EVENT SUMMARY | Sustainable Sunnyside Yard Workshop | 7.25.19

OVERVIEW

The event took place at LaGuardia Community College from 5-8pm. Attendance was invitation-only and consisted of Sunnyside Yard Steering Committee members, selected community members who are knowledgeable about sustainability issues, and human-centered design experts from a variety of forward thinking firms. The full attendee list is below.

COMMUNITY ATTENDEES	ORGANIZATION
Danae Vokolos	Mondae
Ernie Brooks	LIC Coalition, Carolyn Maloney's office
Frank Wu	CSCA
Glen Schleyer	Sunrise Movement; CIANA
Gwen Suhantz	Brooklyn Grange
Lisa Deller	Community Board 2
Liz Lusskin	Long Island City Partnership
Lou Venech	
Sheila Lewandowski	Chocolate Factory Theater
Shurn Anderson	Queens Borough President's office
Soldely Dilone	
Tom Paino	
Vitali Ogorodnikov	Court Square Civic Association
DESIGN EXPERTS	**ORGANIZATION**
Aaron Dorf	Snohetta
Eva Gladek	Metabolic
Jeffrey Montes	AI SpaceFactory
Kelly Tigera	Snohetta
Lala Kova	Metabolic
Nick Koster	Snohetta
Rodrigo Bautista	Forum for the Future

The workshop kicked off with a welcome by Adam Meagher, explaining the purpose of the evening would be to use a human-centered design approach and leverage the unique combination of knowledge in the room to ideate innovative ways of incorporating sustainability and resiliency solutions into the Sunnyside Yard master Plan.

Followed by a round of introductions by all participants including the EDC team, Annemarie Gray gave a brief presentation outlining:

- The challenge at hand: climate change and its impacts on the community
- NYC's policy initiatives and priorities around sustainability and resiliency
- Why Sunnyside Yard is an opportunity to plan better for the future
- Background on the Master Planning process and key findings to date

- Key areas of input in the plan for sustainability and resiliency: infrastructure, deck design, transportation, buildings, smart city technologies, and open space

Eleni Bourinaris then led a group brainstorm centered on the following questions:

1. What are some environmental challenges facing you or your community?
2. What would a sustainable and resilient community look like?

There was a lively conversation led primarily by community attendees. Key issue areas included heat, passenger transportation, stormwater impacts, freight, social connectivity, and displacement. Specific issues that may be important to note are:

- The order-in economy as a challenge
- Lack deck permeability could lead to stormwater runoff into surrounding neighborhoods
- Amplification of urban heat island effect and solar reflection, combined with lack of tree canopy and green space
- Old stormwater infrastructure is under capacity
- Subway infrastructure is vulnerable to weather and capacity constraints
- Climate change refugees → 1 million people within NYC are projected to be displaced
- Ineffective organics recycling program
- Water runoff at 45th St bus (?) stop

Initial ideas for a more sustainable and resilient community included:

- Emphasize and utilize railroads as a key sustainability asset
- Renewable energy supplied to the grid, supplemented by independent renewable energy
- Create new bike lanes on 43rd Avenue
- Education and community participation
- Rethink waste → built in compost systems?
- Plan for uncertainty
- Ensure socioeconomic, cultural, and age diversity
- Adequate medical facilities to deal with climate induced health impacts
- Permeable surfaces

Following a short break, the group reconvened for a design sprint. The design sprint featured four "challenge tables" – each one concerned with a different theme supporting sustainability and resiliency in the Master Plan. Design experts paired up and selected topics, informed by the brainstorm and presentation, for their challenge table. Accompanied by an EDC facilitator, they led the table through a group ideation and then set off to develop ideas into prototypes for review. Each table used a slightly different approach, as designers were given flexibility to structure the conversation as per their preferred design process. The four challenge topics were:

1. Energy, led by Aaron Dorf, Jeffrey Montes, and Lala Kova
2. Circularity material flows, led by Eva Gladek
3. Mobility, led by Nick Koster

4. Interconnectedness, led by Rodrigo Bautista & Kelly Tigera

Community members joined a table of their choice for the group ideation. As designers prototyped ideas, community members were asked to walk around the room and offer feedback. Designers continued to iterate based on feedback received.

DESIGN PROPOSALS

Energy

1. **Leveraging intensified impacts for greater resource capture**
    a. Utilize the hotter, wetter conditions to capture more renewable energy
    b. Spatially arrange buildings to allow West-Northwest winds to funnel through buildings and induce natural ventilation
    c. Use train tracks as energy inducer. Trains will be forcing a lot energy through the site; can create an energy recovery collector that can forced pressurized air through buildings to create natural interior vents
    d. Deck will get heavier as it rains – deck can potentially absorb water and have slow release that creates weight/pressure and creates a mega piezoelectric system
        i. The heavier the rain, the more energy
2. **Hydroelectric Dam**
    a. Captures rainwater and uses gravity to produce electricity
    b. Basic principle: dam closes when there is excess energy and allows water to build up. When energy is needed during peak times, water can be released and the kinetic energy can be captured.
    c. Stores water at higher elevation as potential energy that can be released as needed - operating as a low-tech battery
    d. Because the site is so large, there is a substantial amount of water to capture and store
    e. Could serve as “functional icon” (as opposed to The Vessel, which serves no real purpose)
    f. Inspired by metabolic digesters in Brooklyn
3. Other notable ideas
    a. Utilize the deck itself as a thermal storage mass
    b. Enclosure of Main Line could direct wind-driven energy to other parts of the Yard
    c. Water storage within the deck for natural cooling
    d. Orient buildings with ideal prevailing wind and ventilation paths
    e. Design building facades and footprints to have capacity for cross-ventilation
    f. Create walkable neighborhood to minimize deliveries

Circular Material Flows

Group explored flows of food, plastic, waste, building materials. 75% of resources extracted from the world end up in cities, which often act as drains for these materials.

1. **Food and Organics Cycle: SSY as a basis for closed-cycle organic materials economy**
    a. Food waste and scraps
        i. High-speed composting: put food waste into a bin and end up with high-quality compost
        ii. PLA reactor: produce bioplastic from food waste, which can be used to make packaging/utensils/etc
        iii. Can create polymers out of orange peels, faux leather out of potato peels
    b. Sewage processed in a "living machine"/ biopolis waste processing hub
        i. Doubles as a public garden
        ii. Recycle output water and materials back into public garden
        iii. Should include some form of food production that uses output materials, potentially synthetic food production (meat alternatives)
2. **Blue-green water infrastructure**
    a. Designing buildings to integrate water capture and processing for high-quality use
    b. Water gardens that are public spaces when dry, and fill up when it rains
        i. Rotterdam as a precedent
        ii. Can use filled water garden as passive air conditioning
3. Other Notable ideas
    a. Buildings as material banks with resource passports (business model focused on leasing the materials in the building ,e.g. building as a service)
    b. 3D printed buildings
    c. Design for disassembly
    d. Sensors to monitor infrastructure capacity
    e. 8 story food production unit
    f. Enable pathways for local resource use
    g. New technologies on site like high speed composting

<u>Mobility</u>

Looking at both people and goods/services.

1. **Redefining Ground**
    a. Leverage physical connection offered by an overbuild to create a Hub for people convene and connect with the larger city
    b. Center for goods distribution via water and rail
    c. Repurpose existing passenger systems during off-hours for freight and small goods
    d. Potential to use interstitial space to move smaller deliveries through the site, solving for last mile delivery
2. **We Know What We Don't Know**
    a. Build flexibility into physical space design
    b. Accommodate last mile mobility modes such as AVs and others that don't exist yet
    c. Curb space is an important question for retail and delivery
3. Other notable ideas
    a. Create the Grand Central of Queens

b. Right-size modes of delivery (i.e. can deliver a meal on a bike, but would need a car for something larger). Less about who owns the care and more about what it's being used for
c. Pneumatic tubes for freight delivery

Interconnectedness

1. **The Whale**
    a. Public space that helps produce power, jobs, food, electricity, and smart mobility
        i. Bike lanes that capture and store energy from motion
        ii. Expanded bus lanes and train service to make Sunnyside largely car-free
        iii. Space for growing food and composting
        iv. Fully utilize rooftops as green space, urban ag, or solar
        v. Stormwater and flood management
        vi. Designed to mitigate sound and light pollution
        vii. Inspired by Eden Project in London and BAT

KEY IDEAS FOR EXPLORATION

A key ambition of the Sustainable Sunnyside Yard Workshop was to produce ideas that actually inform the Master Plan. While proposals outlined above are seedlings of actual design solutions, there are some that could make sense to explore further.

Energy will be likely be a key component of the Plan's sustainability and resilience strategy. Potential for solutions related to heat capture, energy recovery and capture from induced wind, natural ventilation systems, and passive heating and cooling through building design, and using the deck as thermal storage should be studied. Hydropower solutions utilizing rainwater, such as a hydroelectric dam, could be particularly interesting. Although building design is beyond the Master Plan scope, the team should consider ways to incentivize passive house standards.

Water is another critical topic for the community. Storms and extreme participation both strain the current infrastructure. With redundancy and circularity in mind, there should be further exploration around new water infrastructure that can capture and reuse excess water. Utilizing water as a source of natural cooling is compelling. There may also be value in designing public spaces to accommodate floodwater.

Freight and deliveries were another theme of interest. With significant conversation around the transport of goods, this seems to be an area that generally merits further discussion.