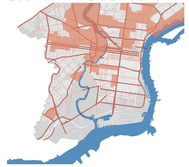
Adaptive Resurgent Resilient Healthy

GREENxBLUE REDEFINERY

LOCATION

The site is located in southwestern Philadelphia, adjacent to neighborhoods such as Center City, University City, Navy Yard, and the Philadelphia Airport.

ECONOMY AND DEMOGRGRAPHY



The mean percentage of households living below the poverty line in the census tracts adjacent to the refinery is 28%; over twice the national average. The neighborhoods surrounding the refinery are 63.4% Black, while the city's overall Black population is 42.3%. The area surrounding the refinery also lies in a Philadelphia environmental justice zone, meaning that the adjacent neighborhoods are impacted by socio-environmental inequities.

Black Population Philly vs Refinery Neighborhood

42.3% 63.4%

ACCESSIBILITY

The site has very limited transportation accessibility. Existing bus lines connect the site eastwards and westwards via George C. Platt Memorial Bridge and Girard Point Bridge, but the site is difficult to reach via public transportation, cycling, or walking, which presents an obstacle for equitable access to the site.

RESILIENCY

Sea level rise presents a major threat to the site. If existing conditions and land uses persist, the land abutting the river will be submerged by a mere 3 feet of sea level rise, while the majority of land will be underwater when the sea level rises by 5 feet.

HEALTH

Pollution types generated from the oil refinery include air pollution, underground water pollution, and soil pollution. The highly polluted industrial site contaminates not only the soil and water present on the site itself, but also negatively impacts the surrounding communities, who have experienced severe health repercussions due to the refinery's pollution levels.

PUBLIC VOICES

ENVIRONMENT

"Guiding values for future use of the site...Has a more positive impact on public health and the environment than the status quo ever had. Air, soil, and groundwater pollution from the site should be minimized and remediated and operations should be more environmentally friendly than ever before." - Abernathy and Thiel, 2019

EQUITY

"The environmental burdens of living in close proximity to the refinery are disproportionately shouldered by low-income communities of color, many of whom did not choose to reside in close proximity to an oil refinery or have the means to 'relocate.' - Visioning the Reuse of the Philadelphia Energy Solutions Refinery Complex

SAFETY

"Guiding values for future use of the site...Puts the public's safety as a top priority. Risks and hazards to the public should be minimized to the greatest extent possible in every aspect of how the site is used." - Abernathy and Thiel, 2019
"How are you going to build trust with the community that this place is safe to go to? Some of the worst industrial accidents happen in Philadelphia's neighborhoods, only 1 hour of the city's industrial history and lack of safety." - Julia Hillenger, PowerCorps PHL
"The closing of the refinery shined a light on the persistent public health impacts of the refinery on the residents of the fence-line communities along its perimeter, as well as the significance of the loss of such a high number of highly skilled refinery jobs. Indeed, the City of Philadelphia's Refinery Advisory Group, convened in the aftermath of the 2019 fire and explosion, made clear that future uses for the site must "put the public's safety as a top priority" while "providing significant long-term economic benefit to Philadelphia and it's residents." - Visioning the Reuse of the Philadelphia Energy Solutions Refinery Complex
"While there were many different perspectives and points of view shared, most people (in the Refinery Advisory Group) seemed to agree...People should be kept safe and healthy." This includes the health of the community and the workers." - Abernathy and Thiel, 2019

ECONOMIC RECOVERY

"Guiding values for future use of the site...Provides significant long-term economic benefit to Philadelphia and its residents, including through high quality, family sustaining jobs. The site should be put to a productive use that is financially viable and creates high quality employment opportunities." - Abernathy and Thiel, 2019
"Guiding values for future use of the site...Provides direct community investment and engages meaningfully with surrounding communities. Future users should work collaboratively with surrounding neighborhoods to ensure that there is no displacement, and should provide a mechanism to ensure that there is ongoing community benefits agreements or targeted job training or hiring initiatives. Future users should listen and respond to community concerns." - Abernathy and Thiel, 2019
"While there were many different perspectives and points of view shared, most people (in the Refinery Advisory Group) seemed to agree...There should be high-quality jobs and job training available for workers and community members." - Abernathy and Thiel, 2019

COMMUNITY INVOLVEMENT

"Philly Thrive...said it wanted assurances from Hilco there would be no refining operations on the site; that Hilco would provide funding to assist the public with technical participation in clean up plans; allow active public involvement in plans for redevelopment; and establish a quota for quality, union jobs to surrounding neighborhoods." - from "'Their timeline is aggressive' Hilco plans to clean up polluted South Philly refinery site, city says," January 24th, 2020, Philadelphia Inquirer

ENERGY

"To me, part of the narrative of the site is that this site was built on fossil fuels and dirty energy production... After decades of being part of the problem, we can use solar panels to make new clean energy to be a part of the site's new legacy". - David Masur, Executive Director of PennEnvironment

TRANSPORTATION

"Transportation will be a major issue - there are not enough public transportation options to get there, and even when you get there the tract of land is so large that it is hard to navigate...If we can solve the transportation problem, it opens up really interesting ways to expand the usable bounds of the city, including ways to increase exposure and access to experiences that aren't readily available in Philly." - Julia Hillenger, PowerCorps PHL
"One of the biggest things to address is that, since it won't be an refinery anymore, it doesn't need to be disconnected from the community. Right now, all the roads around it are dead ends. It's makes sense that it can't for real. To be a more functional space, we need to create access to the site." - Russell Zimbo, Clean Air Council

PROSPECTIVE

"Guiding values for future use of the site:
Puts the public's safety as a top priority. Risks and hazards to the public should be minimized to the greatest extent possible in every aspect of how the site is used.
Has a more positive impact on public health and the environment than the status quo ever had. Air, soil, and groundwater pollution from the site should be minimized and remediated and operations should be more environmentally friendly than ever before.
Provides significant long-term economic benefit to Philadelphia and its residents, including through high quality, family sustaining jobs. The site should be put to a productive use that is financially viable and creates high quality employment opportunities.
Provides direct community investment and engages meaningfully with surrounding communities. Future users should work collaboratively with surrounding neighborhoods to ensure that there is no displacement, and should provide a mechanism to ensure that there is ongoing community benefits agreements or targeted job training or hiring initiatives. Future users should listen and respond to community concerns.
Provides for diverse uses/activities on the 1,300+ acre site. Regardless of how it is used in the future, the site is large enough to accommodate more than one use. The site's size should be utilized to support as many economically, socially, and environmentally positive activities as possible"
Abernathy and Thiel, 2019

"While there were many different perspectives and points of view shared, most people (in the Refinery Advisory Group) seemed to agree on several things. People should be kept safe and healthy. This includes the health of the community and the workers.
There should be high-quality jobs and job training available for workers and community members.
The site should be cleaned up and there should be ongoing monitoring. Residents and taxpayers should not bear the cost of remediation and cleanup. There should be better communication between management and workers, the land owner and the community, the City and the community, and between workers and residents."
Abernathy and Thiel, 2019

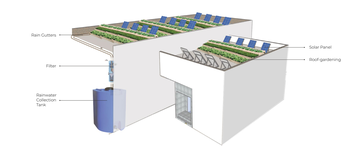
"Members of the public, including near neighbors and refinery workers, also seemed to agree on several requests to guide the future of the refinery site:
Make equity central to use, development, hiring, and community engagement. Companies that caused pollution should pay for all damages and cleanup.
New site management should:
Work to repair trust between workers and management.
Improve working conditions and invest in modern and updated operations, including pollution controls.
Work cooperatively with unions and the workforce, including by taking employee suggestions on how to improve health/safety/just operations.
Have a local hiring requirement from surrounding community.
Hold regular inspections and make the results publicly available.
Incorporate more environmentally friendly operations"
Abernathy and Thiel, 2019

"The Lower Schuylkill holds significant promise for the social, environmental and economic health of Philadelphia. Stakeholders including Hilco, community and advocacy groups, the Planning Commission and other City departments, elected officials, regulatory agencies, and others in the public and private sector need to work together to build upon this initial visioning study to develop a long-term plan to transform a toxic landscape into an integrated, connected, and healthy part of a 21st century city. As demonstrated, Philadelphia has a proven track record for long-term visioning/planning. Therefore, it is imperative that a broad, consultative public planning process must precede the redevelopment of this crucially important part of Philadelphia's future"
Visioning the Reuse of the Philadelphia Energy Solutions Refinery Complex

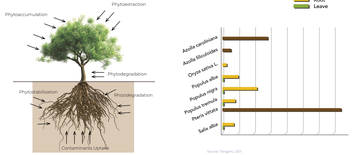
KEY PLAN

MULTI-LAYER PROPOSALS

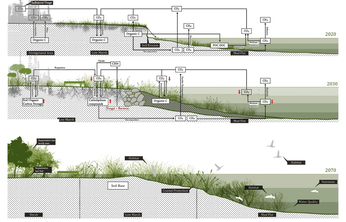
WAREHOUSE ROOFGARDEN



PHYTOREMEDIATION



CLIMATE SOLUTION



WETLAND PARK PHASES

Year 1

Remove solid pavement;
excavate wetland;
refill peatland;
build solid riverbank
sow grass and legume
sow forest (too small in the beginning)

Year 5

Mature wetland;
mature peatland;
mature grassland;
half matured forest to clean air pollution

Year 15

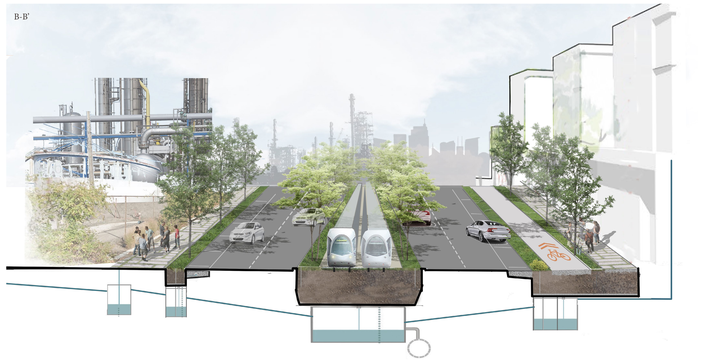
Expanded wetland;
richer peatland;
shrunk grassland with trees

POST-INDUSTRIAL ADAPTIVE REUSE - NORTH PARK VIEW

A-A'

SECTION OF MAJOR ARTERIAL

B-B'



CLIMATE RESILIENCY WETLAND PARK VIEW

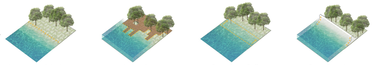
C-C'

GOALS

- Enhance community involvement in the planning procedure of post-industrial transition, bring equity and transparency to the public in the nearby neighborhoods.
- Establish an urban framework and transportation network to better connect to nearby neighborhoods and enhance inter-neighborhood circulation.
- Provide building space for value-added industries, manufacturing and logistics that will enhance Philadelphia's comparative advantages, boost economy and provide job opportunities for refinery workers and other Philadelphia's essential workers.
- Call for public's awareness of climate change and Sea Level Rise (SLR) issues we will be facing in less than half a century's time through place making in open space including SLR-themed installations and censors.
- Preserve Philadelphia's post-industrial character through industrial-to-park adaptive reuse to transfer NIMBY use into public accessible open space, and interactive wetland parks.
- Address public health issues caused by the oil refinery operation and nearby industries, and clean up oil refinery pollutants through physical removal and biochemical remediations.
- Create pandemic and disaster resistant urban design protocol, and provide green-blue infrastructure to resist natural disasters such as storm surge, flood and SLR.
- Experiment clean and alternative energy through industrial-space urban design such as warehouse solar roof gardens and wind turbines.

RESILIENCY URBAN DESIGN

Open Space



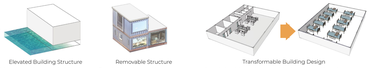
Permeable Soft Surface
Permeable soft surface allows plants and shrub near shore to absorb storm water, reducing storm water drainage to the inner city.

Soaking-in Edge
Design soaking-in edge by waterfront to lead water in and decrease shock water eruptions to structures.

Storm Surge Buffer
Reserve close-to-water green space as buffer in rainy seasons to prevent from storm surge damages.

Storm Surge Lever
Reserve close-to-water green space as buffer in rainy seasons to prevent from storm surge damages.

Buildings

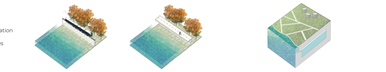


Elevated Building Structure
Adopt elevated features in building design at locations where seasonal rainwater and storm surge damage frequently occur.

Removable Structure
Detachable and removable structures can be built at locations facing severe climate damages for flexible usages.

Transformable Building Design
Large industrial space has potential to be transferred for various purposes. Under disasters and pandemics such as COVID-19, office and operation space can be transformed for medial uses.

Transportation and Utilities



Elevated Tram Line
Elevate tram lines across the river can avoid storm water damage, and it adds to a city's interesting spot.

Above-water Bike Lane
Elevated biking lanes and board walk can be provided along river, raising public's awareness of their relation with water.

Underground Stormwater Storage
Underground space under open space abutting the downstream of a river can be used for storm-water storage in rarity and flooding seasons.

Ideas inspired by Corridor 2015

PHASES

Phase 1 (2020-2024)

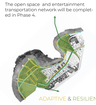
Phase 1 will focus on site cleaning to remove polluted surface and soil.

Phase 2 (2024-2025)

Major urban transportation network set up in Phase 2 to enhace accessibility to and from the site.

Phase 3 (2025-2027)

Industrial land uses will start operations in the site in Phase 3, to provide job opportunities.

Phase 4 (2027-2030)

The open space and entertainment transportation network will be completed in Phase 4.