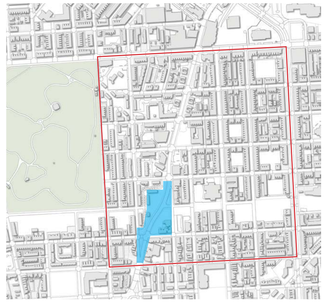
The Urban Network: Connecting Oliver Through Events, Biking, and Birds

CONTEXT



CONCEPT

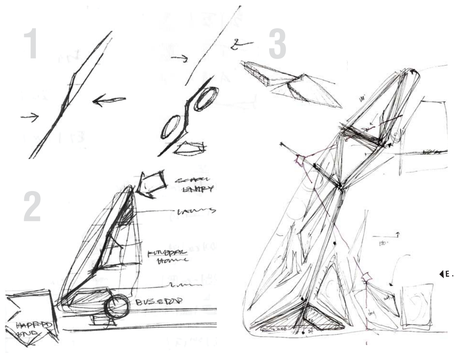
Baltimore is a city of stratifications. The city's ecological, social, historical, and economic processes exist within a stratum of layers that range from the depths of geophysical formations to the heights of the Atlantic flyway. Along this spectrum, inputs of human and natural processes interweave to form the connected network of an urban ecosystem. Within this ecosystem, Oliver, a neighborhood in east Baltimore, exemplifies the stratification of systems that inform its character. Like other neighborhoods in Baltimore, and Rust Belt cities across the United States, Oliver has experienced tremendous periods of growth followed by a period of stagnation. This stagnation has left Oliver with an aging, dwindling population, rampant crime, and vacancies that amount to nearly a quarter of its total area. The culmination of these elements—aging population, crime, and vacancies—create an atmosphere described by Snell as disorder. However, disorder, especially in an area like Oliver, is influenced nearly exclusively by the presence of vacant lots and vacant buildings. Therefore, by eliminating vacancies in Oliver, disorder is eliminated. This fact positions demolition as a very versatile tool in Oliver, a neighborhood that could benefit not only from the elimination of vacancies, but the creation of public space as well.

By utilizing demolition as a precise, surgical tool in the elimination of disorder and the creation of public space, the stratifications that exemplify Baltimore can be molded and polished. High levels of homeownership along Hoffman Avenue offer an ideal social climate for the precise demolition and the creation of a spine of civic space that highlights five aspects of stratification—zones of interaction, threads within the landscape, mats to build on, points of human systems, and paths across Oliver. Zones will become immediate events that can position the neighborhood, and the people within it, for change. Threads, mats, and points become inputs in the demolition equation—delineating vacant houses for deconstruction and conversion to civic and ecological space. Finally, threads become a network—human and avian—that stitches bikeways, parks, and greenways to form a cohesive, functioning system; the urban system.

SITE PLAN

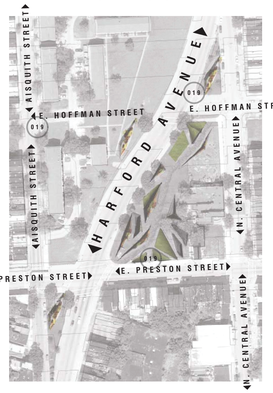
CONCEPT SKETCHES

1. Forces exerted from public outlets like 2. Harford Avenue, the 019 bus stop. a nearby school, and funeral home outline a shifting framework that serves as the basis for 3. circulation, planting design, and stormwater management.



VEHICULAR HIERARCHY

With its minimal traffic congestion, E. Hoffman Street becomes the spine of a bicycling and pedestrian network, attaching to the proposed Jones Falls Bikeway.

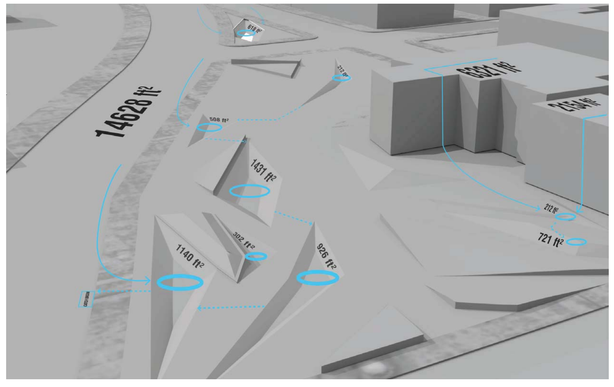


PEDESTRIAN SYSTEMS

An event lawn, theater seating, community garden, and children's play area offer recreational amenity to adjacent residences while seating is provided near bus stops.

STORMWATER SYSTEMS

Calculations demonstrate the minimal cubic footage of constructed bioswales necessary to manage stormwater created by adjacent buildings and roadways (72 ft²). This allows stormwater from a much broader area (25,000 ft²) to be filtered and infiltrated before it is released into the combined sewer system [1].



STORMWATER CALCULATIONS

EXISTING CONDITIONS

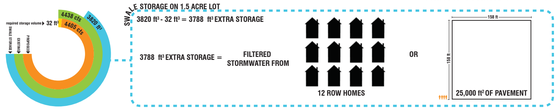
Cover Type	Area (ft2)	Area (acres)	Coefficient (C)	Intensity (in/hr)	Velocity (cfs)
Pavement:	14628	0.34	0.9	4.5	1.36
Asphalt:		0.00	0.9	4.5	0.00
Gravel:	4962	0.11	0.25	4.5	0.13
Lawn:	43022	0.99	0.1	4.5	0.44
SW Mixes:	5137	0.12	0.03	4.5	0.02
Rooftop	8475	0.19	0.9	4.5	0.79
Total	76224	1.75			2.74

Runoff Volume : **4438 ft³**

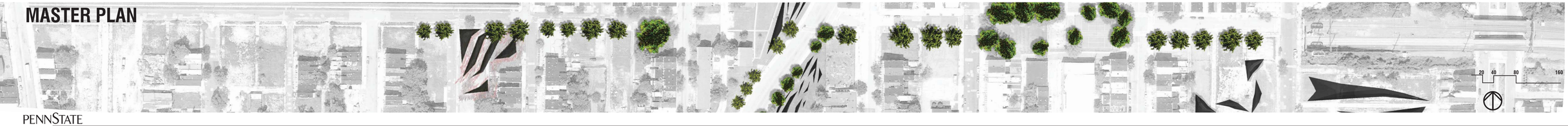
PROPOSED CONDITIONS

Cover Type	Area (ft2)	Area (acres)	Coefficient (C)	Intensity (in/hr)	Velocity (cfs)
Pavement	14628	0.34	0.9	4.5	1.36
Asphalt	0	0.00	0.9	4.5	0.00
Gravel	0	0.00	0.25	4.5	0.00
Lawn	53121	1.22	0.1	4.5	0.55
Rooftop	8475	0.19	0.9	4.5	0.79
Total	76224	1.75			2.70

Runoff Volume : **4405 ft³**



MASTER PLAN



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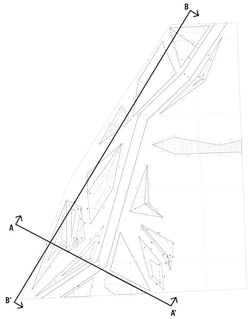
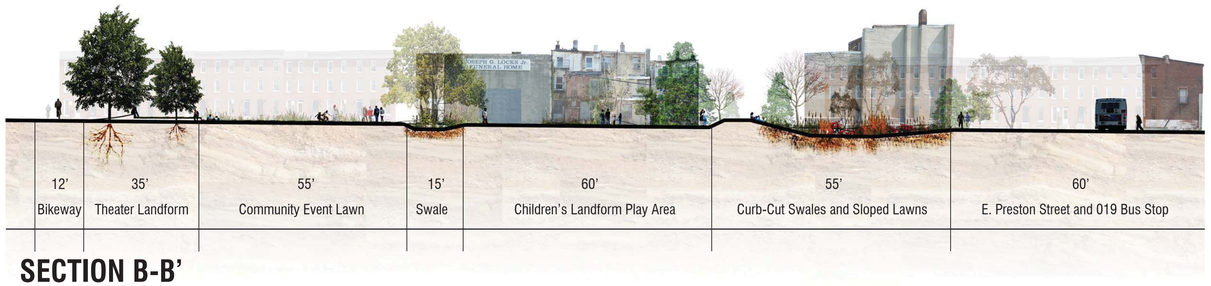
REFERENCE MAP



SECTION A-A'

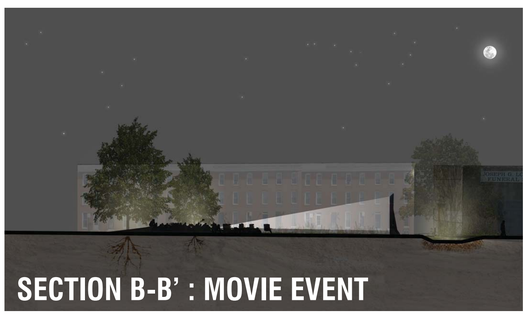
2 4 8 16



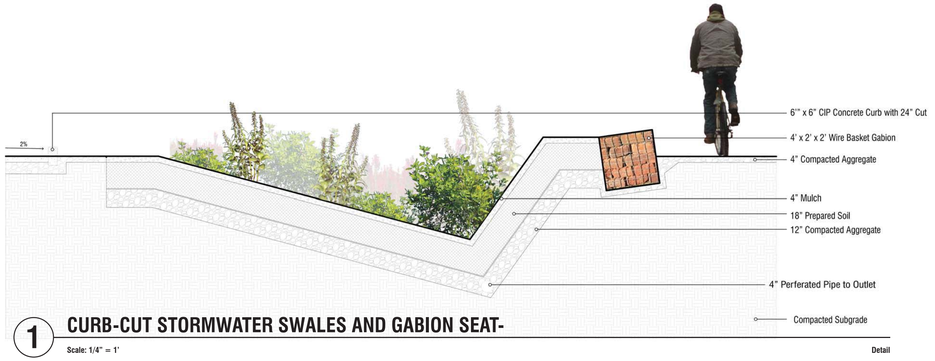
SECTION B-B'

5 10 20 40

Site details demonstrate three scenarios prevalant throughout the design--stormwater swales, sloped lawns, and gabion seating walls. Such drawings act simply as a starting point for the construction of these spaces, and are meant to be flexible depending on site context and conditons. For instance, existing infrastructure might hinder the installation of a stormwater swale, but might provide the opportunity for a sloped lawn instead. Additionally, while existing slope may not allow for curb cuts be enacted along roadways, stormwater swales can still be built to handle adjacent houses and properties. In this light, details are intended to act as models for manipulation, rather than rules for construction.

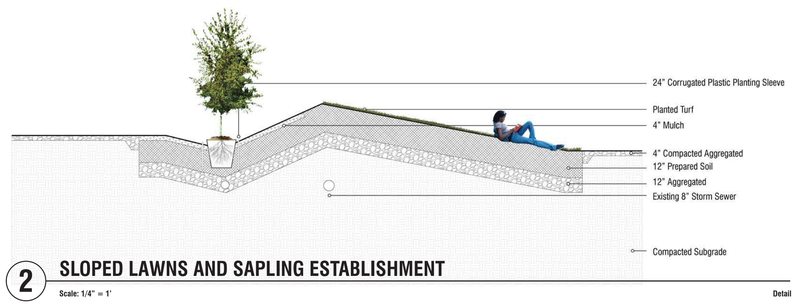


SECTION B-B' : MOVIE EVENT



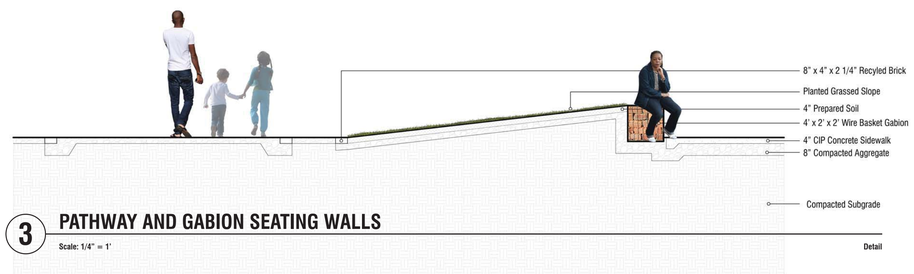
1 CURB-CUT STORMWATER SWALES AND GABION SEAT-

Scale: 1/4" = 1' Detail



2 SLOPED LAWNS AND SAPLING ESTABLISHMENT

Scale: 1/4" = 1' Detail



3 PATHWAY AND GABION SEATING WALLS

Scale: 1/4" = 1' Detail

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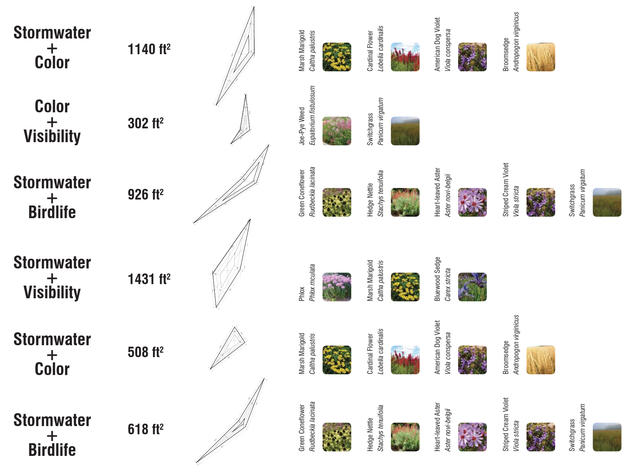
PLANTS FOR EVERY PURPOSE

Each plants species acts as a tool to achieve a desired fuction, whether it be remediating lead soils, providing color, or filtering stormwater. In tandem the plant species listed above can be a powerful step towards the creation of safe spaces that provide social and ecological functions to the Oliver neighborhod.

LAYOUT AND DIMENSIONING

Stormwater catchment swales, open lawns, and playful mounds vary in size and shape to achieve a variety of functions. While stormwater swales might delineate territory (like the existing community garden in the northeast corner), stepped lawn spaces provide seating for events like movie nights, festivals, and band performances.

LANDFORMS AND FUNCTION



Common Name	Species	% weight per lb/acre	Seed # per ounce	Seed # per lb	Cost per ounce of seed	Cost per lb of seed	Cost per acre of seed	Cost per square ft of seed	Cost for Area 1
Marsh Marigold	*Caltha palustris*	15%	26,000	416,000	$80.00	$1,280.00	$192.00	$0.0044	$2.62
Cardinal Flower	*Lobelia cardinalis*	15%	400,000	6,400,000	$50.00	$800.00	$120.00	$0.0028	$1.64
American Dog Violet	*Viola conspersa*	15%	9,000	144,000	$50.00	$800.00	$120.00	$0.0028	$1.64
Broomsedge	*Andropogon virginicus*	60%	15,625	250,000	$8.00	$128.00	$76.80	$0.0018	$1.05
									$6.95

Common Name	Species	% weight per lb/acre	Seed # per ounce	Seed # per lb	Cost per ounce of seed	Cost per lb of seed	Cost per acre of seed	Cost per square ft of seed	Cost for Area 2
Joe-Pye Weed	*Eupatorium fistulosum*	30%	7,500	120,000	$125.00	$2,000.00	$600.00	$0.0138	$2.05
Switch Grass	*Panicum virgatum*	70%		259,000	$50.00	$70.00	$49.00	$0.0011	$0.17
									$2.22

Common Name	Species	% weight per lb/acre	Seed # per ounce	Seed # per lb	Cost per ounce of seed	Cost per lb of seed	Cost per acre of seed	Cost per square ft of seed	Cost for Area 3
Green Coneflower	*Rudbedia lacinata*	7.5%	8,000	128,000	$20.00	$320.00	$24.00	$0.0006	$0.25
Hedge Nettle	*Stachys tenuifolia*	7.5%						$8.0000	$80.00
Heart-Leaved Aster	*Aster novi-belgii*	7.5%	140000	2,240,000	$60.00	$960.00	$72.00	$0.0017	$0.74
Striped Cream Violet	*Viola stricta*	7.5%	9000	144,000	$50.00	$800.00	$60.00	$0.0014	$0.62
Switch Grass	*Panicum virgatum*	70%	16,250	259,000	$50.00	$70.00	$49.00	$0.0011	$0.17
									$81.77

Common Name	Species	% weight per lb/acre	Seed # per ounce	Seed # per lb	Cost per ounce of seed	Cost per lb of seed	Cost per acre of seed	Cost per square ft of seed	Cost for Area 4
Phlox	*Phlox maculata*	20%	26,000	416,000	$80.00	$1,280.00	$256.00	$0.0059	$3.50
Marsh Marigold	*Caltha palustris*	20%	26,000	416,000	$80.00	$1,280.00	$256.00	$0.0059	$3.50
Bluewood Sedge	*Carex stricta*	60%	9,000	144,000	$50.00	$800.00	$480.00	$0.0110	$8.56
									$13.55

Common Name	Species	% weight per lb/acre	Seed # per ounce	Seed # per lb	Cost per ounce of seed	Cost per lb of seed	Cost per acre of seed	Cost per square ft of seed	Cost for Area 5
Marsh Marigold	*Caltha palustris*	15%	26,000	416,000	$80.00	$1,280.00	$192.00	$0.0044	$2.65
Cardinal Flower	*Lobelia cardinalis*	15%	400,000	6,400,000	$50.00	$800.00	$120.00	$0.0028	$1.66
American Dog Violet	*Viola conspersa*	15%	9,000	144,000	$50.00	$800.00	$120.00	$0.0028	$1.66
Broomsedge	*Andropogon virginicus*	60%	15,625	250,000	$8.00	$128.00	$76.80	$0.0018	$1.06
									$7.03

Common Name	Species	% weight per lb/acre	Seed # per ounce	Seed # per lb	Cost per ounce of seed	Cost per lb of seed	Cost per acre of seed	Cost per square ft of seed	Cost for Area 6
Green Coneflower	*Rudbedia lacinata*	7.5%	8,000	128,000	$20.00	$320.00	$24.00	$0.0006	$0.28
Hedge Nettle	*Stachys tenuifolia*	7.5%						$8.0000	$80.00
Heart-Leaved Aster	*Aster novi-belgii*	7.5%	140,000	2,240,000	$60.00	$960.00	$72.00	$0.0017	$0.84
Striped Cream Violet	*Viola stricta*	7.5%	9,000	144,000	$50.00	$800.00	$60.00	$0.0014	$0.70
Switch Grass	*Panicum virgatum*	70%	16,250	259,000	$50.00	$70.00	$49.00	$0.0011	$0.57
									$82.39

PLANTING AND BIRDSCAPE SHIFTS

The Baltimore Ecosystem Study (BES) defines the existing birdscape of the Oliver neighborhood as "inner city" [2]. Species rely on food and nesting habitats provided by vegetation in vacancies, and typically shelter over winter. By incorporating designed vegetation into vacant lots, an entirely new spectrum of birdscape can be established, ushering in species that utilize Balitmore as a stopping point along the North Atlantic Flyway. While such a shift will not happen instantaneously, the incorporation of plants species like Indian Mustard can provide ecosystem services such as phytomediation of lead before colonizing species are planted. The birdscape becomes a space of shifting plant and bird species, all-the-while providing ecosystem amenities like open space to residents.

FROM VACANCY TO AMENITY

Gabion seating walls provide an area for bus users to rest while they wait at the 019 stop along E. Preston Street. Nearby sloped lawns offer areas to lounge while swale plantings retain and filter stormwater from the adjacent rowhome. The use of recycled brick aggregate in gabions and along pathways remind users of the houses that once occupied this landscape

THE THEATER AND EVENT LAWN

The culmination of recycled brick, sloping landforms, and seasonal plantings yield a landscape where nearby residents can relax, gardens, and gather. The theater offers seating for community concerts and movie nights while the event lawn provides a staging area for such events to occur.

REFERENCES

[1] Groffman, P.M., D.J. Bain, L.E. Band, K. T. Belt, G.S. Brush, J.M. Grove, R. V. Pouyat, I.C. Yesilonis and W. C. Zipperer. 2003. Down by the riverside: Urban riparian ecology. Frontiers in Ecology and Environment 6:315-321.

[2] Nilon, C. H., P.S. Warren, and J. Wolf. 2009. Baltimore Birdscape Study: Identifying habitat and land-Cover variables for an urban bird-monitoring project. Urban Habitats 6. http://www.urbanhabitats.org/

1.5 acres