Park Levy Opportunity Fund	\$617,500
	Seattle City Light continues to own land	\$0
		<hr/> \$999,400
SunsetSubstation.org		

We have to convince City Light to hold the properties and built Community Solar themselves. There are two reasons they don't like this at all.

- One--They are suspicious that a network of smaller facilities even if they could amount to more than a MegaWatt hour of clean renewable energy every year.
- Two—their mission is limited to only the generation of power for ratepayers. They are not in the Parks business and City Light doesn't yet see the intangible benefits beyond their core mission.

City Light does support Community Solar, but somewhere high profile, like Pike Place market, where it can be used as a billboard to sell the Green Up program.

But I think that the best advertisement for community solar, and solar in general is to have it integrated in many public places, so that there is greater exposure, acceptance, and enthusiasm for renewables.

And if we utilized the substation sites, Seattle Neighborhoods would have 35 new pocket parks: like this.



Petal 4 is health, and granted many of the requirement apply to buildings more so that parks—access to fresh air/daylight

One of the interesting LBC requirements is Biophilia—defined as the love of nature—an aesthetic idea that imprinted deeply into our DNA is a psychological resonance with natural forms, processes, and features.

We make no bones about the artificial elements, the canopy, the wedge, but they recall natural landscape forms, a hillside, a stream, a forest, a pond.

Petal 5 is Materials

No elements of the construction can hail from the redlist—such as pvc, neoprene, cadmium, lead mercury, you get the idea. It will be something that we'll be assessing in depth through the selection of materials and equipment.

We will be purchasing a construction carbon offset, limiting material transport distances, and designing for durability, lifespan, reuse and construction waste as part of the LBC.



Petal 6 Equity—human scale, equal access to nature.

Ironically, the one hitch we've run into is the not affecting the solar access for neighbors. In our quest to maximize the capacity, we may need to adjust the design so as not to shade the neighboring restaurant's dumpsters.

Petal 7 Elements designed human delight, a celebration of culture and place.

The project emerged from the desire of the the community to create a place that their neighborhood to gather, play and hang out, and I see this as a celebration of the verve, and commitment of its citizens. It will bring neighbors together, and be a place for art in the path, in the rafters, in the rammed earth walls.

Finally the project in order to fulfill the challenge, it must inspire and educate, so that others can see the positive impacts that a simple building can have on the environment and the community.

Hopefully, Sunset Substation will inspire you, to seek out your substation, and ask, if we own this land, what could it be, why can't it be our park.

Thank you.