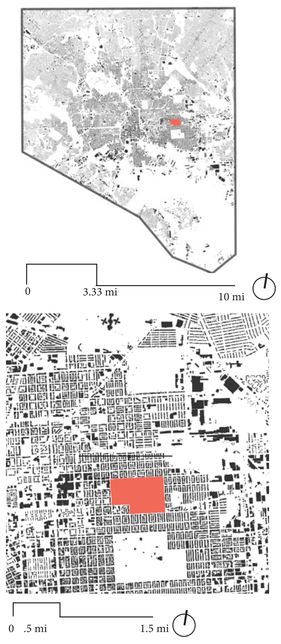
fleX

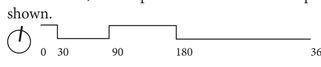
x creating a modular typology.

Jake McCash
LArch 414
4/18/2017

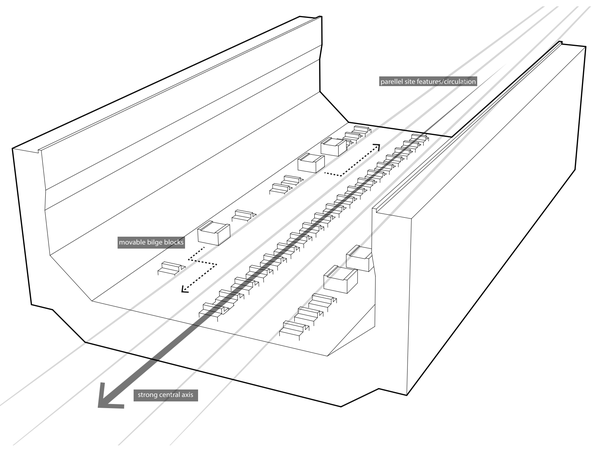
PLANNING SCALE

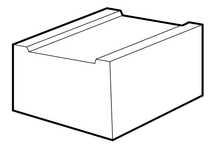


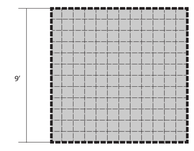
At the planning scale, the idea of adaptability and movement (taken from the concept of floating dry docks) informs the way my design looks and behaves over time. Currently, the site sits on the McElderry park/ Care neighborhood border, but based on public interest and the needs of individual sites, can populate other vacant lots. In blue, a few options for Phase II development are shown.



CONCEPT



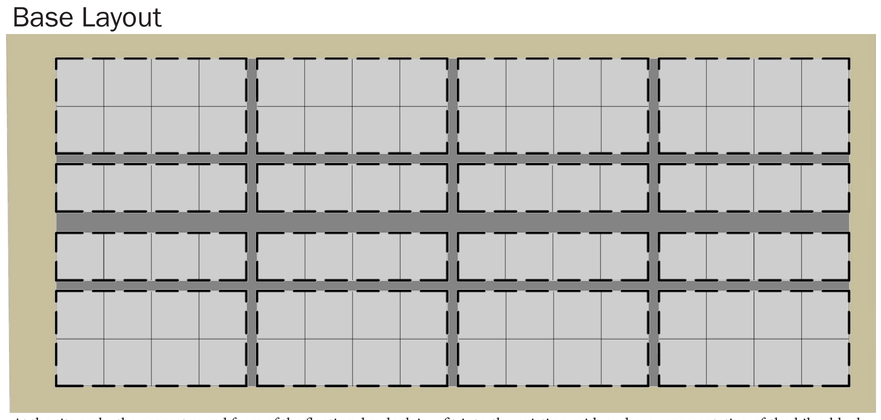




Individual modules should be rectilinear, blocky, with strong linear elements and a central axis if possible, to imitate

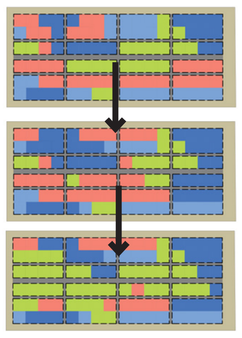
The project concept relates to a key industrial tool on which Baltimore developed: floating dry docks. These docks function in the way canal locks do, raising and lowering water level inside a confined space to change the elevation boats are floating. Floating dry docks are mobile and have a high amount of adaptability, and are able to go where a problem is located in order to solve it. This concept utilizes the high amount of vacancy in eastern Baltimore and allows the design to be truly community-driven, because communities, similar to port masters, can reconfigure the space to their needs.

Base Layout



At the site scale, the geometry and form of the floating dry dock is reflected to create a legible and informed space. The central axis and secondary paths provide circulation while representing the central channel and alters of a dry dock.. The modules themselves fit into the existing grid, and are representative of the bilge blocks, pieces of stone, reinforced concrete, or metal used to support the ship while in port.

Modular Movement



Adaptability and resilience, important values for the Baltimore Ecosystem Study, are also central to my design. Different land uses can change based on the on-site needs, reflecting the way bilge blocks move based on the needs of the ship on floating dry docks. A diagrammatic view of this process can be viewed above.

FOUR SCENARIOS

Agriculturally Intensive

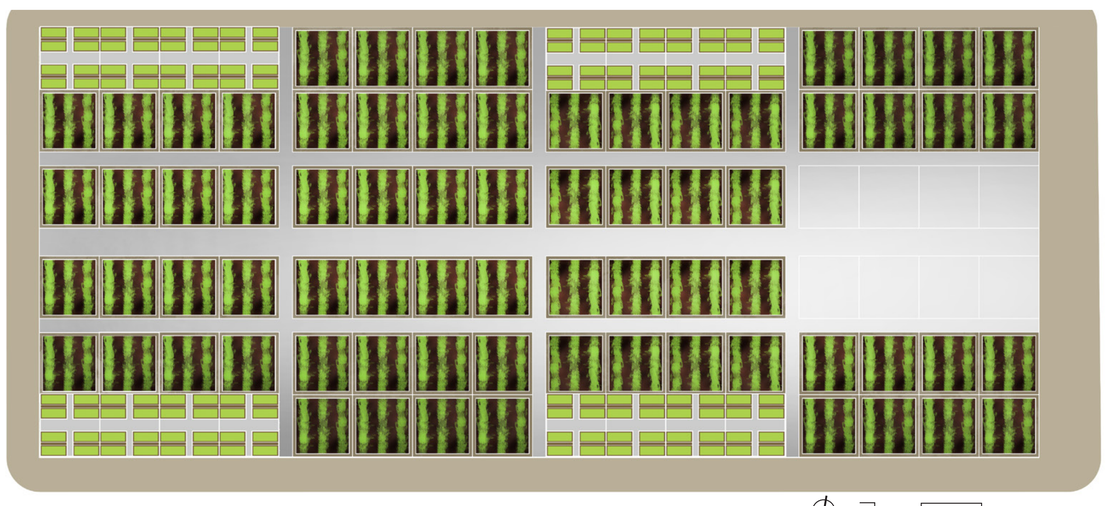
+ 0 TREES

+ 0 SQUARE FEET OF CANOPY

+ 3376 POUNDS OF FOOD PRODUCED PER SEASON

+ 0 LINEAR FEET OF SEATING

- 13% PERMEABILITY



Shade Intensive

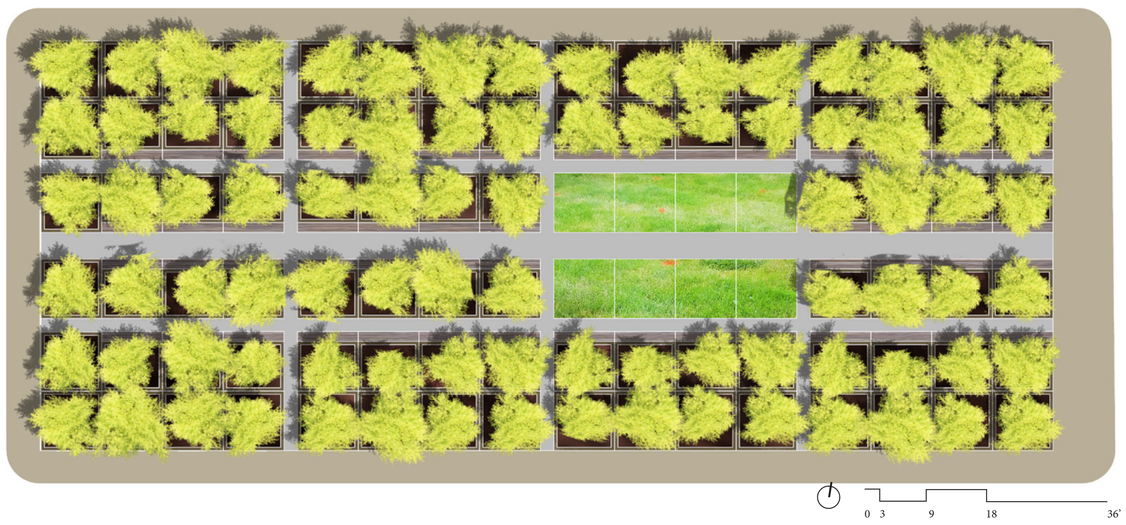
+ 88 TREES

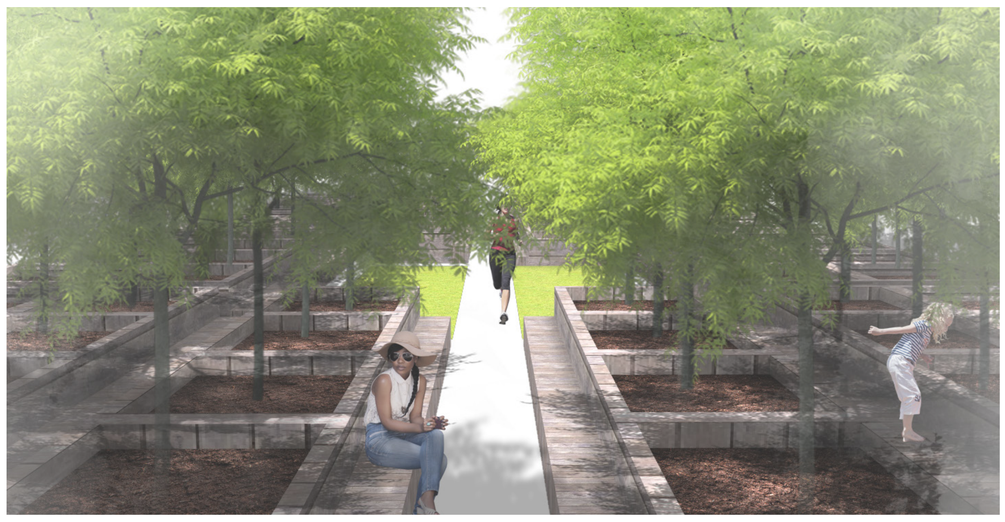
+ 5280 SQUARE FEET OF CANOPY

+ 0 POUNDS OF FOOD PRODUCED PER SEASON

+ 504 LINEAR FEET OF SEATING

- 27% PERMEABILITY





Socially Intensive

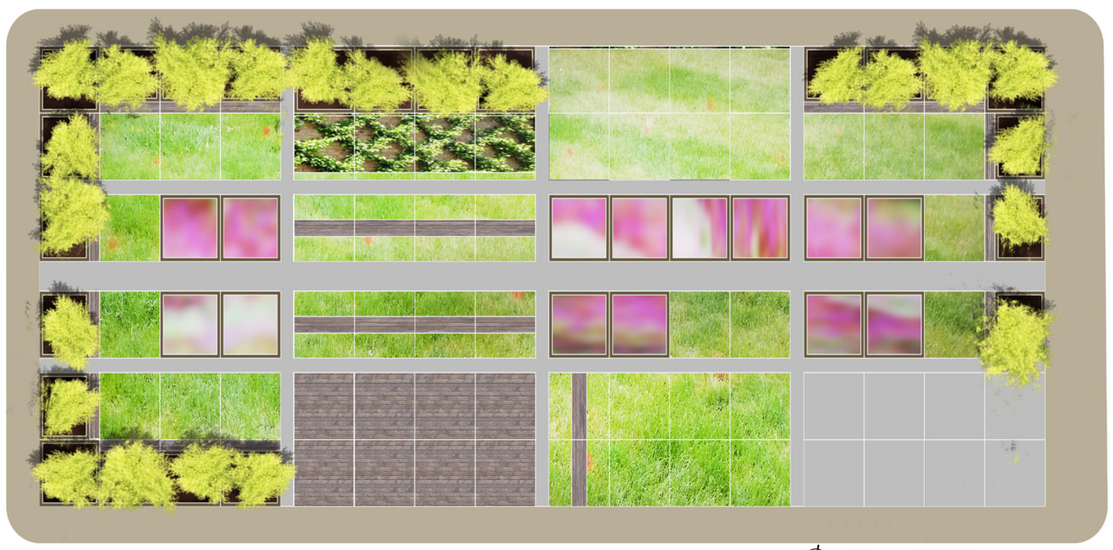
+ 23 TREES

+ 1380 SQUARE FEET OF CANOPY

+ 0 POUNDS OF FOOD PRODUCED PER SEASON

+ 234 LINEAR FEET OF SEATING

- 9% PERMEABILITY



Composite

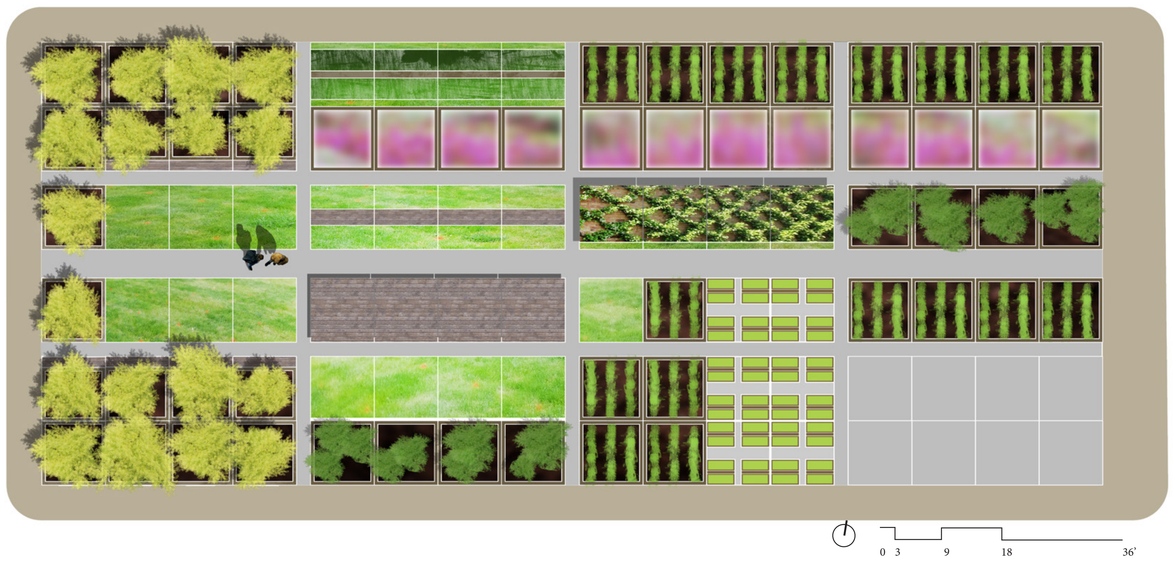
+ 18 TREES

+ 1080 SQUARE FEET OF CANOPY

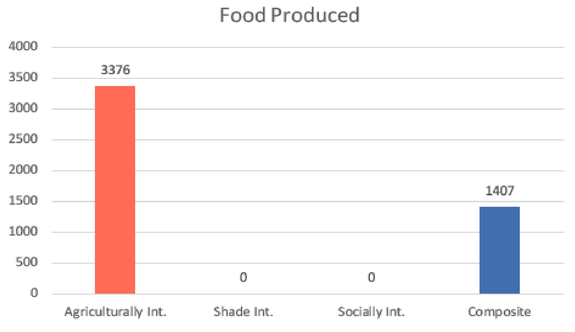
+ 1407 POUNDS OF FOOD PRODUCED PER SEASON

+ 180 LINEAR FEET OF SEATING

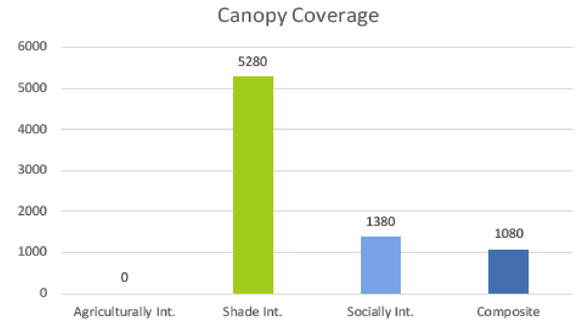
- 15% PERMEABILITY



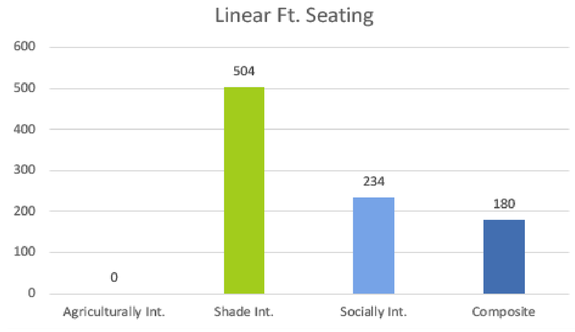
Metrics



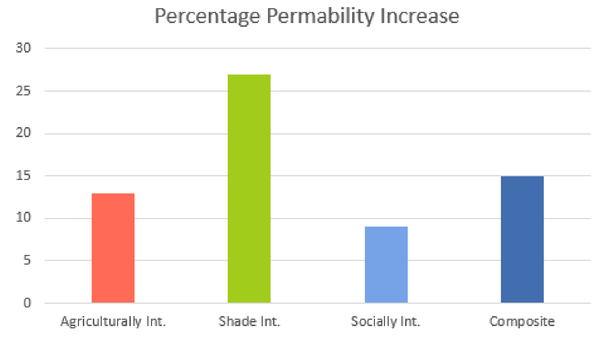
The first configuration, agriculturally intensive Design, has an extremely high food production at 3,376 pounds of food being produced annually. The composite has about 40 percent of this.



The Shade Intensive Design has 5,280 square feet of canopy cover, while the Socially Intensive and Composite Designs have about 20 percent of this at 1380 and 1080 square feet respectably.

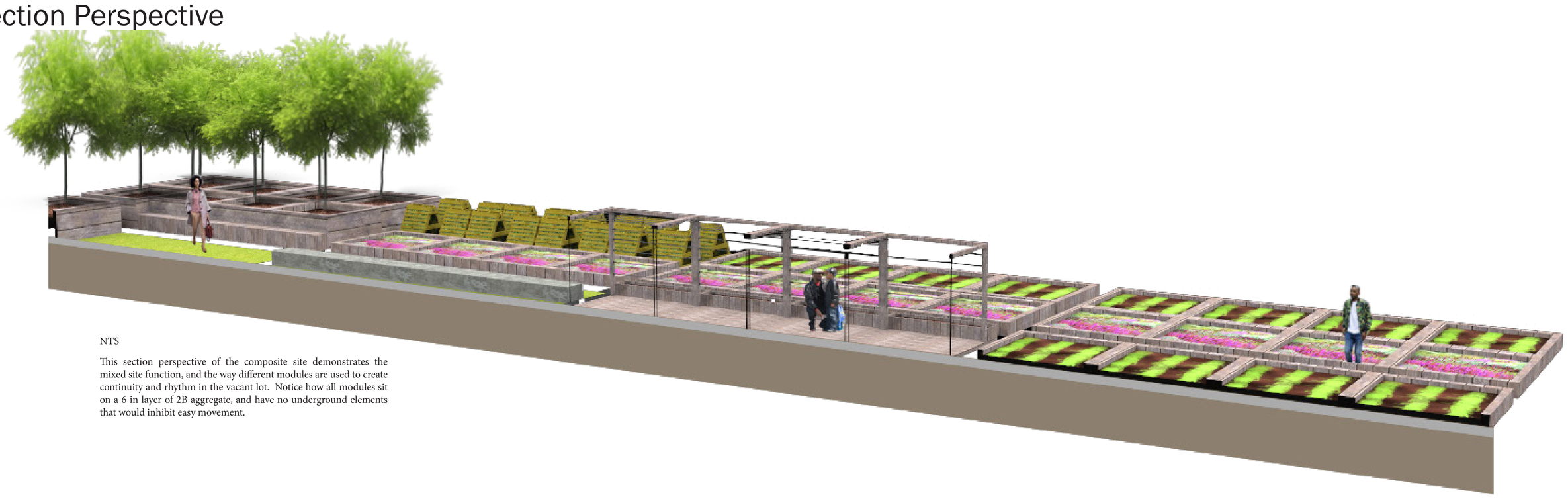


Interestingly, while the Socially Intensive Design was intended to have the most seating, the combined seating/shade module, the Shade Intensive Design had the most seating at 504 linear feet. The Socially Intensive and Composite Designs have 234 and 180 square feet respectably.



Interestingly, while the Socially Intensive Design was intended to have the most seating, the combined seating/shade module, the Shade Intensive Design had the most seating at 504 linear feet. The Socially Intensive and Composite Designs have 234 and 180 square feet respectably.

Section Perspective



NTS

This section perspective of the composite site demonstrates the mixed site function, and the way different modules are used to create continuity and rhythm in the vacant lot. Notice how all modules sit on a 6 in layer of 2B aggregate, and have no underground elements that would inhibit easy movement.

ALTERNATIVE SITE

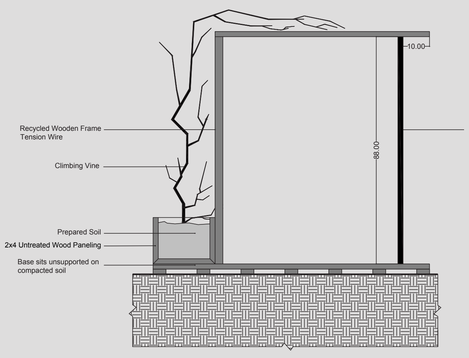
Plan

Perspective

MODULES

**Prices are all based on numbers and modifiers sourced from RSMeans 2015

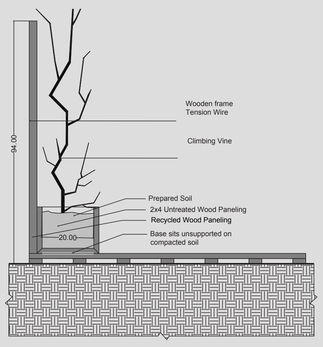
Overhead Trellis



This trellis provides screening and an overhead plane for shade. Even with its support struts, this module is extremely mobile and can be moved or rotated at will

CONSTRUCTION COST: $195

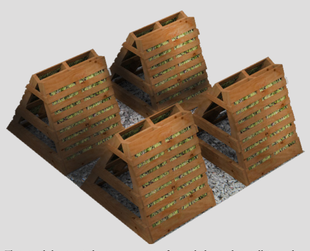
Vertical Trellis

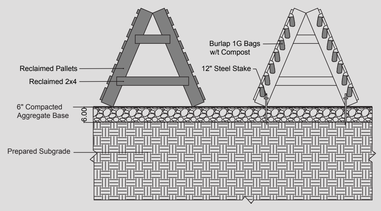


This basic trellis module can be used for agricultural purposes, but is mainly used for horticultural purposes. Flowering vines like Clematis and Wisteria can be planted in movable pots to make moving these trellises around easier.

CONSTRUCTION COST: $155

Pallet Green Wall

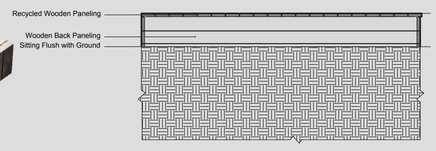




This module, created using a series of recycled wooden pallets and rubber bags to contain soil, is a thrifty and efficient way to add verticallity to agriculturally intense areas and grow herbs.

CONSTRUCTION COST: $52

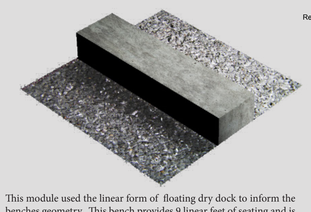
Stage

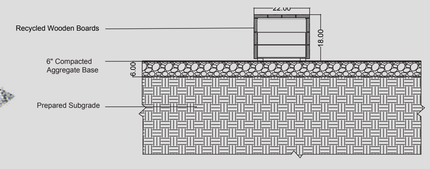


This module, or rather a lack thereof, is the most basic variety. The basic ground covers are turf, used for temperature reduction and social gathering, while gravel is used for programs such as food truck parking. Both options are permeable.

CONSTRUCTION COST: $128

Bench

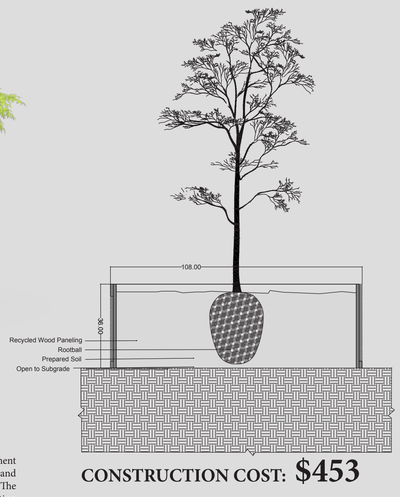




This module used the linear form of floating dry dock to inform the benches geometry. This bench provides 9 linear feet of seating and is accessible form all sides.

CONSTRUCTION COST: $55

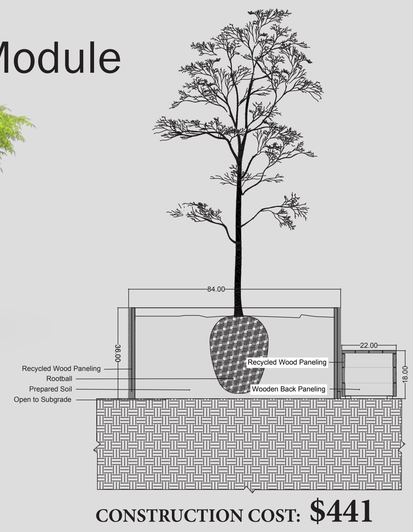
Shade Module



This module, with 234 cubic feet of soil, this module is more permanent than others and houses a small tree (primarily Honey Locusts and London Plane-trees for there hardiness in urban environments). The interior is lined with a geo-fabric mesh to prevent root penetration while allowing water to drain.

CONSTRUCTION COST: $453

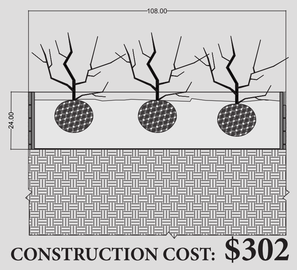
Shade/Seating Module



This module, with 202.5 cubic feet of soil and a built in bench sacrifices a small amount of rooting space for 9 linear feet of seating space.

CONSTRUCTION COST: $441

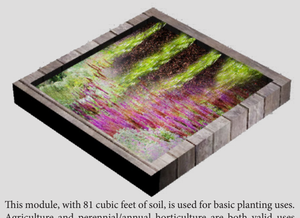
Shrub Production

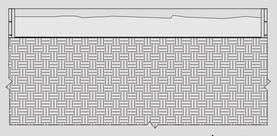


This module, similar to the basic agricultural module, differs with the amount of soil (162 versus 81 cubic feet). While more soil makes this module less mobile, it increases the amount of soil for things like shrubs like blackberries and blueberries.

CONSTRUCTION COST: $302

Basic Agricultural Production

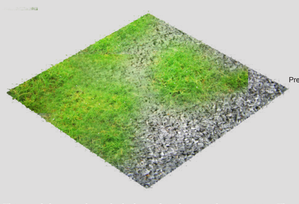


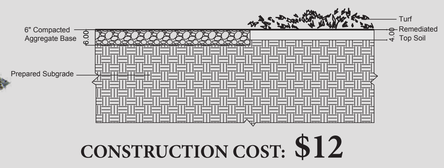


This module, with 81 cubic feet of soil, is used for basic planting uses. Agriculture and perennial/annual horticulture are both valid uses and can be interchanged based on the needs of the space.

CONSTRUCTION COST: $151

Ground plane Module





This module, or rather a lack thereof, is the most basic variety. The basic ground covers are turf, used for temperature reduction and social gathering, while gravel is used for programs such as food truck parking. Both options are permeable.

CONSTRUCTION COST: $12

PLANT SELECTION

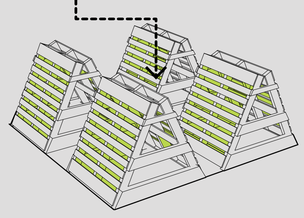
Rosmary
Rosmarinus officinalis

Coriander
Coriandrum sativum

Parsely
Petroselinum crispum

Thyme
Thymus vulgaris

Chives
Allium schoenoprasum

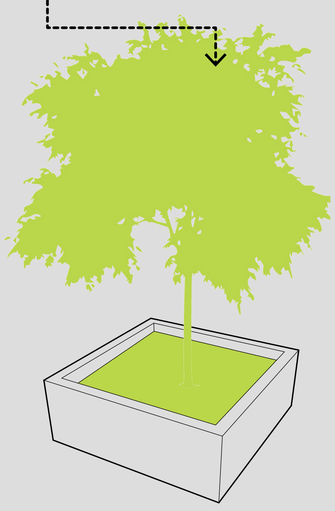


This module focuses less on production and more on added verticallity and interest to agricultural areas. Using reused pallets, this module can produce herbs such as Rosemary and Thyme at a low cost.

Thornless Honeysuckle
Gleditsia triacanthos inermis

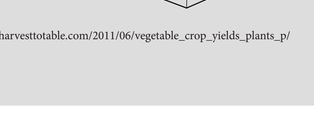
European Linden
Tilia europaea

American Hornbeam
Carpinus caroliniana



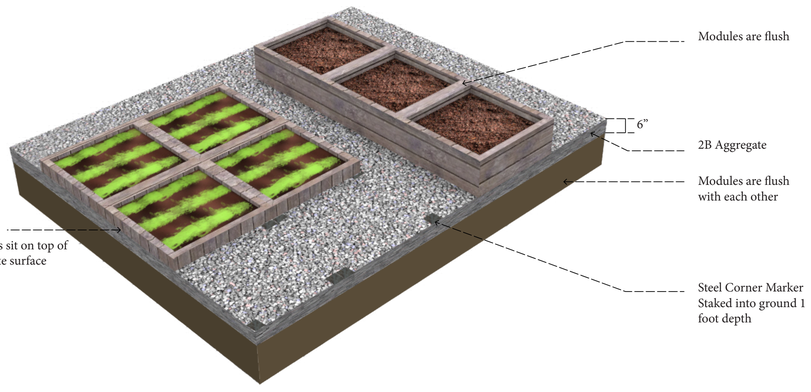
Tree species are should be adapted to urban conditions at Zone 4. These three species are all on the Tree Baltimore list and are approved by the City as good trees for urban shade production.

Green Beans *Phaseolus vulgaris*	Avg Yield per 9x9 Unit: **13 Pounds**		**Garlic** *Allium sativum*	Avg Yield per 9x9 Unit: **60-180 Bulbs**	
Beets *Beta vulgaris*	Avg Yield per 9x9 Unit: **77 Pounds**		**Melon** *Cucumis melo*	Avg Yield per 9x9 Unit: **18-27 Melons**	
Brocolli *Brassica oleracea*	Avg Yield per 9x9 Unit: **15 Pounds**		**Okra** *Abelmoschus esculentus*	Avg Yield per 9x9 Unit: **22 Pounds**	
Carrots *Daucus carota*	Avg Yield per 9x9 Unit: **27 Pounds**		**Potatoes** *Solanum tuberosum*	Avg Yield per 9x9 Unit: **45 Pounds**	
Collard Greens *Brassica oleracea*	Avg Yield per 9x9 Unit: **18 Pounds**		**Zucchini Squash** *Cucurbita pepo*	Avg Yield per 9x9 Unit: **90 Pounds**	
Eggplant *Solanum melongena*	Avg Yield per 9x9 Unit: **48 Pounds**		**Watermelon** *Phaseolus vulgaris*	Avg Yield per 9x9 Unit: **48 Pounds**	



**Yields are all based on numbers from http://www.harvesttotable.com/2011/06/vegetable_crop_yields_plants_p/

MODULAR CONFIGURATION



NTS

TEMPORAL FLUX

0 Years

NTS

This series of perspectives shows the way these modules can move overtime. The first shows a standard diverse set of modules.

2 Years

NTS

In this module, due to a higher need for community gathering space or a need for the trellis module elsewhere, the trellis module has been moved to an alternate location.

5 Years

NTS

In this module, seating was added, and agricultural uses replaced a few other modules. This shows how, based on the localized needs of the users, the configuration can vary widely from season to season.