

OPEN SPACE

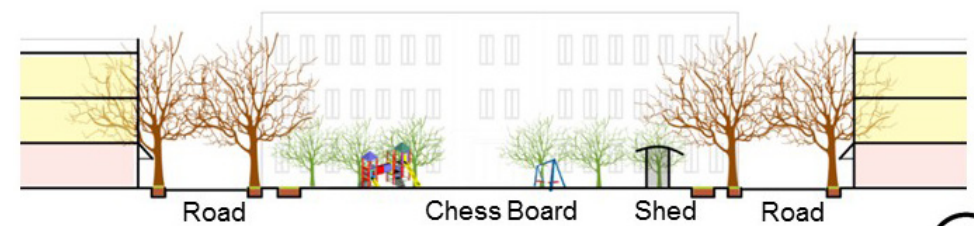
The outdoor recreation spaces are spread across the site while still being inter-related through the surrounding activities. A focus on vegetation enables 26 % tree coverage.



'The Park' that surrounds the clear grid system of the site buffers the residential area from the rail road located on the north and east edges of the site. It incorporates one of the major water bodies on the site. The upper part of the site falls under the Ohio Watershed and the lower part falls under Chartiers watershed. The water body acts as a storm water management system as it collects water from the Ohio watershed and directs it to the Chartiers creek through the stream system that flows through the park edging the site. There are infiltration trenches incorporated into the design which help infiltrate the storm water in the lower half of the site to fall under the Chartiers Watershed.



A community square integrates activities like dining, seating, children's play, cook-outs, and various recreational activities.



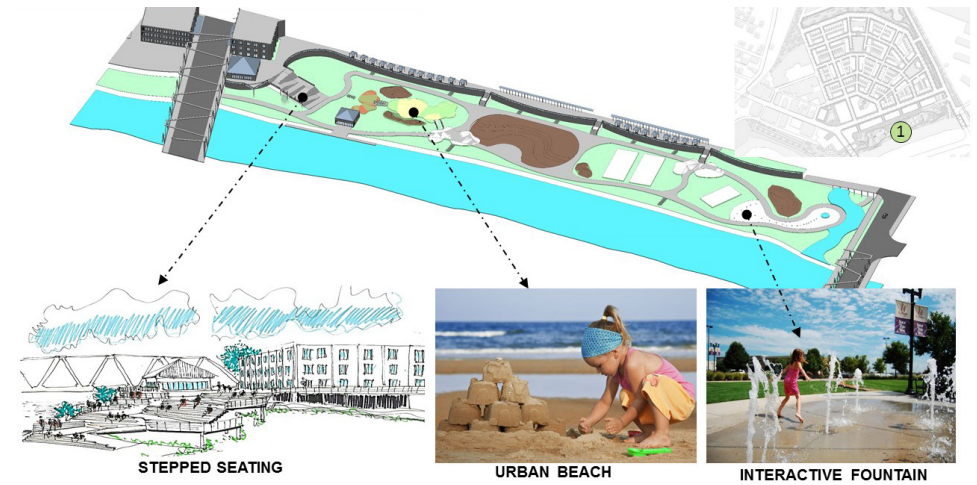
OPEN SPACES



The community square is an extension of the community building which houses facilities like day care centre.



The square integrates activities like dining, seating, children's play area, cook outs and many other activities.



The creek front promenade and stepped access are inviting, recreational and social.



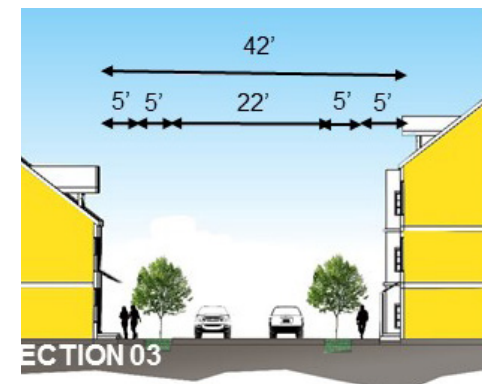
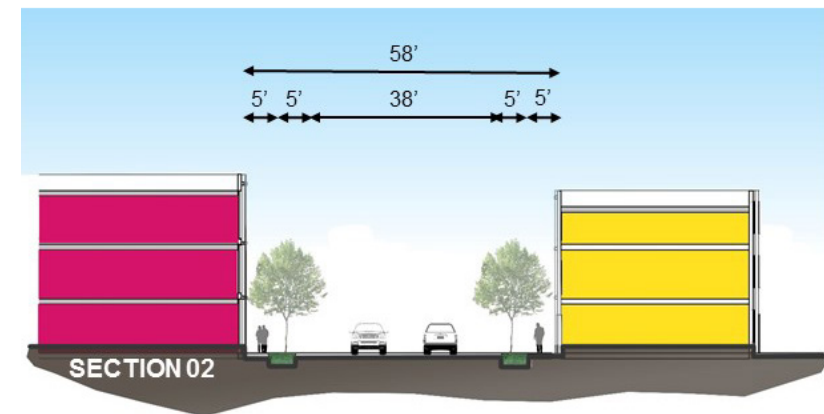
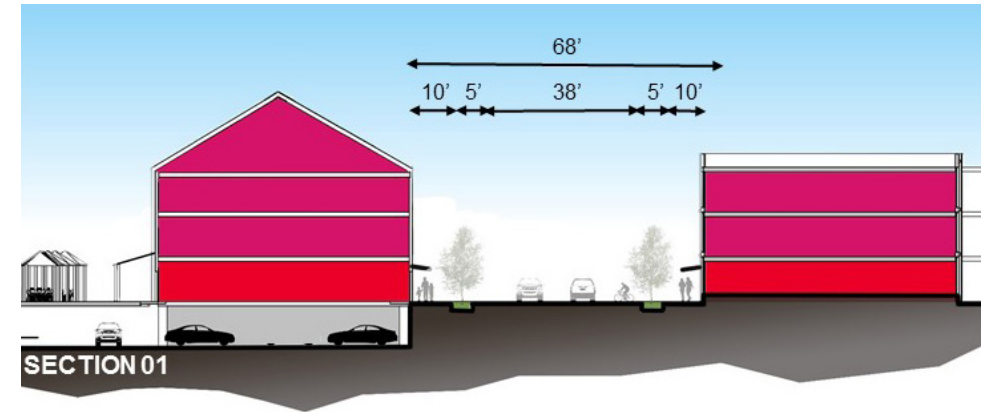
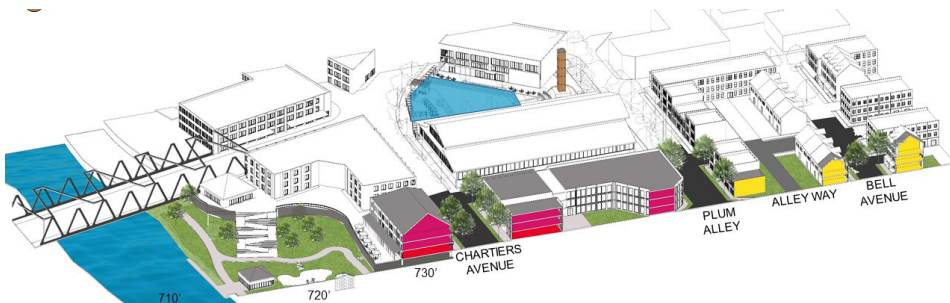
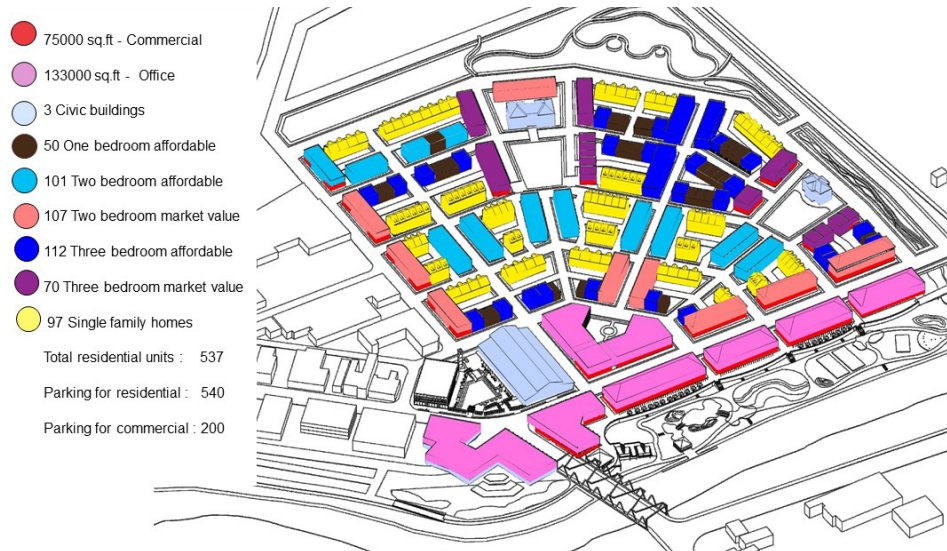
The creek front creates an interactive interface for kids and adults.



The amphitheater forms a natural depression into the land, creating a flood barrier and providing vistas to the creek. (Image source : Google Images)

PROGRAM DEVELOPMENT

The residential area is set on a clear grid system and has strong block structure. The blocks incorporate some amount of the parking requirement within each block and rest is satisfied through on-street parking around the block. Each block is essentially a combination of affordable and market rate apartments along with single family row houses. This rich mix of varied income housing creates a better sense of community and social wellbeing. All the apartment buildings include rooftop geponic farming and all the single family houses with suitable solar angle include solar panels as sustainability measures.

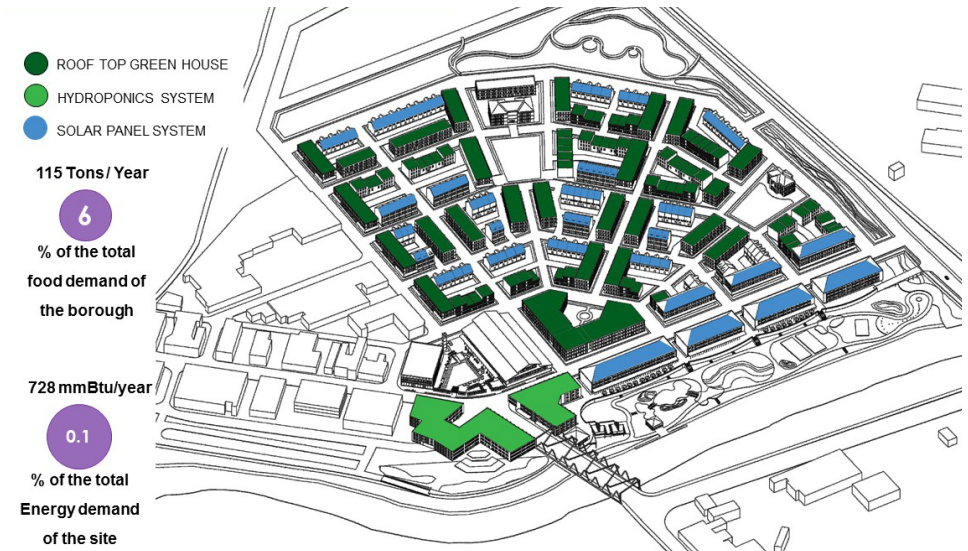


COMMERCE

The commercial buildings right at the gateway incorporate commercial hydroponic rooftop agriculture based on the model of Lufa Farms in Montreal Canada. This model of urban farming has been highly effective in producing crops like tomatoes, cucumbers, peppers, eggplants, various herbs, lettuces, bok choy, kohlrabi and chards. It is capable of producing 70 metric tons of produce annually from 32,000 sq. ft. of green house space. The idea of incorporating this model of hydroponic farming was to have fresh produce directly accessible to the residents on the site. As the building at the gateway houses restaurants, the produce can be directly obtained by the restaurants from the green house. It also provides opportunities for education and work on food systems.



The commercial promenade faces the creek front and recreational space connecting multiple levels.



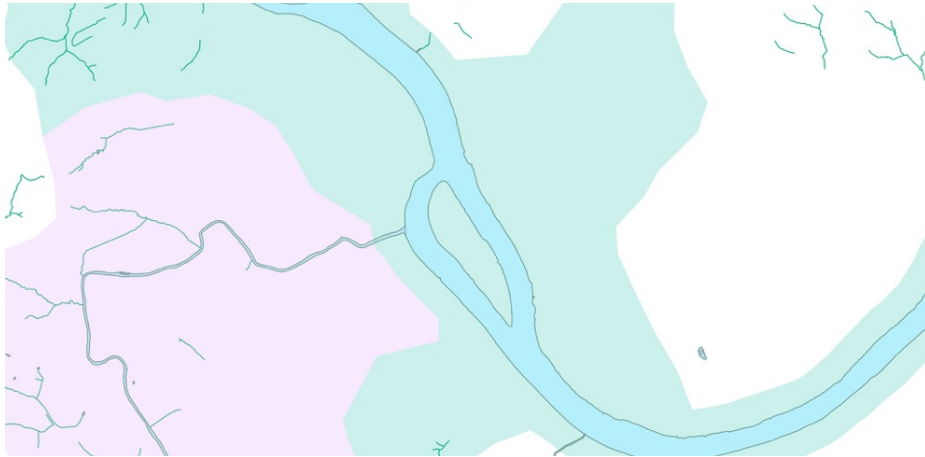
The residential system is interspersed with commercial areas at 'The Community Square' and 'The Church Square'. The commercial areas extend towards the square at one side which incorporates activities like seating, dining, farmer's market and cook outs. The square has a central lawn area for activities like playing, sun bathing, yoga etc. and the other end of the square is an extension of the community building which includes play structure, swing set and a paved outdoor chess board.

In all, the proposal makes a coherent approach to the existing conditions while providing refreshing new attractions to Mckees Rocks. The incorporation of new technology while considering the existing fabric and aesthetics of the place allows for transformation towards a sustainable future while maintaining local character and texture. The Gateway, hence forms an entrance to a new Mckees Rocks.

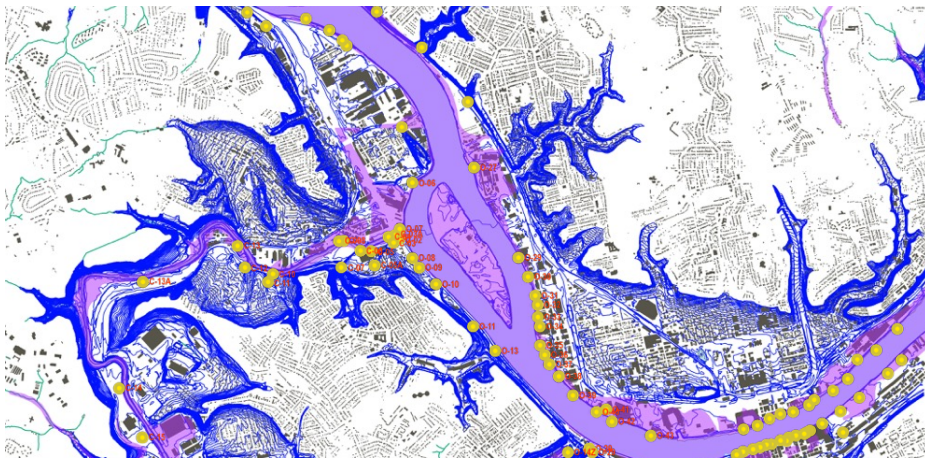
JUNCTION: *INTERCHANGE*

Marantha Dawkins and Raksha Srinivasan

McKees Rocks suffered a loss of business and population as the steel industry declined. This proposal picks up on the supportive role the area played in the region's industrial high point. It understands McKees' Rocks' proximity to Pittsburgh and existing industrial capacity as strengths that can help to align the borough with feasible and forward thinking design that both acknowledges its context and projects an economically, socially, and environmentally sustainable future. The proposal can be broken into four themes: sustainable systems, economic vitality, accessibility, and place-making.



Watersheds



Low-lying topography, combined sewage outflows, and floodplains



Lack of ecological robustness highlighted a break at the site

SUSTAINABLE SYSTEMS:

How can we make full use of the resources we have on site to support environmentally sustainable growth?

McKees Rocks is highly affected by flooding. This can be alleviated with watershed planning in the Chartiers and Ohio Basin watersheds, but given the scale of the site, this proposal focused more on tactics that we could apply to low-lying topography (see map). Combined sewage outflow points dot the landscape, releasing sewage and stormwater into the Chartiers Creek as interceptors make their way up to ALCOSAN, which lies north of the site (see maps). The FEMA floodplain engulfs the site entirely, and the site has very little ecological value (see maps).

This proposal embraces sustainable site systems, and in doing so addresses the site's aforementioned issues. The proposal's goals are below, and the corresponding strategies follow:

goals

1. to manage stormwater and wastewater
2. to take advantage of renewable resources
3. to promote environmental remediation through ecological diversity

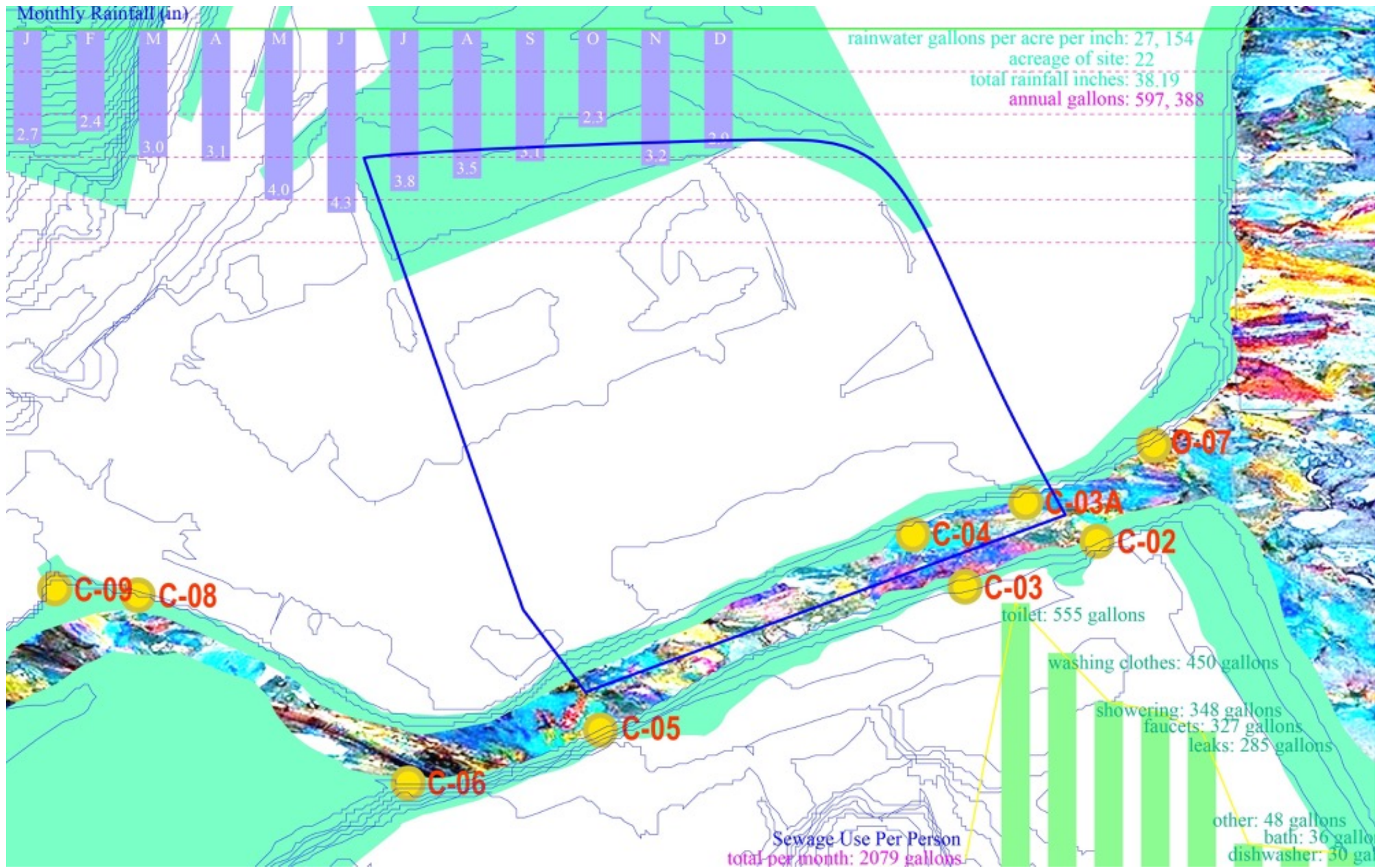


Diagram showing precipitation, water consumption and CSO's along the site

strategies

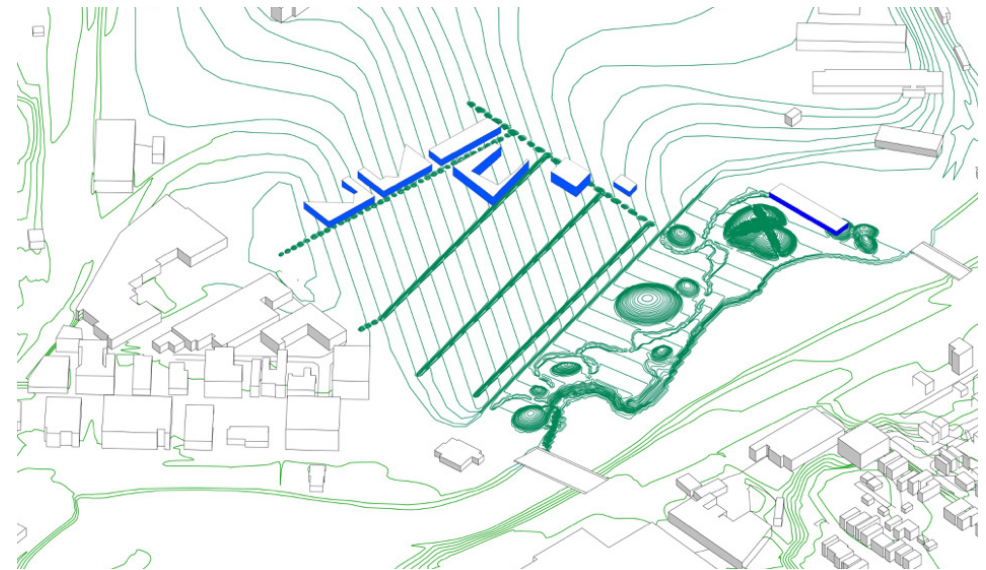
1. Ecological Site Planning

Given an estimate of 38.19 inches of rainfall per year on our 22-acre site, our proposal handles all 597,388 gallons of stormwater by manipulating the existing topography. The proposed topography (see image) directs water through swales to the Eastern edge of the site, and then runs it Southward, to the creek. Along the way, stormwater is filtered by grasses and is accepted into natural topography rather than running off directly into storm sewers or Chartiers Creek.

This proposal also makes use of Living Machine (tm) technology to manage wastewater, of which an average person produces 24,948 gallons annually (this estimate takes into account toilet use, clothes washing, bathing and showering, faucet use, leaks, and dish washing). The living machines proposed on-site handle 127.25% of the site's projected wastewater and 19.69% of the borough's wastewater, but if this technique is to be applied to only the site's sewage, scaling back is recommended as the systems only work when operating at full capacity.



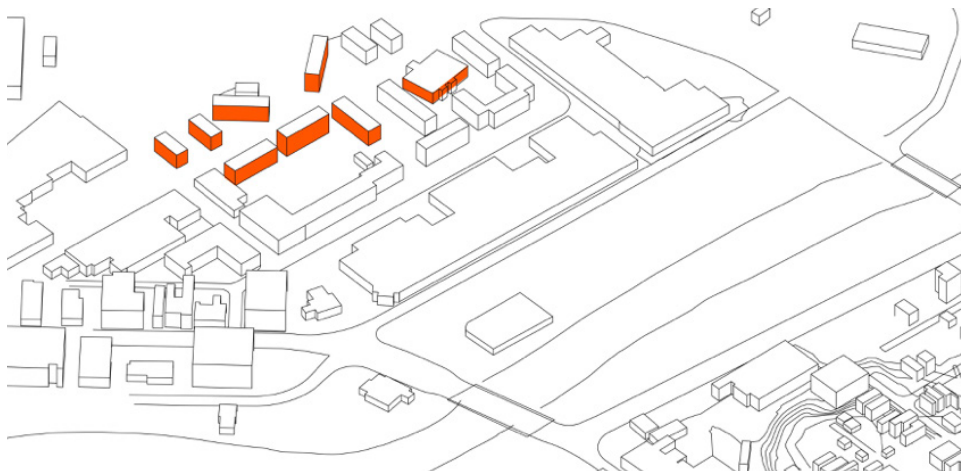
The existing topography and lack of permeability cause all of the water that falls on site to run off into the creek, undirected.



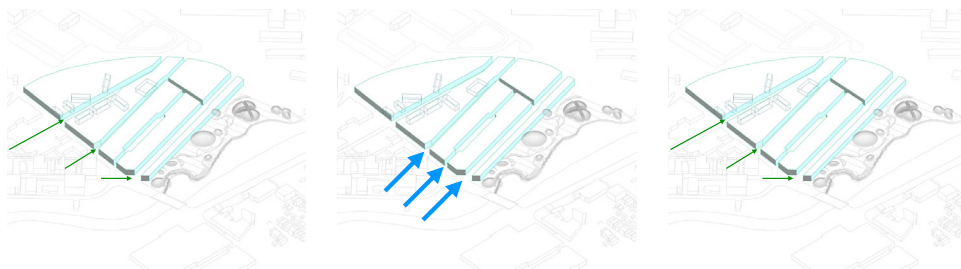
The topography has been designed in a way that directs stormwater through living systems that will serve to both filter and retain it. Bioswales line the edges to control run-off and living machines (in blue) handle wastewater.

2. Strategic Block Structure & Building Massing

This proposal retains eight existing buildings, all currently a part of Hays Manor. This saves 20-30 years of embodied energy, conserves development costs, and begins to include the existing fabric into our design. The blocks also pull off from the existing streets in an angle that is conducive to wind harvesting, scaling them to walkable neighborhoods keeping in mind the existing block profiles in McKees Rocks.

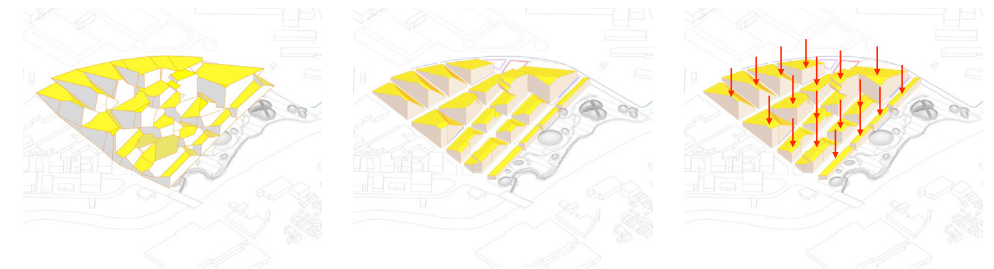


The proposal retains eight existing buildings.

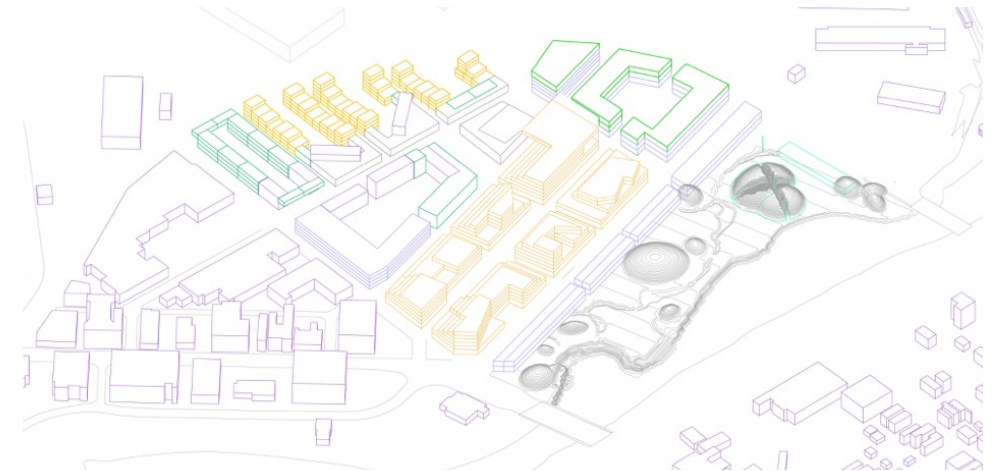


New blocks are conducive of wind harvesting and walkable neighborhoods.

Solar envelopes (from sun direction and angle at latitude) were calculated to ensure neighboring areas were not blocked from the sun by mutual shading. These envelopes gave us the tallest possible heights and profiles of the masses. This initial massing was further broken down to relate to the scale of the existing neighborhood, for ventilation, terraces and to accommodate service areas such as parking. Strategic block and mass planning is essential to sustainable development.



Solar envelopes were calculated to ensure maximization of natural light.



Final massing diagram.



Render of the creekfront, with undulating topography and the anaerobic digester

3. Energy Planning

The proposal employs various energy systems in an attempt to make it self-sufficient. Renewable energy is harnessed through solar panels and wind facades, and will be processed in a small combined heat and energy plant that also includes an anaerobic digester.

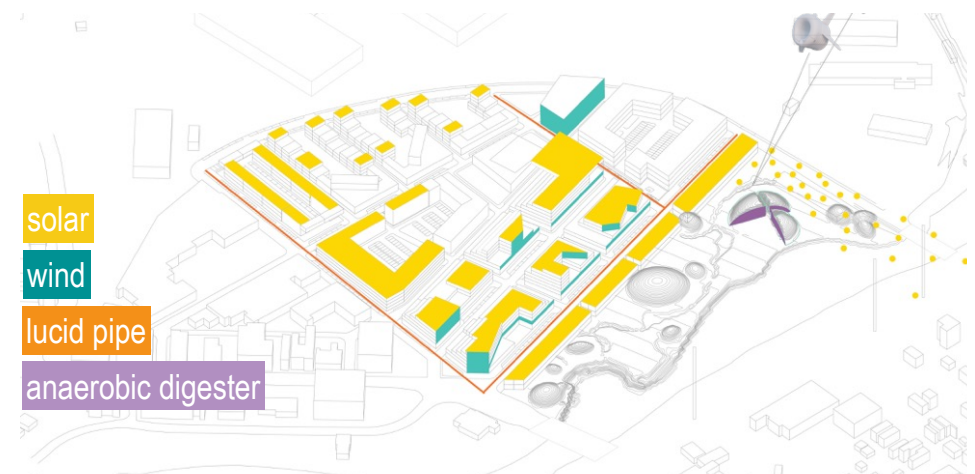
The site is projected to have a demand of 115,000 MMBtu annually. Solar panels on roofs (through a combination of 6kW and 4kW arrays) meet 3% of the site's demand. Pittsburgh has approximately 150 sun days a year, and practices like net metering and federal tax credits make solar capture feasible. Such systems have already been implemented in similar income level neighborhoods such as River Gardens, New Orleans and Solara, California.

The Lucid Pipe (tm), which harnesses the kinetic energy of water, meets about 123% of the energy demands of the site. The anaerobic digester meets about 10%. Through energy planning, it is estimated that the systems collectively meet about 140% of the site's energy demands. The figure to the right illustrates the distribution of these decentralized energy systems.

4. Creating environments for diverse microecologies

Diverse microecologies promote thriving natural systems. They not only help the remediation of air and water, but also build the region's biodiversity. As a severe disconnect in riparian and other ecosystems is observed at our site, the proposal incorporates regions for more intensive habitat planning as well as other green spaces that act as corridor habitats for various species.

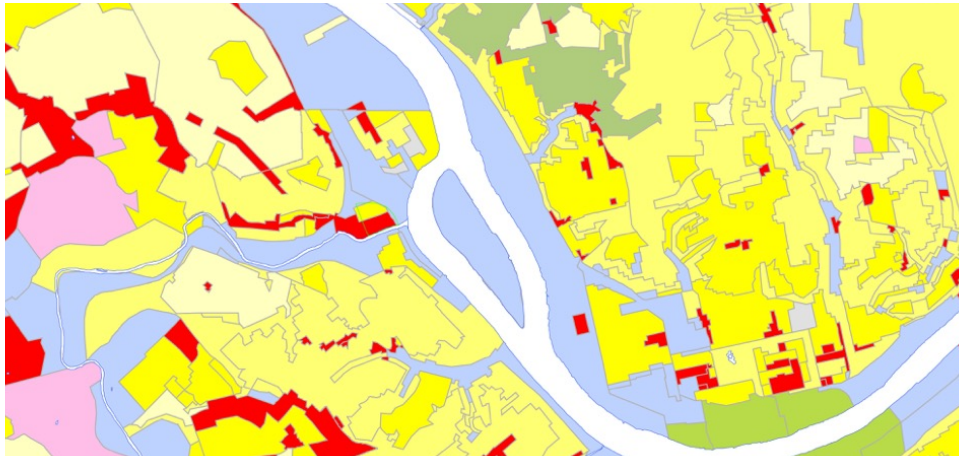
DIVERSE MICROECOLOGIES: (refer index)



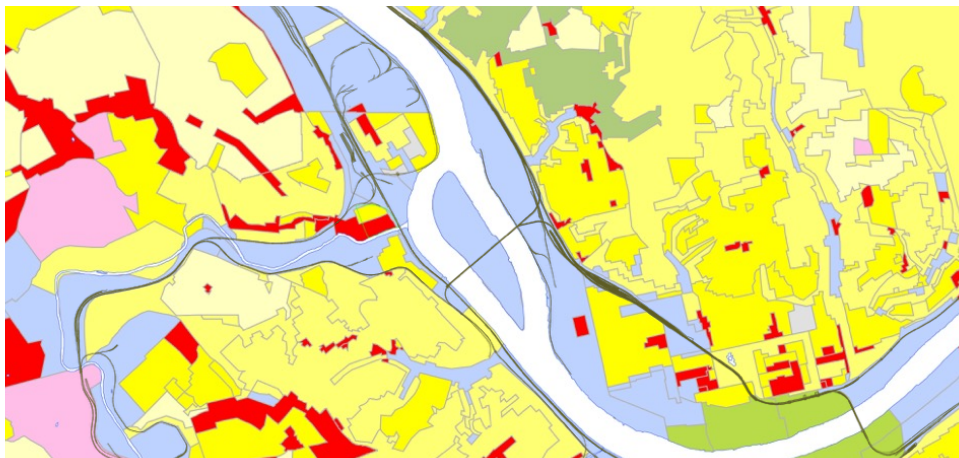
Decentralised infrastructure and energy independence is key to the proposal.

diverse microecologies

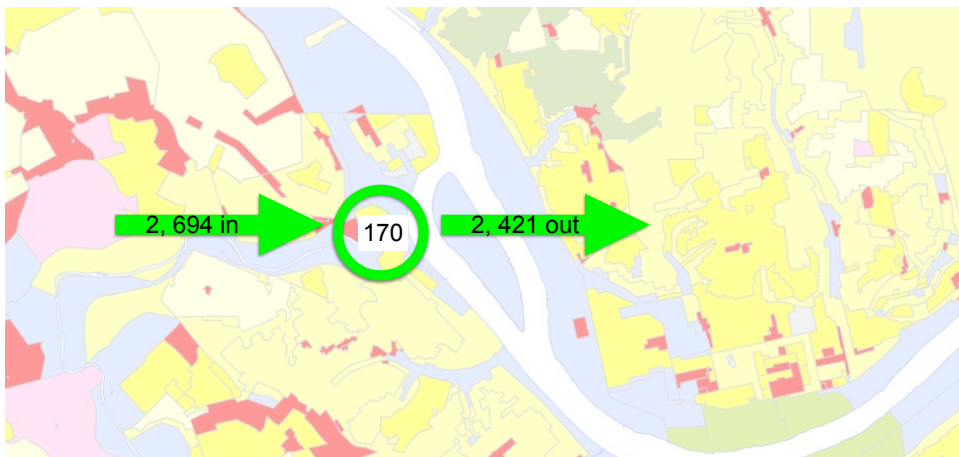




Zoning



Rail lines



Employment location (inflow, outflow)

ECONOMIC VITALITY

How can we leverage existing capacity and promote investment to create an economically vibrant community?

The analyses of zoning and job distribution resulted in identifying that only 170 of the borough's residents both live in work in McKees Rocks, where 2694 people come in for work and live outside, while 2421 people live in McKees Rocks but work outside the borough. With the majority of jobs currently being in manufacturing and transit related, with the rest being concentrated in downtown Pittsburgh, the proposal seeks to increase the ratio of live/work residents within the borough and support existing economies.

Thus, in order to achieve economic vitality, goals have been identified and subsequent corresponding strategies are listed.

goals

1. to celebrate and build on existing assets
2. to Create jobs and promote investment
3. to create and economically resilient community

strategies

1. Using Chartiers avenue as the central retail spine

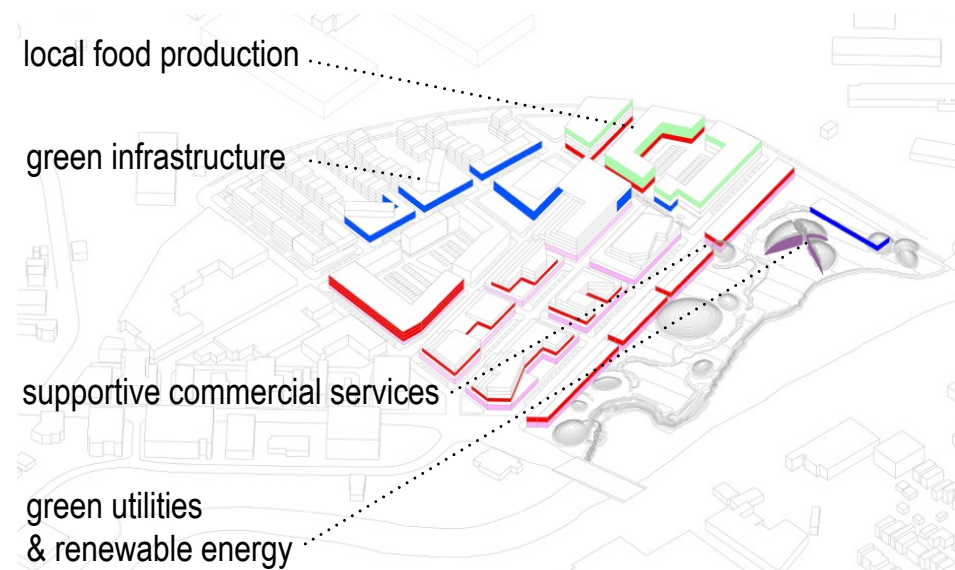
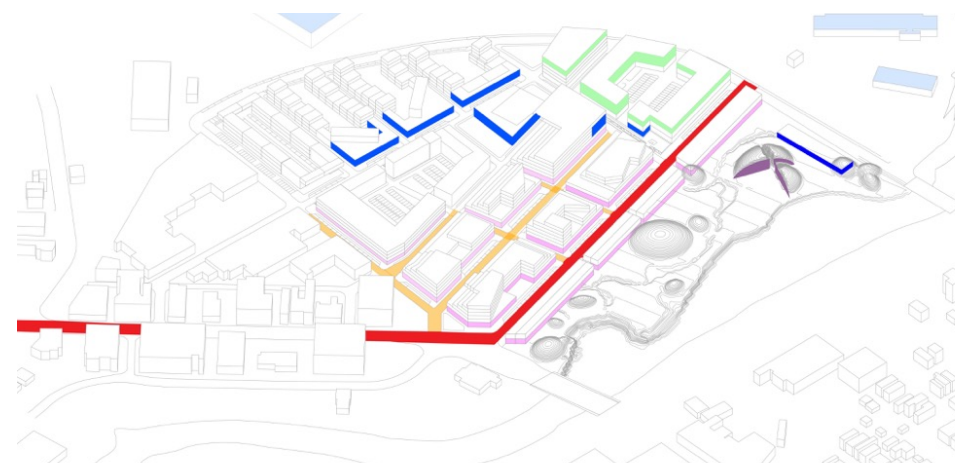
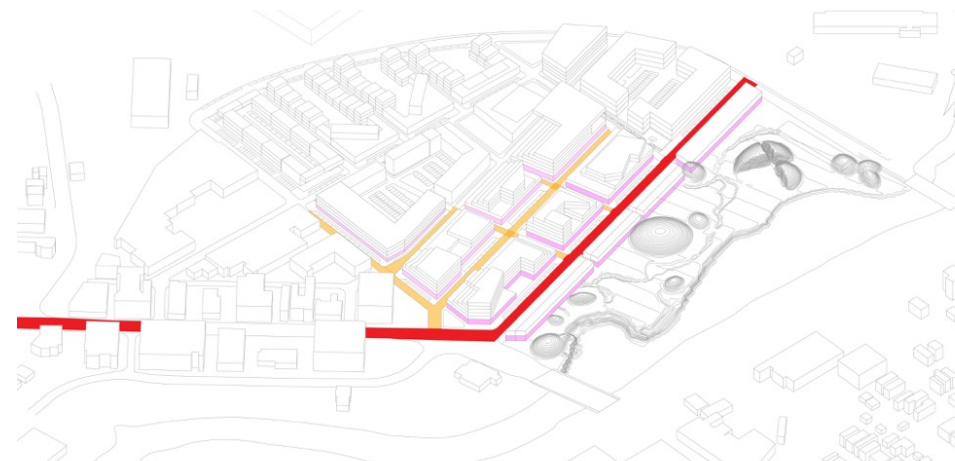
Chartiers Avenue is used as the backbone for the retail strategy of the proposal. We have followed its path and extended it into the site, backfilling it with support services. The new length helps strengthen the existing spine.

2. Relating to industrial character and traditional scale of economy

This proposal acknowledges the anticipated commercial and industrial development (CSX) to the north of the site, and builds on its industrial character. This is done by functional extension that creates a junction between the neighborhood and industrial scales. The living machines, energy center and greenhouses for food production are uses that speak to these two scales, and are zoned in a way that not only reinforces the viability of the CSX project, but also gives it a good front door.

3. Promoting green jobs and keying into existing national and state efforts

The proposal keys into existing national and state efforts in job creation. The three rivers area has an extremely high green job distribution - currently, 18,318 green jobs are held Allegheny county, and 4,052 are expected in the coming years. Much of this is due to State and Federal policies driving investment in Pennsylvania's green sectors. Some acts that support green jobs are the American Recovery and Reinvestment Act and the Green Pathways out of poverty program which provides

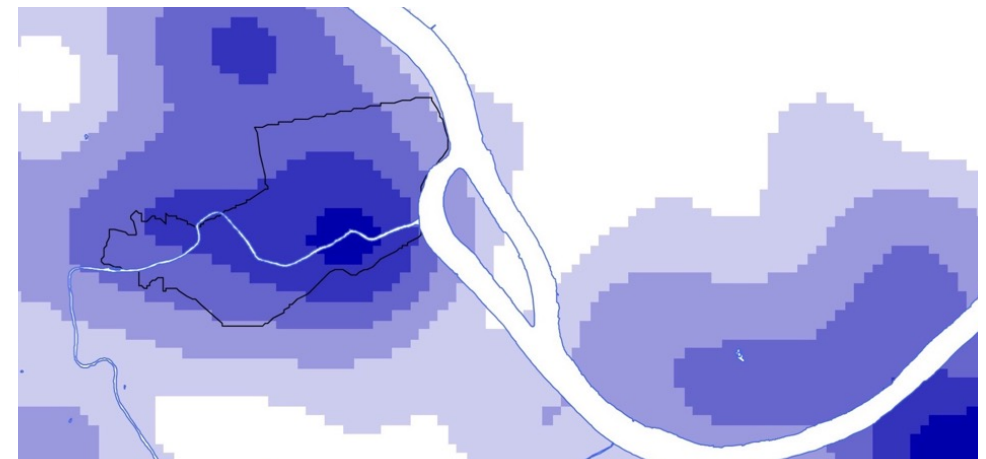
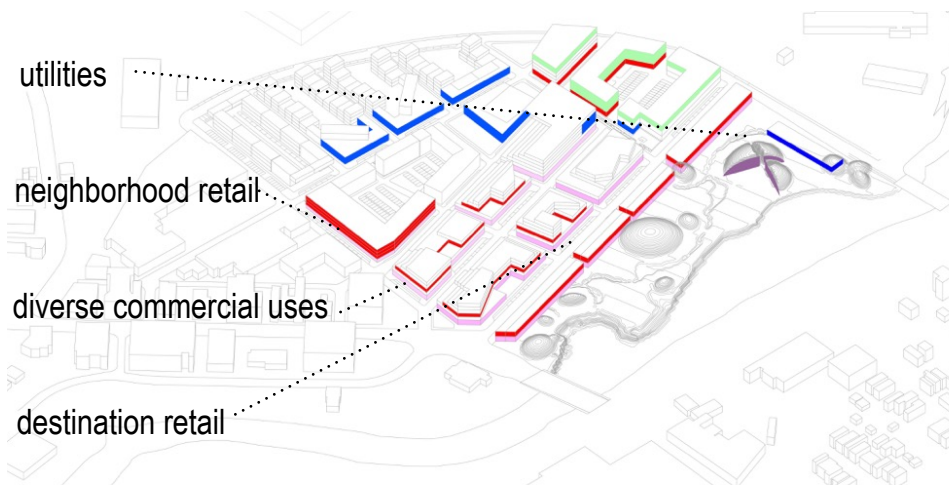


training and job opportunities in renewable energy, weatherization, etc. through certificate training. Penn State is a partner in this particular program.

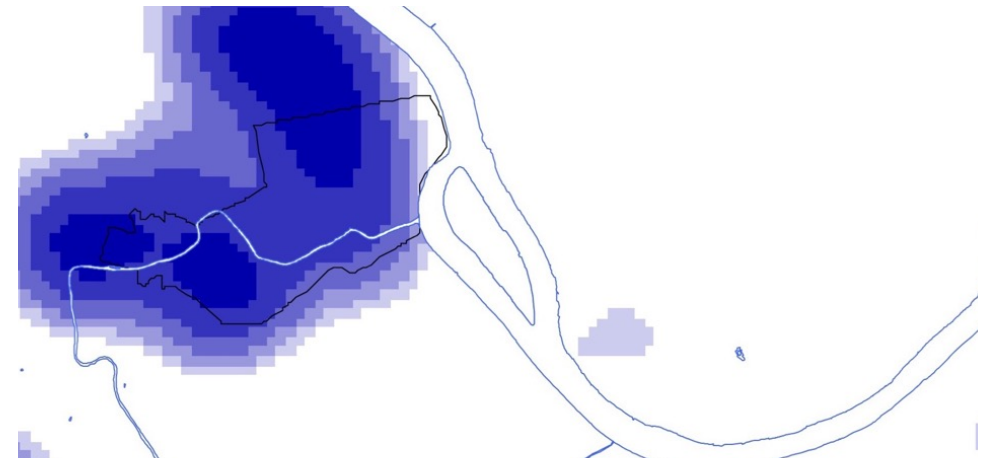
McKees Rocks has the potential to benefit from such programs. In order to make the site economically relevant in the coming years, the proposal incorporates spaces that allow for such initiatives to manifest through local food production, green infrastructure, supportive commercial services (retail, green utilities and renewable energy.)

4. Diversifying use

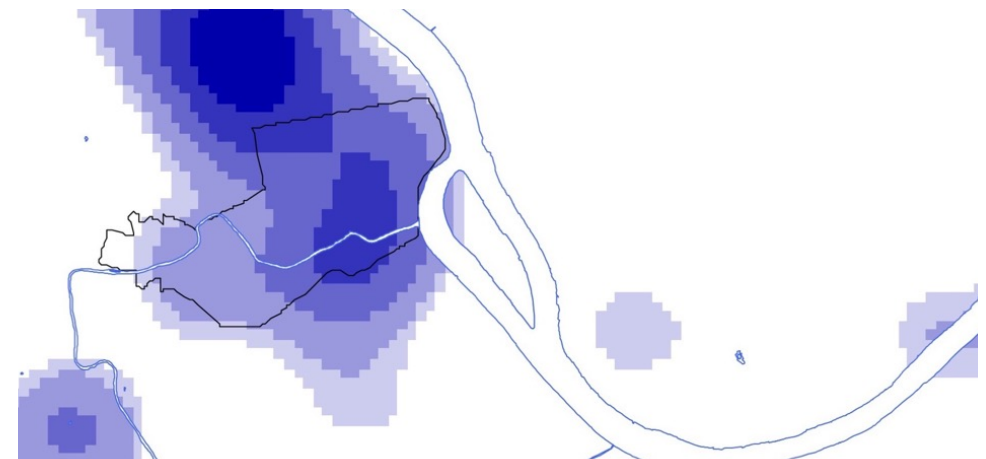
The utilities, diverse commercial uses, neighborhood retail and destination retail have been distributed across the site in a manner to ensure the economic resiliency of the site.



Concentration of all jobs



Concentration of goods production jobs



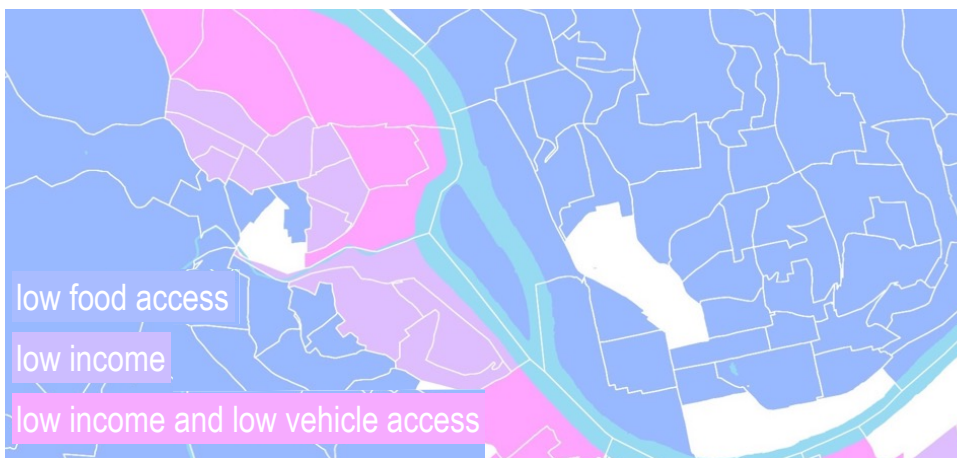
Concentration of transit and transit services jobs



Median income



Median gross rent



Food access

ACCESSIBILITY

How can we promote accessibility to food, housing and housing in the borough?

McKees rocks has a relatively low median income, coupled with a low median gross rent (see figures at left). The residents of the borough also have a low educational attainment rate, with about a quarter of the people over the age of 18 not having a high school degree. But through a mapping of vocational school and college programs, we have identified an existing willingness to participate in supplemental education. This proposal incorporates spaces that has to potential to promote education and green job training. For example, The Solara neighborhood in California has green job training for all its residents in their learning center, before they move in, and the community college in Philadelphia targets green job training as part of the Pathways out of Poverty program.

Keeping in mind that the area is challenged by low income, low educational attainment, low food access and under-performing public transportation systems, goals and strategies were identified:

goals

1. to provide affordable housing
2. to promote better transport access
3. to promote new employment and educational opportunities
4. to increase access to fresh food

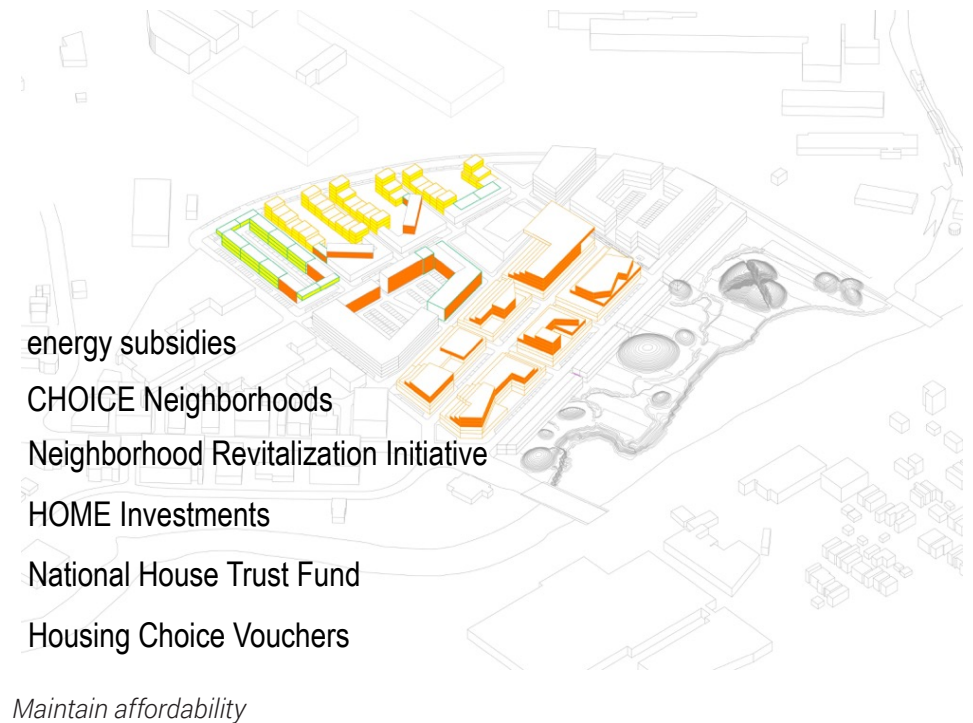
strategies

1. Maintaining affordability through programs such as Choice neighborhoods, and through energy subsidies

According to the Choice neighborhoods program, 30% of housing proposed should be affordable- in our case, 150 homes. The Choice neighborhood application process favors mixed income neighborhoods, youth training, sustainable design and development - all of which are core features of this proposal.

There are also several grants at the federal and state level which apply to the site. They are:

- HUD HOPE VI revitalization grant
- Neighborhood revitalization initiative (Federal Act which provides flexible grants for grassroots development and capacity building)
- The national and state HOME investments partnership program, which is the largest federal block grant to create affordable housing for low-income neighborhoods for building or buying and provides rental assistance to low-income families. This could be applied to the retained Hays Manor units.
- The National House Trust Fund, which supports acquisition, new construction, or reconstruction of rental units for low-income families
- Housing CHOICE vouchers for low-income leasing or renting in privately-owned housing



2. Introducing multi-modal transportation services

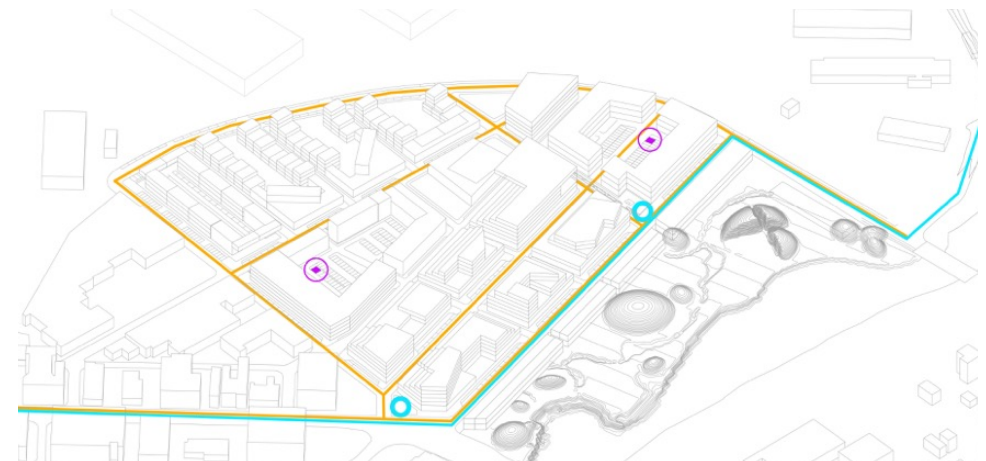
Apart from designing a walkable neighborhood, the proposal also re-routes the bus line through the extension of Chartiers Avenue in the site, adding another bus stop. There are also options for car-sharing systems as well as the inclusion of the regional bike-path through the site.

3. Incentivizing businesses

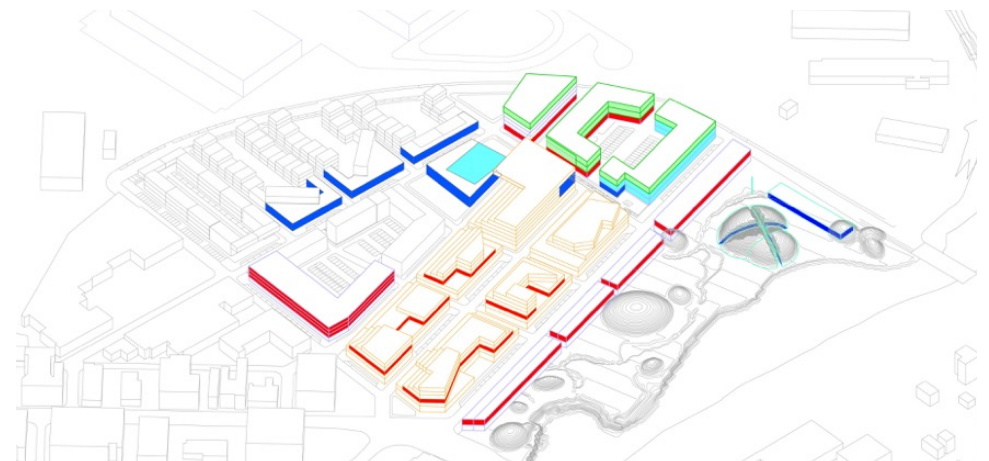
The proposal also is looking at policies such as the provision of tax incentives to the businesses in the promise to employ a certain percentage of employees from within the area, as done in Millvale. Job opportunities are further maximized through programs such as the Self Help Homeownership Opportunity Program, which provides funds for non-profit organizations to develop/improve upon their infrastructure for sweat-equity and volunteer based home ownership programs.

4. Growing and distributing food locally

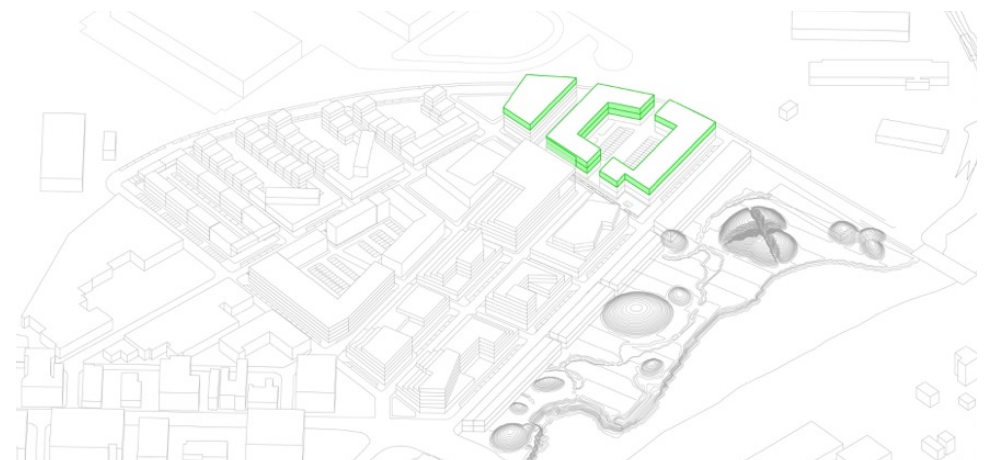
Through the provision of greenhouses and the adoption of a vertical farming system, the proposal provides the opportunity to grow food and as well as locally distribute it. With the Skygreens vertical A-frames, the proposal meets 104% of the site's vegetable requirements and 50% of the total food requirement of the site. The 843 tons of compost produced on site can be fed into the anaerobic digester, and the slurry as manure for the food, thereby creating a closed loop system.



Multi-modal options



Incentivize businesses



Grow food locally



Increase density



Activity based zones

PLACE-MAKING

How can we reinforce the identity of McKees Rocks while transforming it into a model of contextual sustainable development?

Through place-making strategies, the aim of the proposal was to root it to its historical and social context. The goals and associated strategies are as follows:

goals

1. to create a rich experiential area
2. to create a diversity of options in a walkable neighborhood
3. to retain the character of the neighborhood and build upon it
4. to make sustainability legible
5. to build on identity

strategies

1. **Increasing density and changing block structure**
The extension of Chartiers Avenue through our site is fronted with ground floor retail on either side, and the larger mixed use blocks (retail+office+apartments) are also located along this zone to create an active street and street edges.
2. **Zoning on the basis of activity**
The proposal was also designed on the bases of activities, providing a diversity of options. The various zones encompass live, work and play spaces.

3. Maintaining scale and materiality

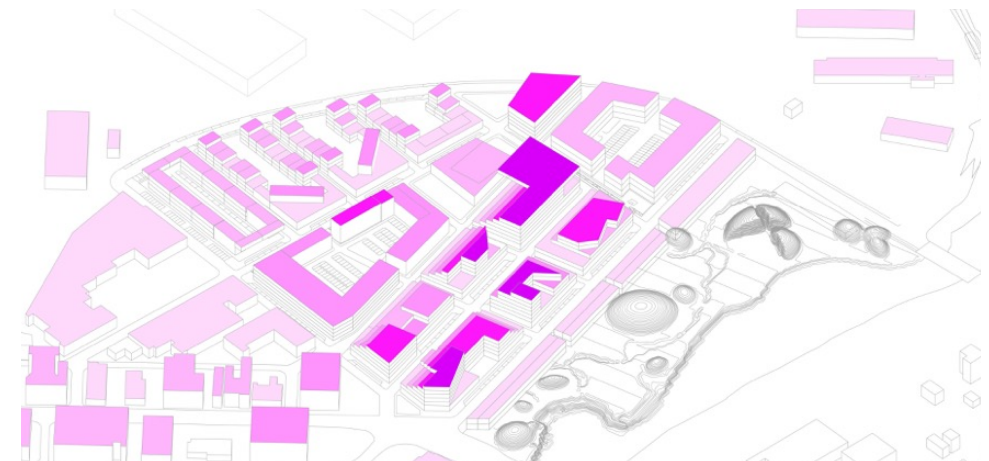
The buildings are comparable in scale to the existing surroundings, and all the buildings with heights greater than two stories have been designed with soft edges. Also, to make sure that this new development reads similarly, a material palette that represents the quality and character of McKees Rocks, such as - brick, corten steel and glass was chosen.

4. Designing an eco-revelatory landscape

The proposal integrates the sustainable site systems into the experience of the place. The systems on site are extremely legible and serve many purposes - the water systems are a beautiful addition to a streetscape that is pedagogical, playful, and ecologically sound. The energy center and living machine systems are poised to follow these principles, acting as whimsical, enjoyable as well as utile spaces.

5. Creating a new gateway

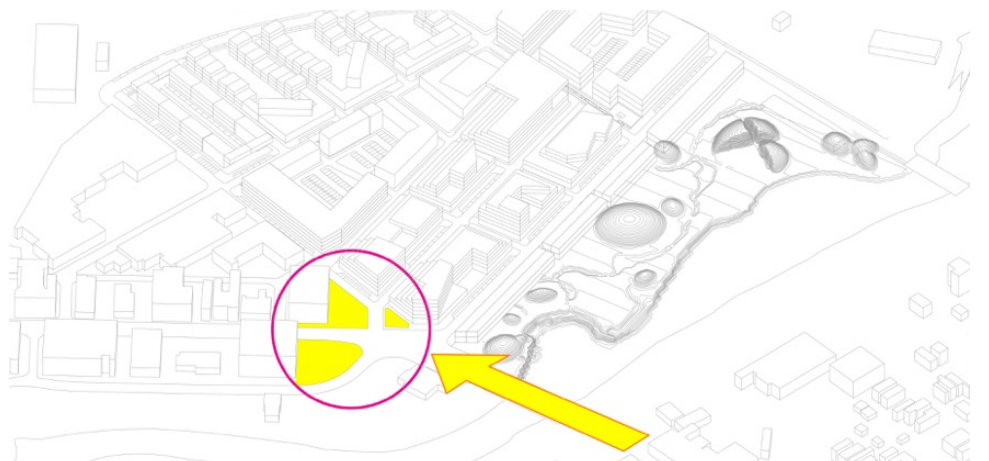
The entrance to McKees Rocks is redesigned, making legible the energy systems part of our proposal. Some ideas for the systems are- PV dust, wind tubes, wind balloons.



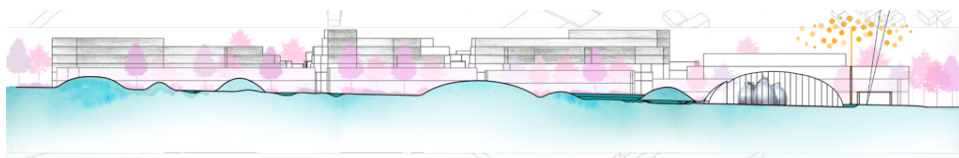
Maintaining scale and materiality



Eco-revelatory landscape



Strong entrance



Eco-revelatory landscapes



Blending systems with the streetscape and sensitive adaptive reuse



Designing a new entrance for McKees Rocks

site plan



ground floor plan



PHASING

A 4-phase development with a transect-like phasing is applicable to the design program, where a percentage of each typology is built- building the market-rate housing, rental units, commercial, retail and systems part-by-part in logical phases.



PROGRAM

The proposal encompasses the following typologies of buildings listed below:

Residential : 500 units

1. 50 units of single-family ownership housing- 1800 sq.ft each
2. 50 units of co-housing- 1600 sq.ft each
3. 50 1-bedroom apartment units - 750 sq.ft each
4. 200 2-bedroom apartment units- 1000 sq.ft each
5. 150 3-bedroom apartment units- 1250 sq.ft each

Commercial: 174,650 sq.ft

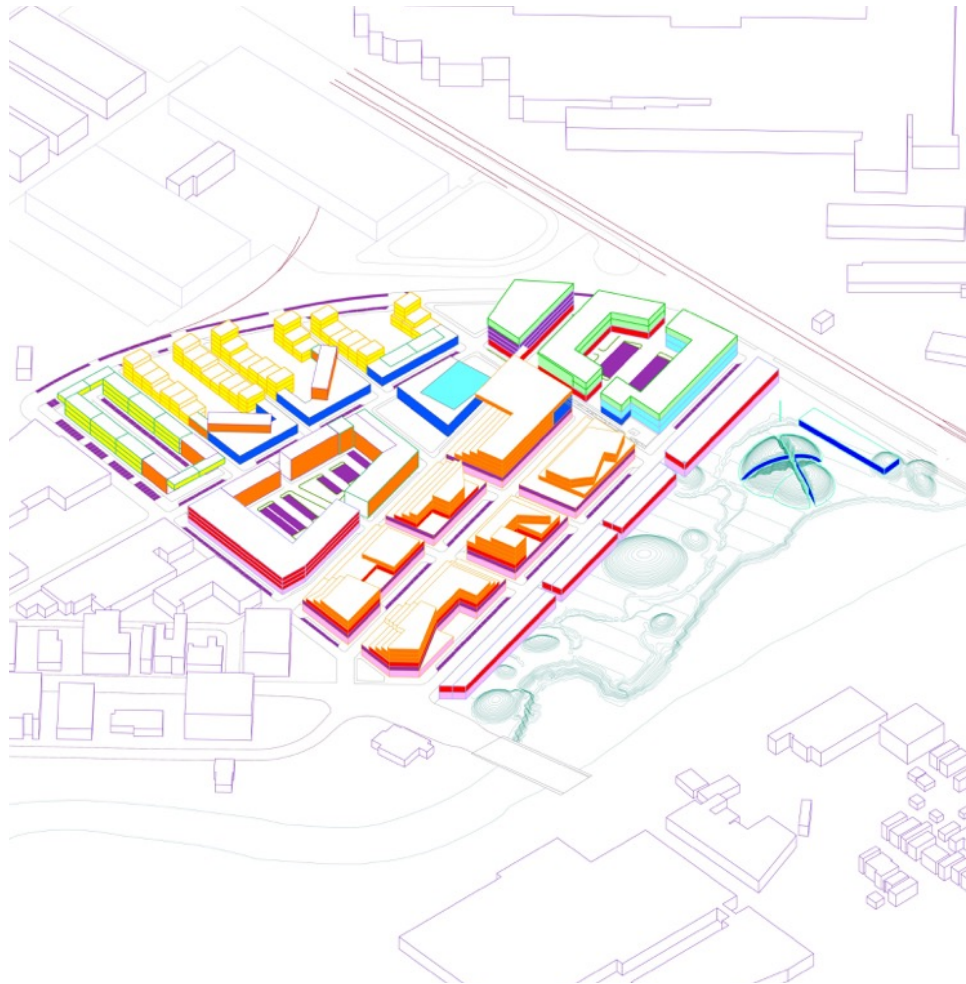
Retail: 109,200 sq.ft

Institutional: 69,530 sq.ft

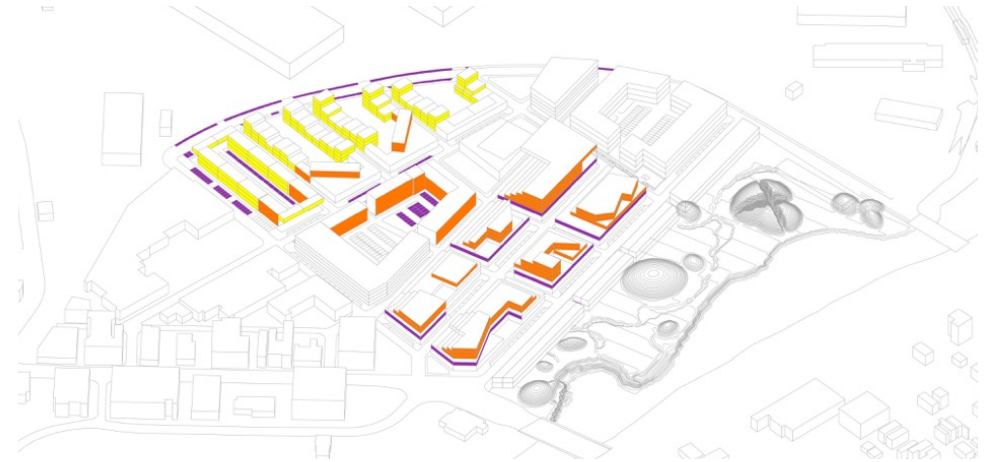
Greenhouses: 52,020 sq.ft

Energy systems: 26,800 sq.ft

Green spaces: 572,600 sq.ft



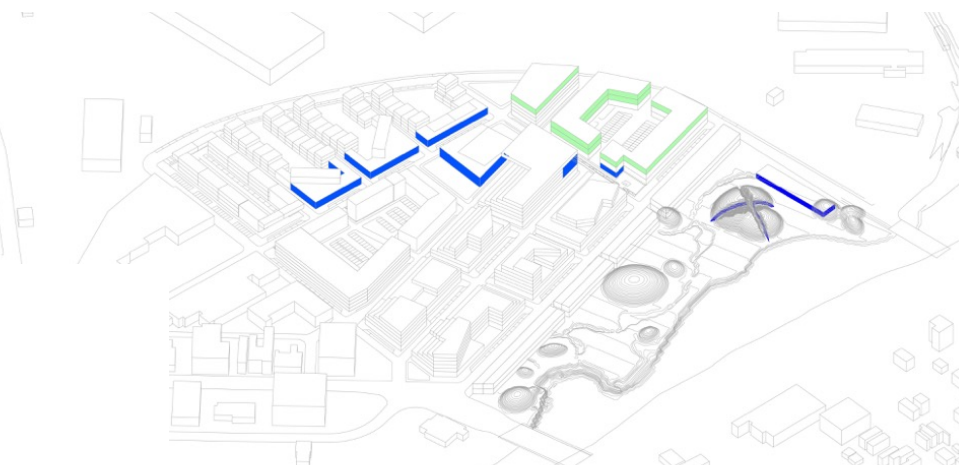
Land use



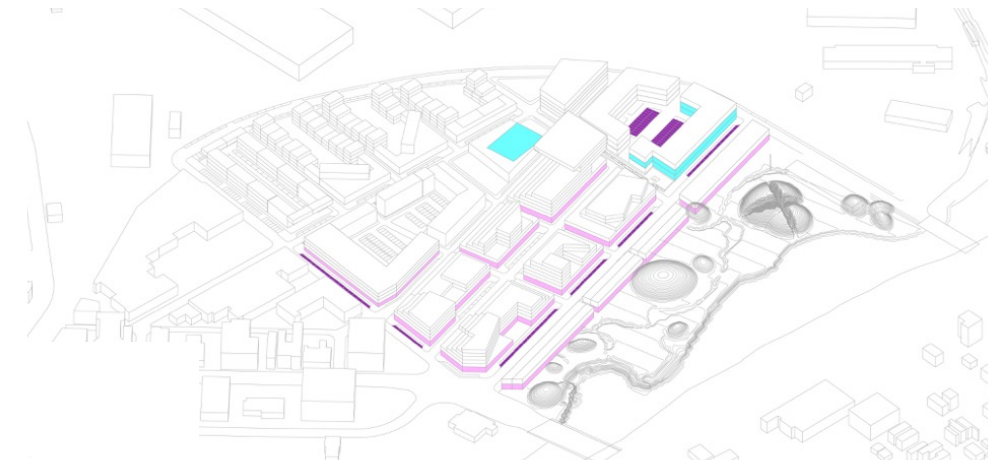
Residential



Commercial



Utilities



Retail and institutional



Green space



Creekfront landscape

appendix

SALAMANDERS

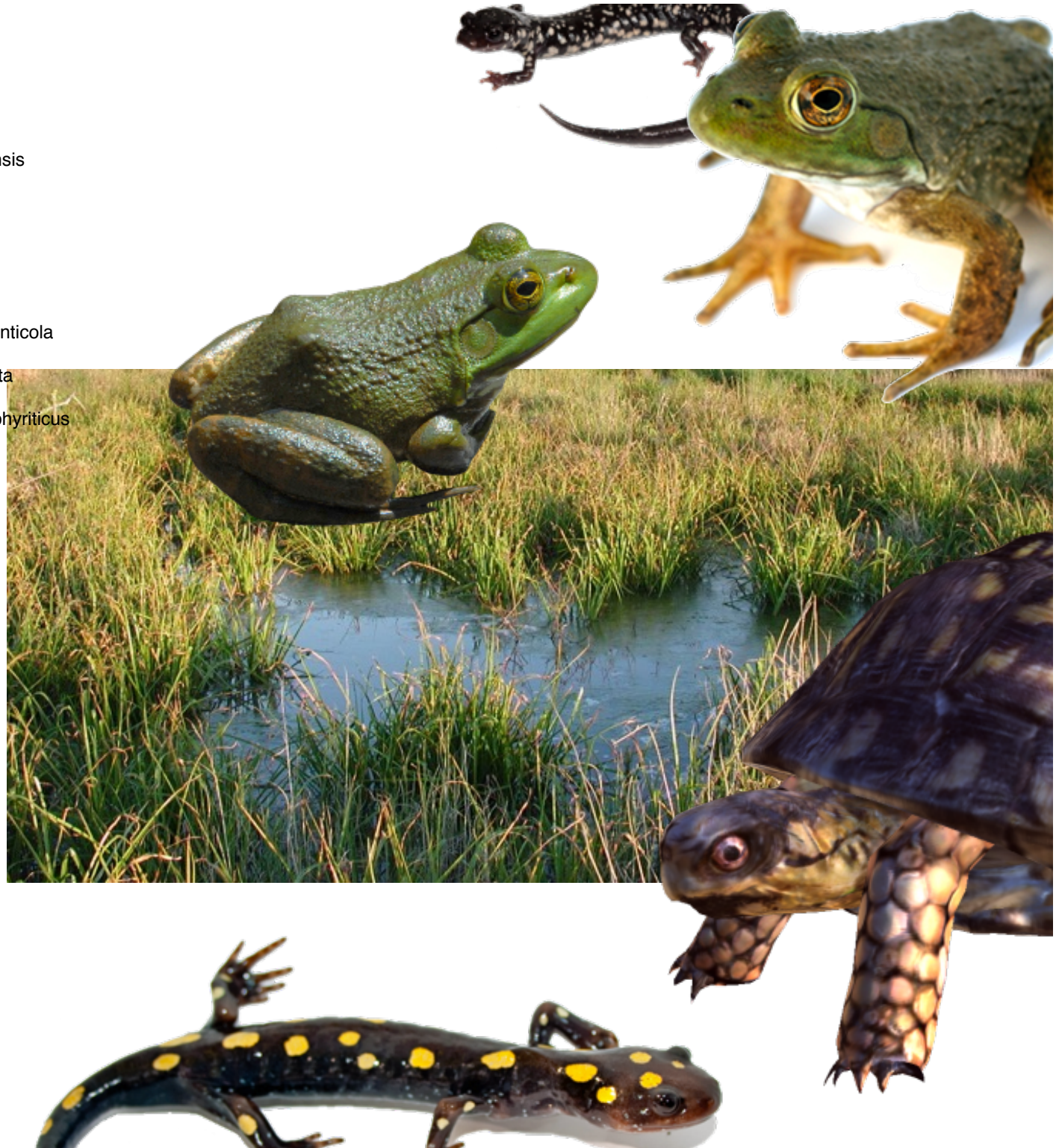
Eastern Hellbender/ *Cryptobranchus alleganiensis alleganiensis*
 Mudpuppy/ *Necturus maculosus maculosus*
 Jefferson Salamander/ *Ambystoma jeffersonianum*
 Spotted Salamander/ *Ambystoma maculatum*
 Marbled Salamander/ *Ambystoma opacum*
 Red-spotted Newt/ *Notophthalmus viridescens viridescens*
 Green Salamander/ *Aneides aeneus*
 Northern Dusky Salamander/ *Desmognathus fuscus fuscus*
 Appalachian Seal Salamander/ *Desmognathus monticola monticola*
 Mountain Dusky Salamander/ *Desmognathus ochrophaeus*
 Northern Two-Lined Salamander/ *Eurycea bislineata bislineata*
 Longtail Salamander/ *Eurycea longicauda longicauda*
 Northern Spring Salamander/ *Gyrinophilus porphyriticus porphyriticus*
 Four-toed Salamander/ *Hemidactylium scutatum*
 Redback Salamander/ *Plethodon cinereus*
 Slimy Salamander/ *Plethodon glutinosus glutinosus*
 Wehrle's Salamander/ *Plethodon wehrlei*
 Northern Red Salamander/ *Pseudotriton ruber ruber*

FROGS

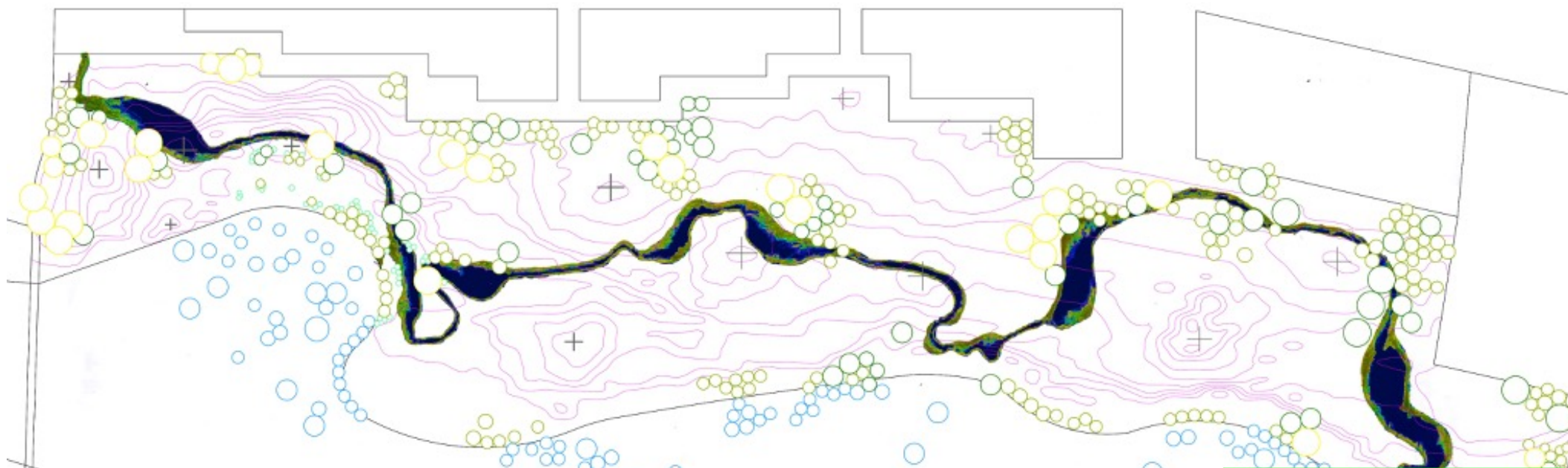
Bullfrog
 Eastern Gray Treefrog
 Eastern Spadefoot
 Mountain Chorus Frog
 Northern Cricket Frog
 Northern Green Frog
 Northern Leopard Frog
 Pickerel Frog
 Southern Leopard Frog
 Spring Peeper
 Upland Chorus Frog
 Western Chorus Frog
 Wood Frog

TURTLES

Bog Turtle
 Eastern Box Turtle
 Eastern Mud Turtle
 Pennsylvania's Blanding's Turtle
 Eastern Redbelly Turtle
 Painted Turtle
 Spotted Turtle
 Wood Turtle



appendix



groundcover

Dwarf Bush Honeysuckle/ *Diervilla sessilifolia*
 Shrubby St. Johnswort/ *Hypericum prolificum*
 Golden St. Johnswort/ *Hypericum frondosum*
 Ames Kalm St. Johnswort/ *Hypericum kalmianum*

shrub < 4 ft

Dwarf Bush Honeysuckle/ *Diervilla sessilifolia*
 Sea Buckthorn/ *Hippophae rhamnoides*
 Shrubby St. Johnswort/ *Hypericum prolificum*
 Winterberry/ *Ilex verticillata*
 Shrubby Cinquefoil/ *Dasiphora (Potentilla) fruticosa*
 Virginia Sweetspire/ *Itea virginica*
 Golden St. Johnswort/ *Hypericum frondosum*
 Creeping Silver Willow/ *Salix arenaria (S.repens)*
 Ames Kalm St. Johnswort/ *Hypericum kalmianum*
 Hidcote St. Johnswort/ *Hypericum 'Hidcote'*
 New Jersey Tea/ *Ceanothus americanus*
 Steeplebush/ *Spiraea tomentosa*
 Common Snowberry/ *Symphoricarpos albus*

shrub 4 - 8 ft

Red Chokeberry/ *Aronia arbutifolia*
 Black Chokeberry/ *Aronia melanocarpa*
 Summer Sweet Clethra/ *Clethra alnifolia*
 Red Twig Dogwood/ *Cornus sericea or alba*
 Sea Buckthorn/ *Hippophae rhamnoides*
 Inkberry/ *Ilex glabra*
 Winterberry/ *Ilex verticillata*
 Bayberry/ *Morella (Myrica) pensylvanica*
 Common Ninebark/ *Physocarpus opulifolius*
 Purpleosier Willow/ *Salix purpurea*
 Bloodtwig Dogwood/ *Cornus sanguinea*
 Naked Viburnum/ *Viburnum nudum*
 Groundseltree/ *Baccharis halimifolia*
 Swamp Rose/ *Rosa palustris*
 European Black Elderberry/ *Sambucus nigra*
 Silky Dogwood/ *Cornus amomum*
 Red Elderberry/ *Sambucus pubens*
 Common Snowberry/ *Symphoricarpos albus*

shrub > 8 ft

Pussy Willow/ *Salix caprea*
 American Elder/ *Sambucus canadensis*
 Nannyberry Viburnum/ *Viburnum lentago*
 Black Haw Viburnum/ *Viburnum prunifolium*
 Purpleosier Willow/ *Salix purpurea*
 Flameleaf Sumac/ *Rhus copallina*
 Bloodtwig Dogwood/ *Cornus sanguinea*
 Groundseltree/ *Baccharis halimifolia*
 Buttonbush/ *Cephalanthus occidentalis*
 Desert False Indigo/ *Amorpha fruticosa*
 Silver Buffaloberry/ *Shepherdia argentea*
 European Black Elderberry/ *Sambucus nigra*
 Long-leaved Violet Willow/ *Salix acutifolia 'Blue Streak'*
 Sageleaf Willow/ *Salix candida*
 Bluestem Willow/ *Salix irrorata*
 Silky Dogwood/ *Cornus amomum*
 Red Elderberry/ *Sambucus pubens*

trees

Red maple/ *Acer rubrum*
 Silver maple/ *Acer saccharinum*
 Paw Paw/ *Asimina triloba*
 River Birch/ *Betula nigra*
 American Hornbeam/ *Carpinus caroliniana*
 Bitternut Hickory/ *Carya cordiformis*
 Shagbark Hickory/ *Carya ovata*
 Green Ash/ *Fraxinus pennsylvanica*
 American Sycamore/ *Platanus occidentalis*
 Eastern Cottonwood/ *Populus deltoides*
 Willow oak/ *Quercus phellos*
 Pin oak/ *Quercus palustris*
 Black Willow/ *Salix nigra*
 Red Elderberry/ *Sambucus pubens*

CONNECT, RESTORE, CREATE

Andrea Salomon and Keertana Lingamaneni

This proposal aims to reinforce the assets of McKees Rocks, and materialize the existing opportunities. Acknowledging the existing social structure, but at the same time creating a better sense of community and a mix of various income groups. We address all these assets and opportunities through three key strategies: (1) Improve connectivity to and within the site and the borough; (2) Restore the creek edges and integrate natural amenities; (3) Create affordable and accessible civic assets.

CONNECT, RESTORE, CREATE

We looked at the site in environmental and civic terms. The Ohio River and Chartiers Creek have historically shaped the function, culture, and daily life of the borough. However, McKees Rocks has turned away from its natural assets. A rich cultural legacy exists, but community pride and an urban fabric that supports it should be woven. A network of local businesses exists, but its industry could be diversified, localized and specialized to be more resilient. Acknowledging the existing social structure, but at the same time creating a better sense of community and a mix of various income groups.

We address all these assets and opportunities through three key strategies:

1. Improve connectivity to and within the site and borough;
2. Restore the creek edges and integrate natural amenities;
3. Create affordable and accessible civic assets.





CONNECTIVITY

The geographic and topographic location of McKees Rocks is advantageous, yet the accessibility to and within the borough could be improved. McKees Rocks borough is just a 15-minute drive from downtown Pittsburgh. Increasing the bus frequency and introducing ferry rides to the downtown will improve the accessibility. Transit improvements should extend beyond the site, link to McKees Rocks bridge, take advantage of Route 51 and think about regional connections through rail.

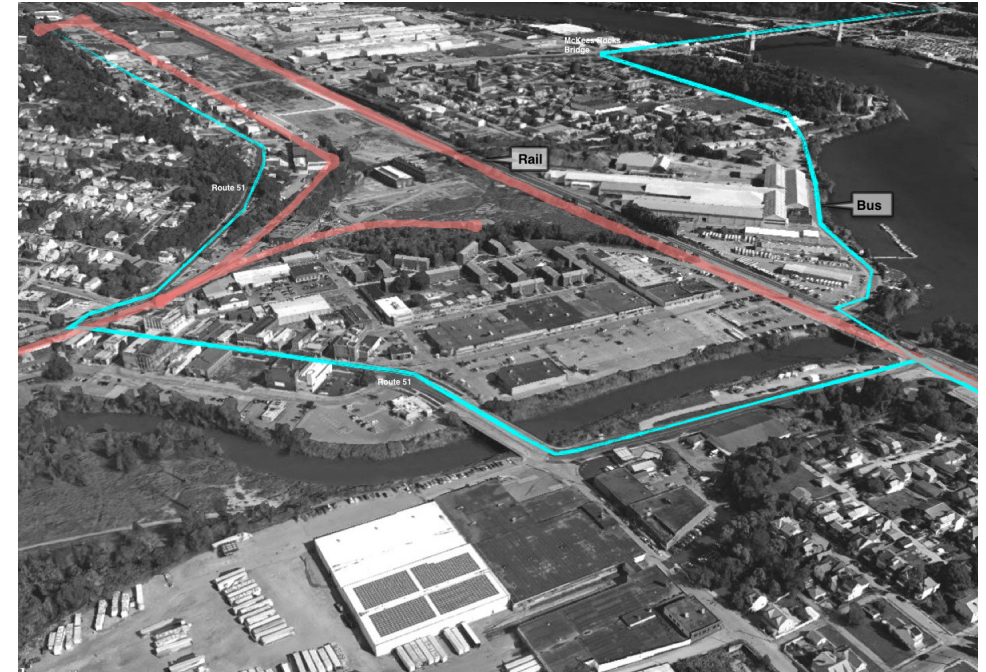
The necessity to improve accessibility is due in part to the transient population of the borough. As little as 170 people both work and live within McKees Rocks. This means the borough should help make the daily commute of its citizens affordable, accessible, and well-connected.

Multi-modal transit would be a great way to reinforce and create new links to downtown Pittsburgh. Many McKees Rocks residents commute downtown for work. Strengthening these connections not only connects residents to more jobs but also allows for easier access to the borough, encouraging more visitors for cultural events and small businesses.

Varying street types allow for multiple forms of traffic within the site. Our proposal enables safe access for all users, including pedestrians, bicyclists, motorists and transit riders of all ages and abilities. The local neighborhood streets are designed to invite less traffic (which is also emphasized by the building uses along them) and more inviting for the residents to use at their will. Residential streets have limited traffic. With parking tucked away in alleys lined by a greenway, the people are freer to spread onto the street and use it for a variety of uses.



Location of site relative to Downtown Pittsburgh



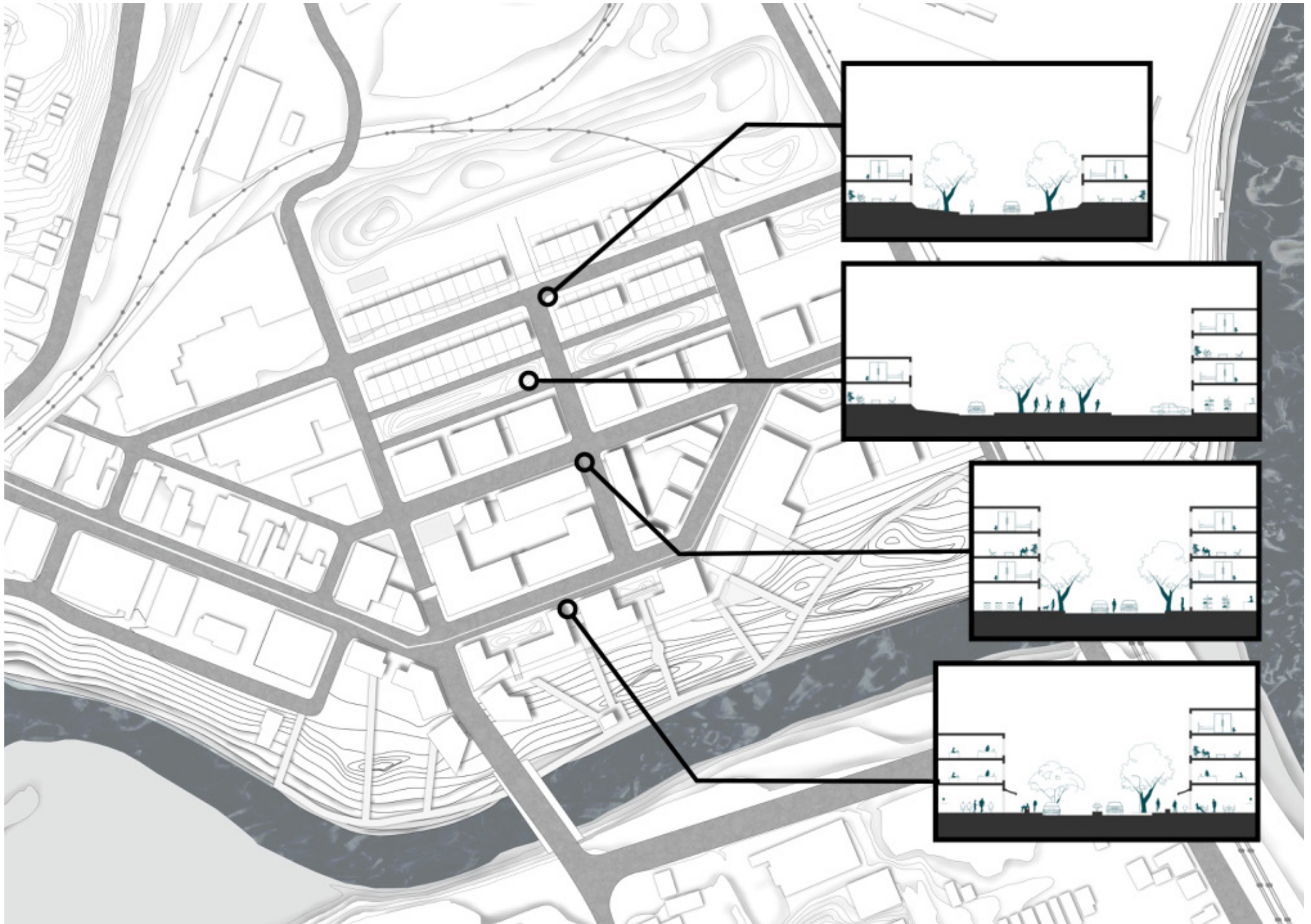
Existing rail and bus lines near the site



Location of site and McKees Rocks



Proposed street grid with extended West Carson Street and connection to CSX site



Varying street types allow for multiple speeds and forms of traffic



milkweed attracts monarch butterflies!

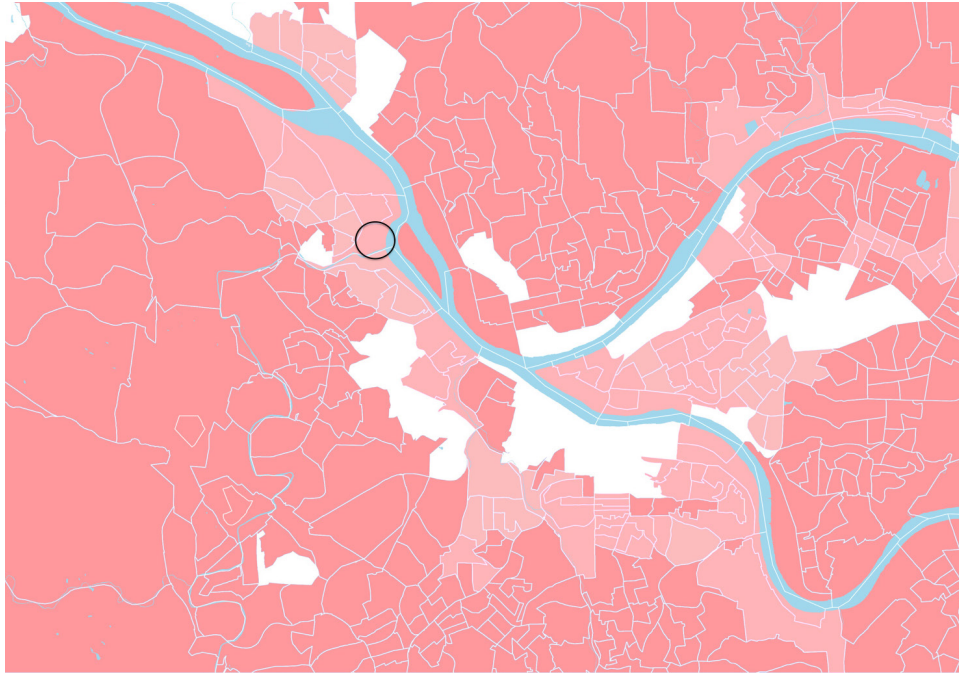
Native species aid the rehabilitation of the riparian zone and require less maintenance.

URBAN ECOLOGY

While McKees Rocks is not considered a food desert, the accessibility to fresh and healthy food is limited. Urban agriculture provides an opportunity to grow and distribute food locally. Some advantages of local food production include cost reduction, food mile reduction, an increase of food accessibility, and job creation. Our proposal meets 17% of the total food requirement for the site. Furthermore, the position of urban agriculture in McKees Rocks can create partnerships with institutions in the region and help elevate the borough as a regional leader in green manufacturing.

Flooding has historically been an environmental threat to the borough. This can be alleviated through regional watershed planning. Since the site sits at the fulcrum of the Ohio Basin and Chartiers watersheds, the threat of flooding is highly present and its role in stormwater management pivotal. To help mitigate stormwater run-off, we've increased the amount of permeable ground and created a 39% reduction in the site run-off. A bioswale system, which is linked to the creek edge with a system of underground infiltration trenches, runs along the streets and open spaces within the site. The restored riparian edge, however, is perhaps the most important contributor to stormwater management and flood mitigation. Riparian buffers are crucial to environmental health and have the added benefit of creating greener landscapes. Our proposal introduces the borough as a regional leader in resolving the county's stormwater overflow crisis.

Food Production and Accessibility



Areas of high and low food access

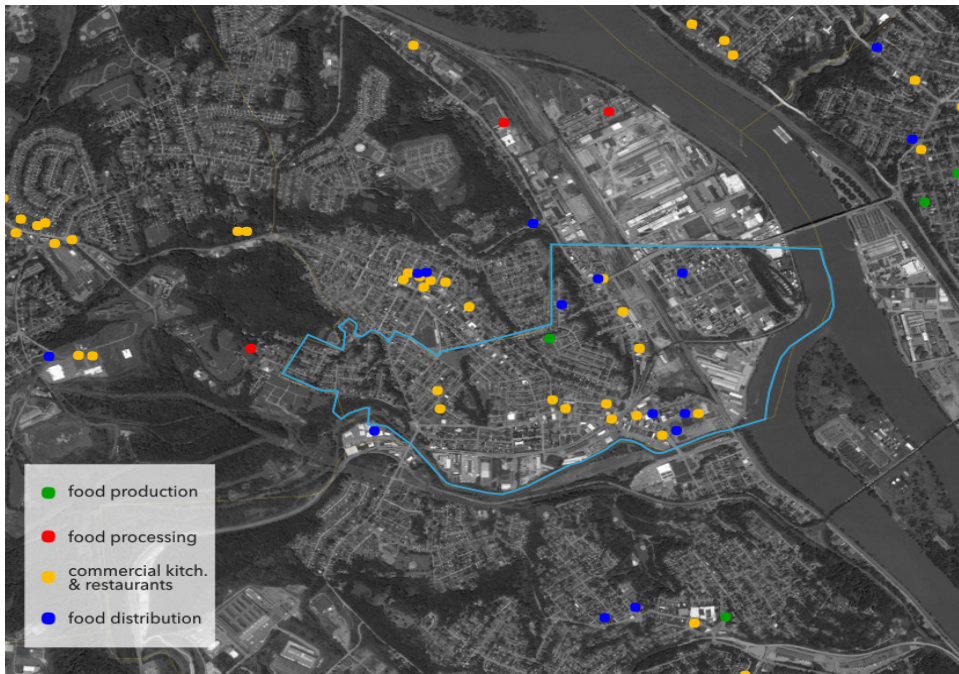
Site Permeability



Existing impermeable surfaces

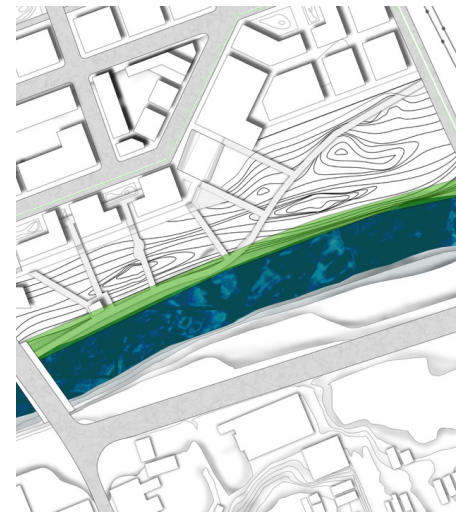


Proposed limitation of impermeable surfaces

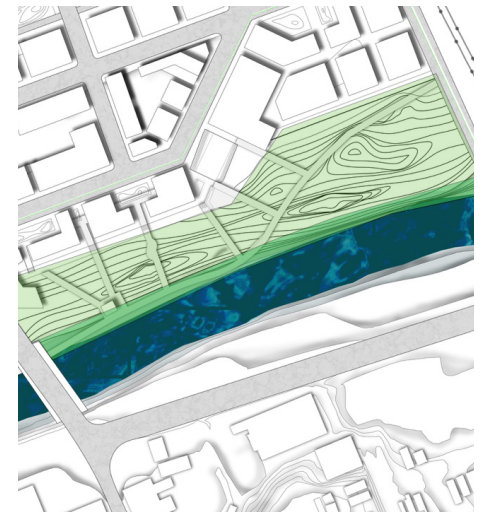


Local food sources

Revitalizing the Riparian Buffer



In green: existing riparian edge

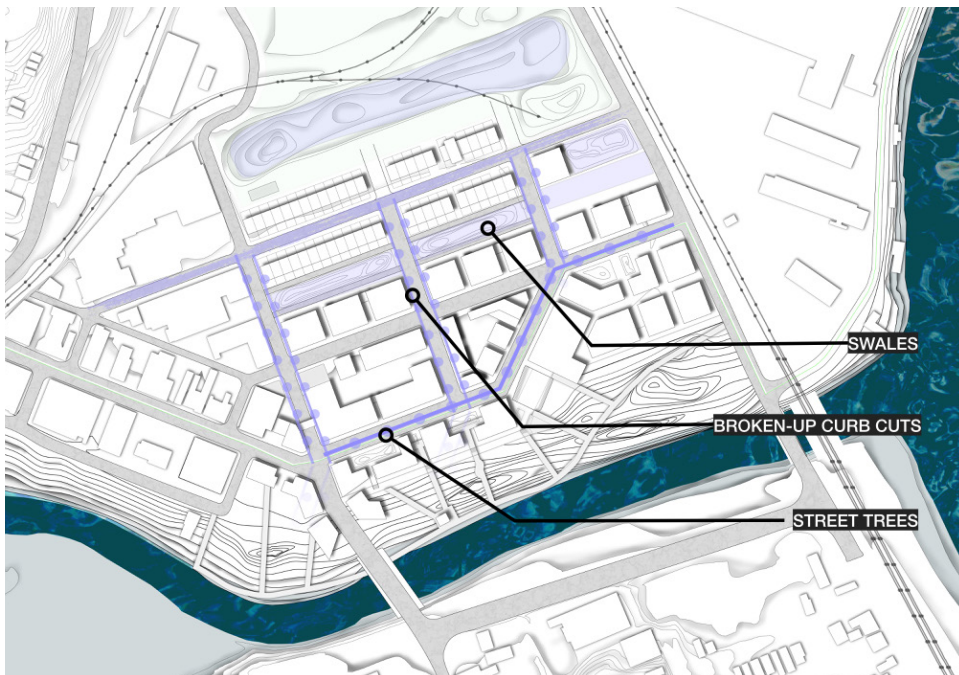


In green: proposed expansion of the riparian buffer

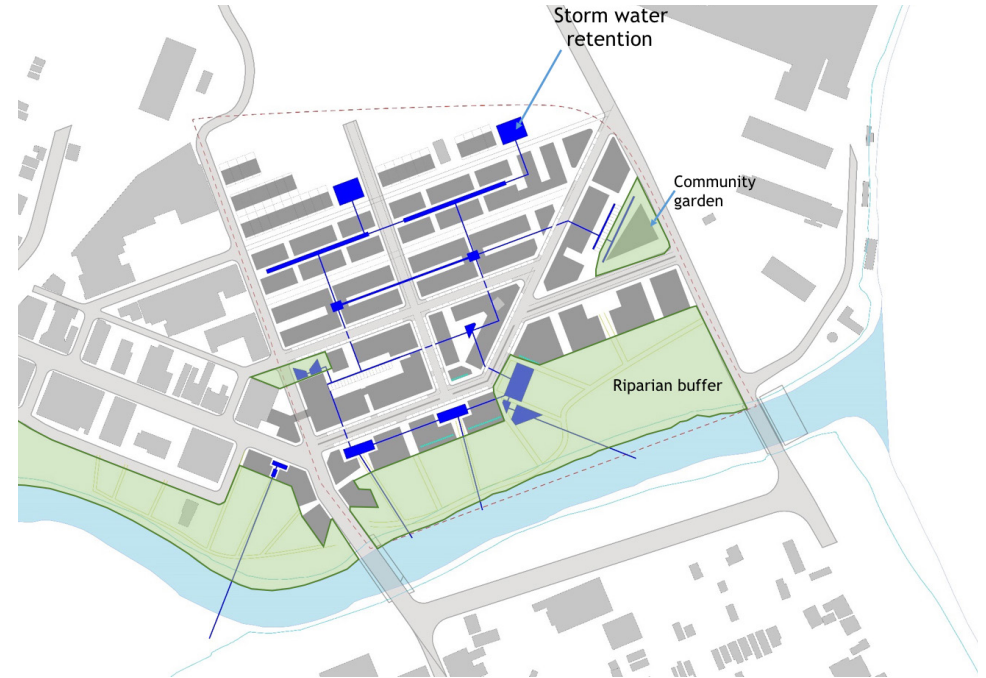
Stormwater Management



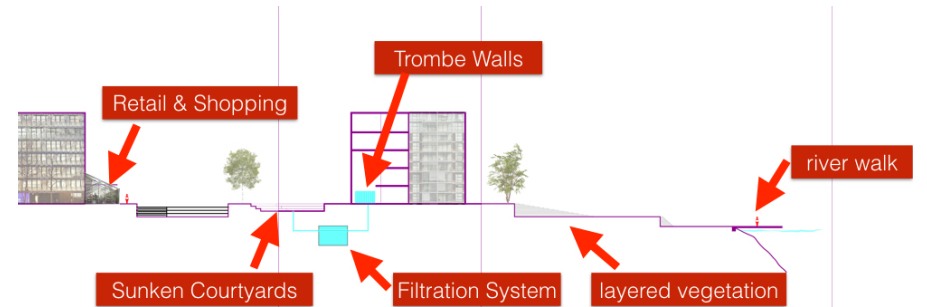
The network of linear green spaces promotes a healthier urban scape and helps mitigate stormwater run-off



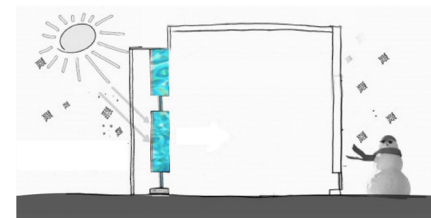
A stormwater management system, which incorporates best practices, allows for total management of surface run-off on site

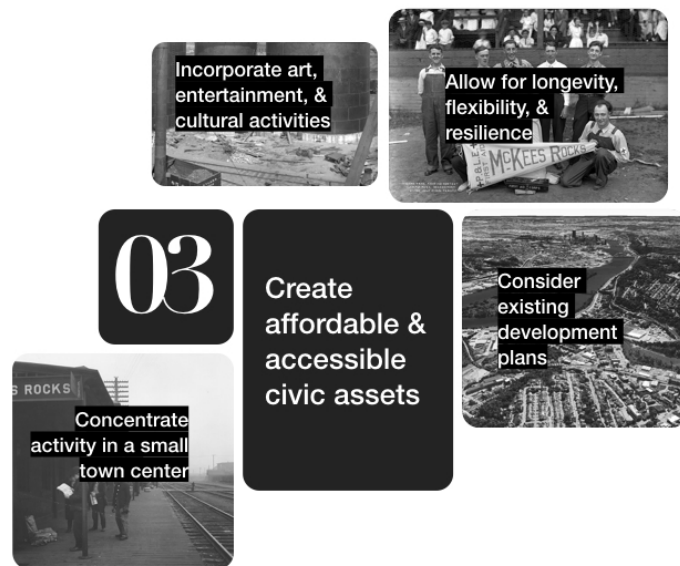


Separating the combined sewage system will prevent frequent black water outflows



A stormwater can be retained to prevent outflows and reused for thermal comfort or watering vegetation

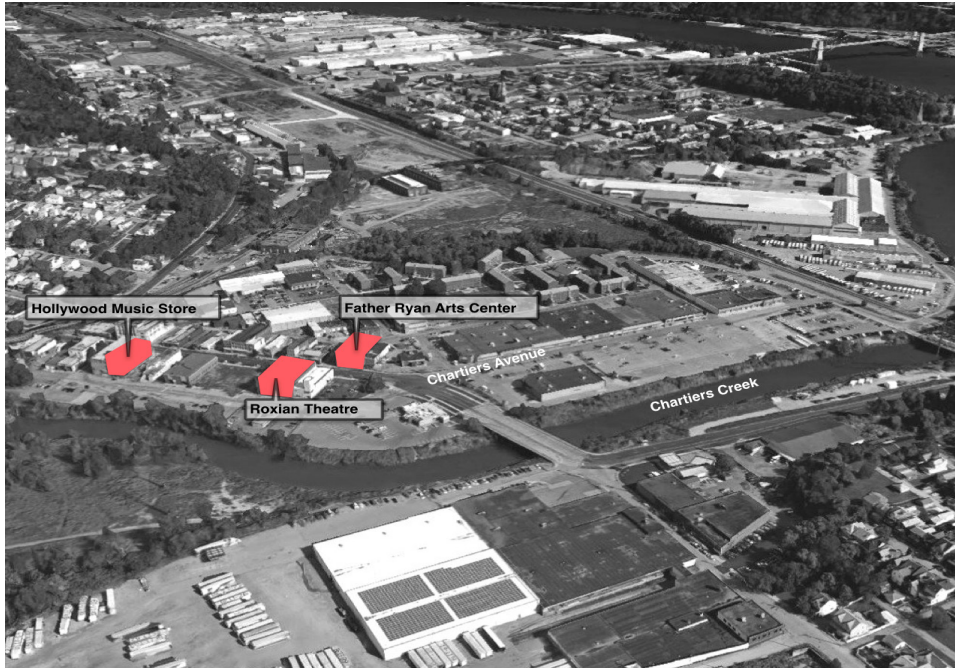




CIVIC ASSETS

The Father Ryan Arts Center, Roxian Theater, and Hollowood Music store, located in close proximity to our site, have started to anchor the cultural scene of McKees Rocks along Chartiers Avenue. Music has been an important part of the borough for so long given the popularity of the erstwhile Roxian Theatre and Hollowood. We intend to make the existing culture a part of our proposal for revitalization and want to think about the implications of such a proposal on social infrastructure and accessibility to civic connections.

Given the small scale of the borough and the proximity to downtown Pittsburgh, there is a necessity for intense concentration of activity within the borough to make it economically viable and attract further investment. The scale of the borough and commute patterns demands a concentrated center for increased livability. Though a network of local businesses exists, industry could be diversified, localized and specialized to be more resilient.



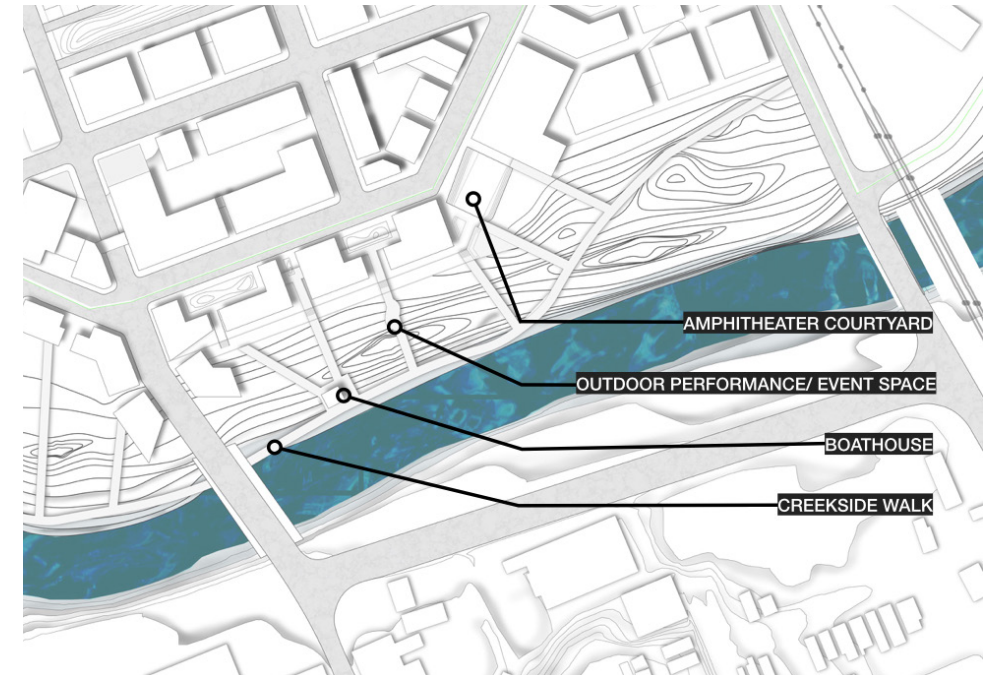
The Father Ryan Arts Center, Roxian Theater, and Hollowood Music Store are the remaining stewards of the rich cultural heritage of McKees Rocks

Job Creation



Daily commute counts of residents and workers

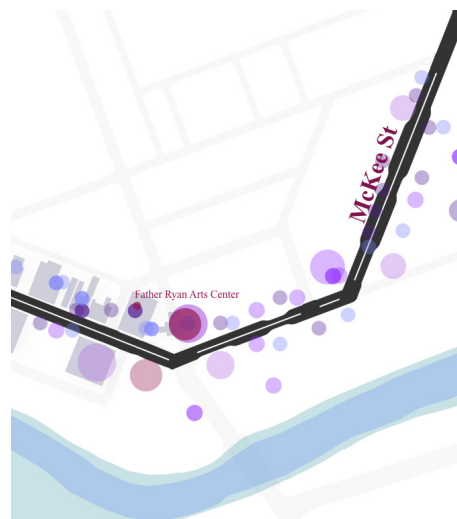
Recreational and Cultural Amenities



Activities along the creek foster environmental stewardship in the borough



Existing local employers



Proposed addition of local employers



A concentration of activities in the new center forges a sense of community

LAND USE AND PHASING

The proposal includes the following building types:

Residential: 350 units, 397,500 sq.ft

50 units of single-family ownership housing- 1700 sq.ft each

50 1-bedroom apartment units - 750 sq.ft each

150 2-bedroom apartment units- 1000 sq.ft each

100 3-bedroom apartment units- 1250 sq.ft each

Commercial: 170,000 sq.ft

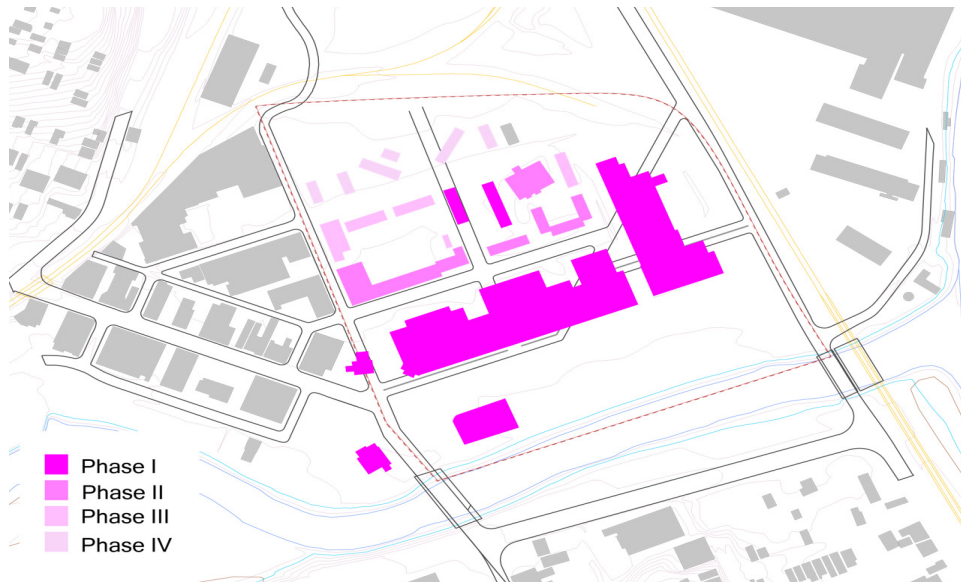
Office: 136,000 sq.ft

Civic: 78,000 sq.ft

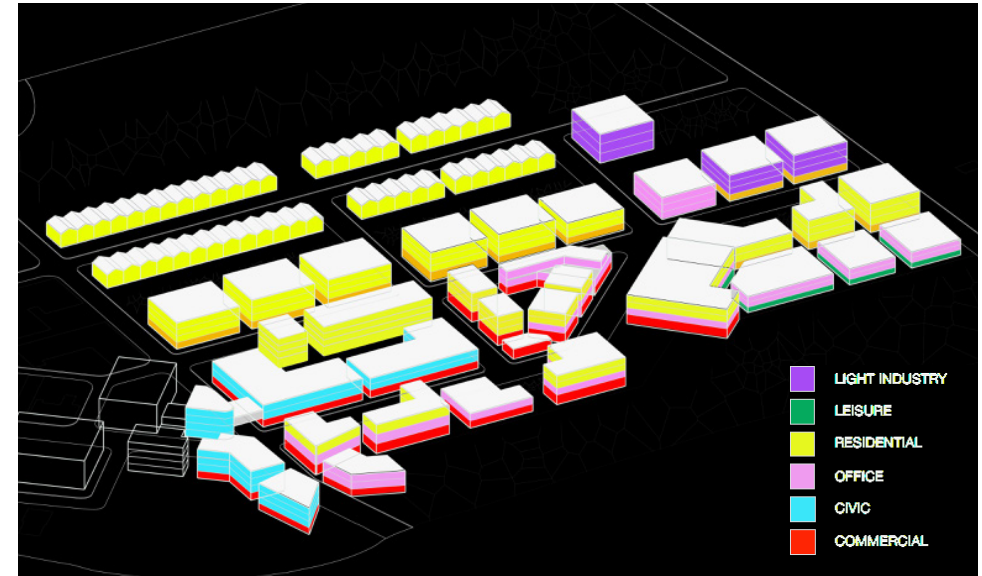
Light Industry: 60,000 sq.ft

Leisure: 43,000 sq.ft

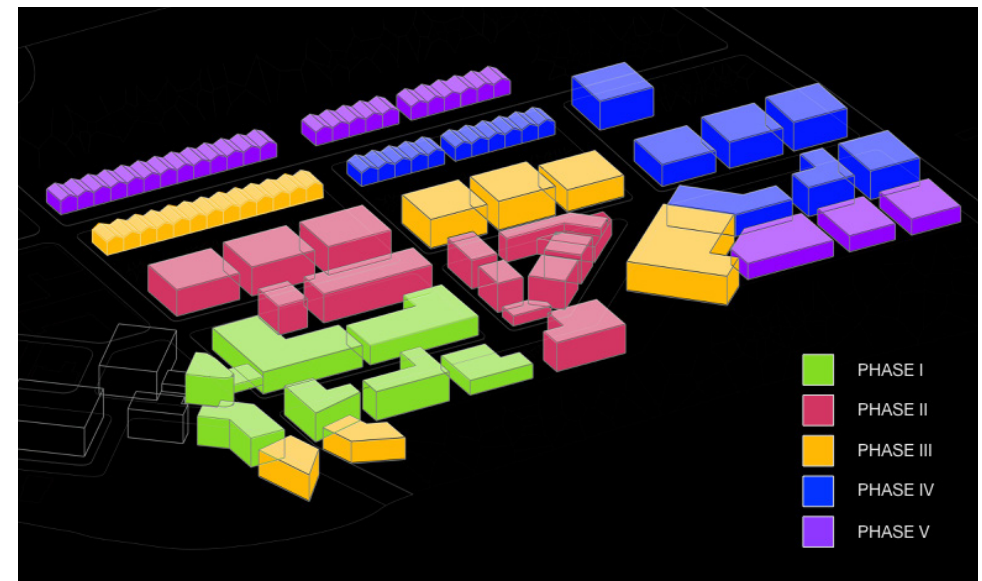
Green spaces: 650,000 sq.ft



Strategic phasing of demolition to minimize displacement and maximize community assets



Mixed-use development



Strategic phasing of development

