GROWTH CENTER:
McELDERRY PARK

A Study Street Tree Implementation Through Urban Nurseries

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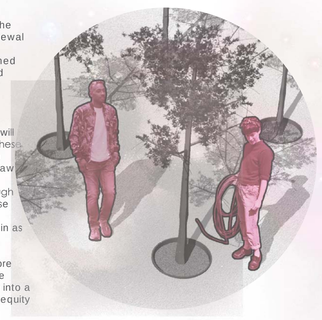
CONCEPT

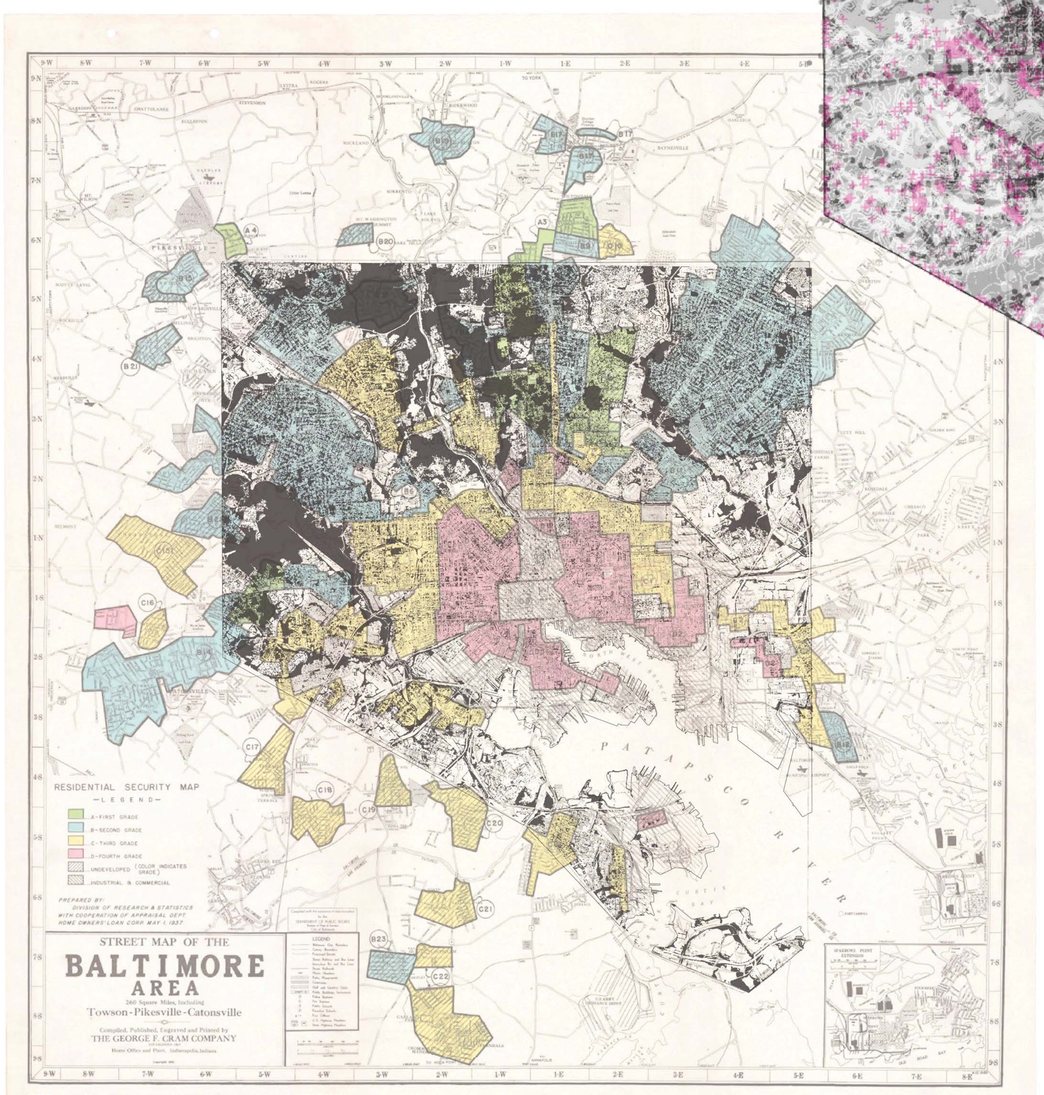
Taking inspiration from the ever-changing cycles of the moon, this project will inspire rebirth, growth, and renewal in the historically disadvantaged neighborhood of McElderry Park. Community members will be welcomed to take ownership of under-valued and under-utilized areas right beside their own homes to reinvigorate their neighborhood and the city through green entrepreneurship in the realm of urban nurseries.

As production cycles move and change, the space will reflect these shifts through modular, movable units. These units and the trees themselves can be rearranged to meet the community's changing needs as well as draw attention to the ecological processes at play. These spatial movements will reflect phases in growth through interpretive connections to phases of the moon. These phases relate in spatial composition with a sense of wholeness as well as the moment that the trees exist in as part of their life cycle on site.

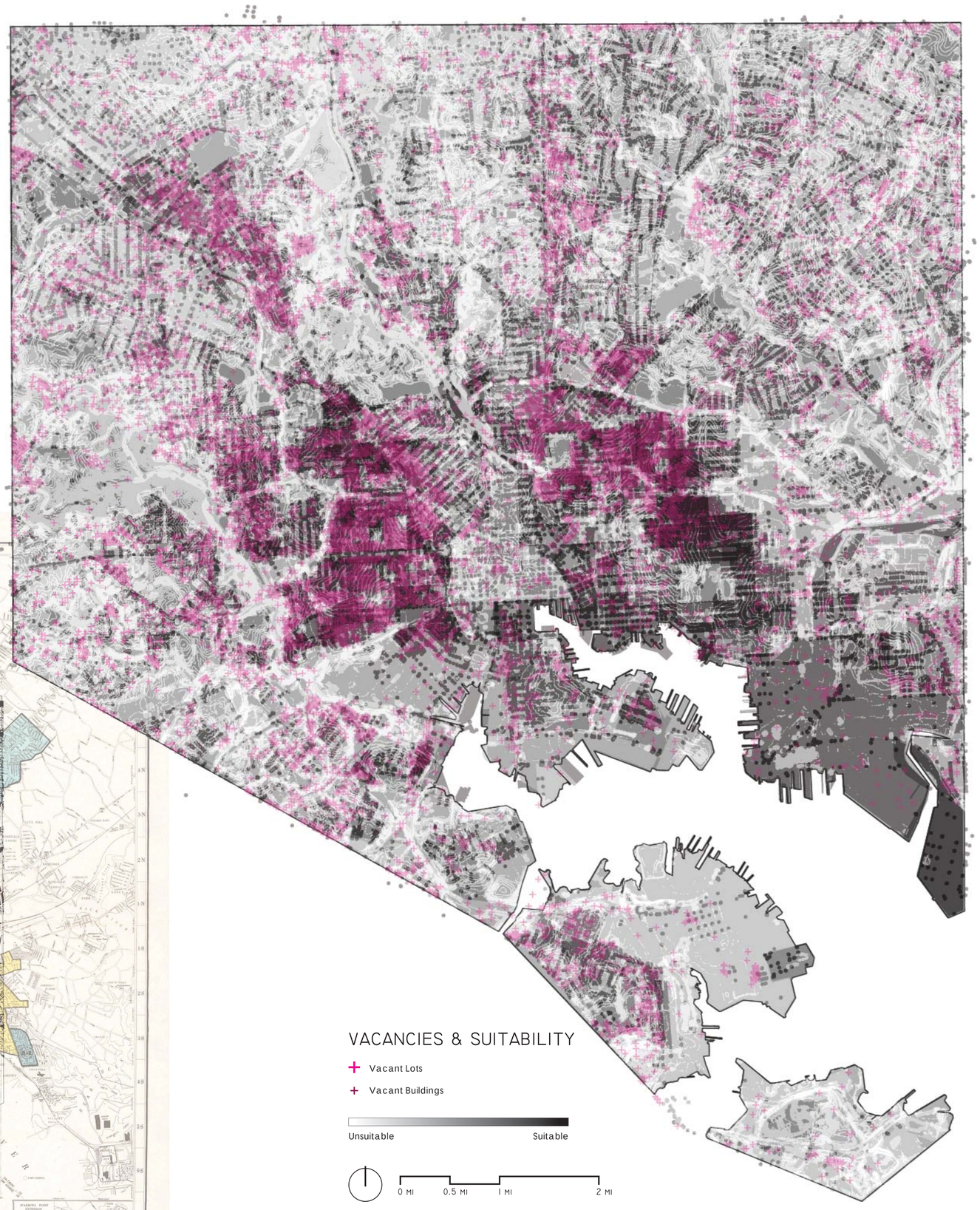
These ideas will then be able to permiate the Baltimore cityscape. As matured trees are transplanted into the surrounding streetscape, the city will gradually move into a new cycle - setting new hallmarks for environmental equity and socially responsive urban design.



1937 REDLINING & 2016 CANOPY COVER



1937 Redlining Map image: https://jscholarship.library.jhu.edu/handle/1774.2/32621

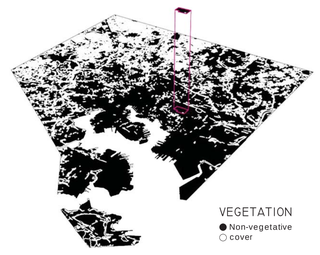


VACANCIES & SUITABILITY

- Vacant Lots
- Vacant Buildings

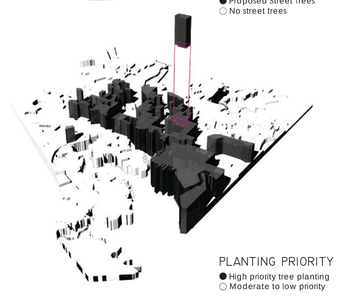
Unsuitable — Suitable

0 MI 0.5 MI 1 MI 2 MI

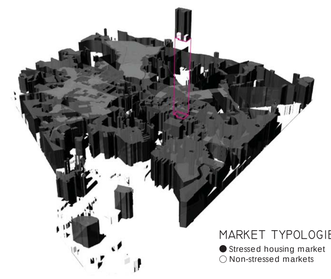


VEGETATION
- Non-vegetative
- cover

STREET TREE GOALS
- Proposed Street Trees
- No street trees

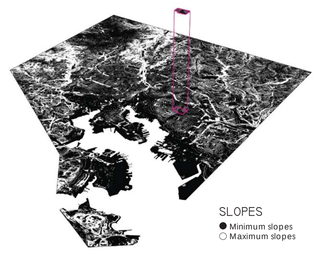


PLANTING PRIORITY
- High priority tree planting
- Moderate to low priority



MARKET TYPOLOGIES
- Stressed housing market
- Non-stressed markets

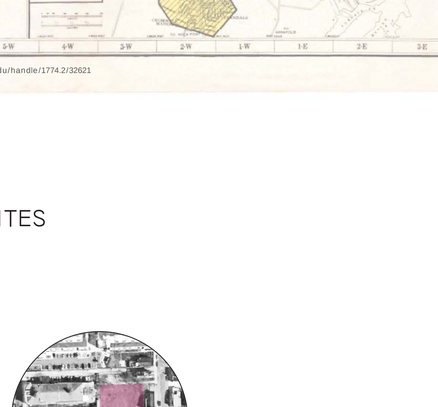
ENTERPRISE ZONES
- Non-enterprise zones
- Enterprise zones



SLOPES
- Minimum slopes
- Maximum slopes

PROPOSED NURSERY SITES

1 **Coppin Heights-Ash-Co-E.** 1629 N Bentalou St
2 **Parkview Woodbrook** 2322 Whittier Ave
3 **Mondawmen** 2000-2098 Herbert St
4 **Sandtown-Winchester** Pauline Fauntleroy Park
5 **Broadway East** 1801-1899 N Castle St
6 **Coldstream Homestead** 1632 Abbotston St
7 **C.A.R.E.** 400-498 N Madeira St
8 **Sandtown-Winchester** 1718 N Carey St
9 **Druid Heights** 2323 Division St
10 **East Baltimore Midway** 1900-1998 Hope St
11 **Johnston Square** 1326 Wilcox St
12 **Biddle Street** 1105 N Bradford St
13 **Broadway East** 1501-1509 N Port St
14 **Franklin Square** 2-98 N Vincent St
15 **Carrollton Ridge** Catherine Street Park
16 **Druid Heights** 2217 Etting St
17 **Coldstream Homestead** 1709 Gorsuch Ave
18 **Johnston Square** 1300-1398 Hillman St
19 **Broadway East** 1618 N Montford Ave
20 **Oliver** 1618 Lansing Ave
21 **Berea** 1301-1399 N Rose St
22 **Canton** 3501 Fait Ave
23 **Broadway East** 2306 E Biddle St
24 **Poppleton** 925 W Fairmount Ave
25 **Pigtown** 1214 Nanticoke St
26 **Easterwood** 2007 Baker St
27 **Harlem Park** 823 N Mount St
28 **Oliver** 1813-1899 N Bethel St
29 **Madison-Eastend** 2820-2898 E Eager St
30 **Carrollton Ridge** 2128 W Pratt St
31 **McElderry Park** 405 N Bradford St
32 **McElderry Park** 560-698 N Port St



SITE LOCATIONS

Proposed Sites
Neighborhood Bounds
Parcels

0 MI 1 MI 2 MI 4 MI

STREET TREE BENEFITS

Although local perceptions regarding street trees tend to lean toward the negative, most of the actual impacts of street trees are highly positive. Street trees have been shown to have quantitative and qualitative impacts in the realms of health, economics, environment, and sustainability. Some of these benefits are as follows:

HEALTH
+ Reduce blood pressure
+ Improve emotional and psychological health
+ Increase recovery time
+ Environmental connection

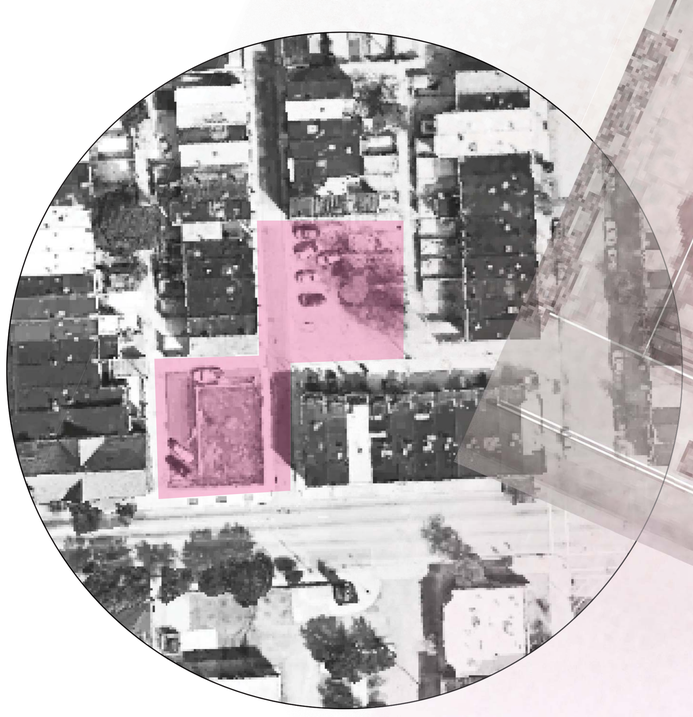
SAFETY & AESTHETICS
+ Increasing pedestrian safety
+ Reducing traffic speeds
+ Increasing community pride
+ Soften and screen street features

ENVIRONMENT
+ Absorption of first 30% of precipitation (leaves)
+ Up to 30% additional precipitation absorption (ground)
+ Lower temperature of 5-15 degrees under canopy
+ Absorb 9 times mroe pollutatnts than more distant trees

ECONOMY
+ Approximately $90,000 of direct returns over the tree's lifetime
+ 20% higher income streams on tree-lined streets
+ 15-35% reduction of household energy bills
+ $15-25,000 increase in home and business value (compared to non-tree streets)
+ Increase lifespan of surrounding paving by 40-60%

By not including street trees in the urban fabric of several areas, their populations are being denied these benefits. As shown in the map "1937 Redlining & 2016 Canopy Cover", neighborhoods that have been historically discriminated against are still experiencing environmental inequalities. If Balimore is able to reinvest in these population's through urban implementations, they may be able to rectify other issues of social injustice.

"22 Benefits of Urban Street Trees." Burden, Dan. 2008.

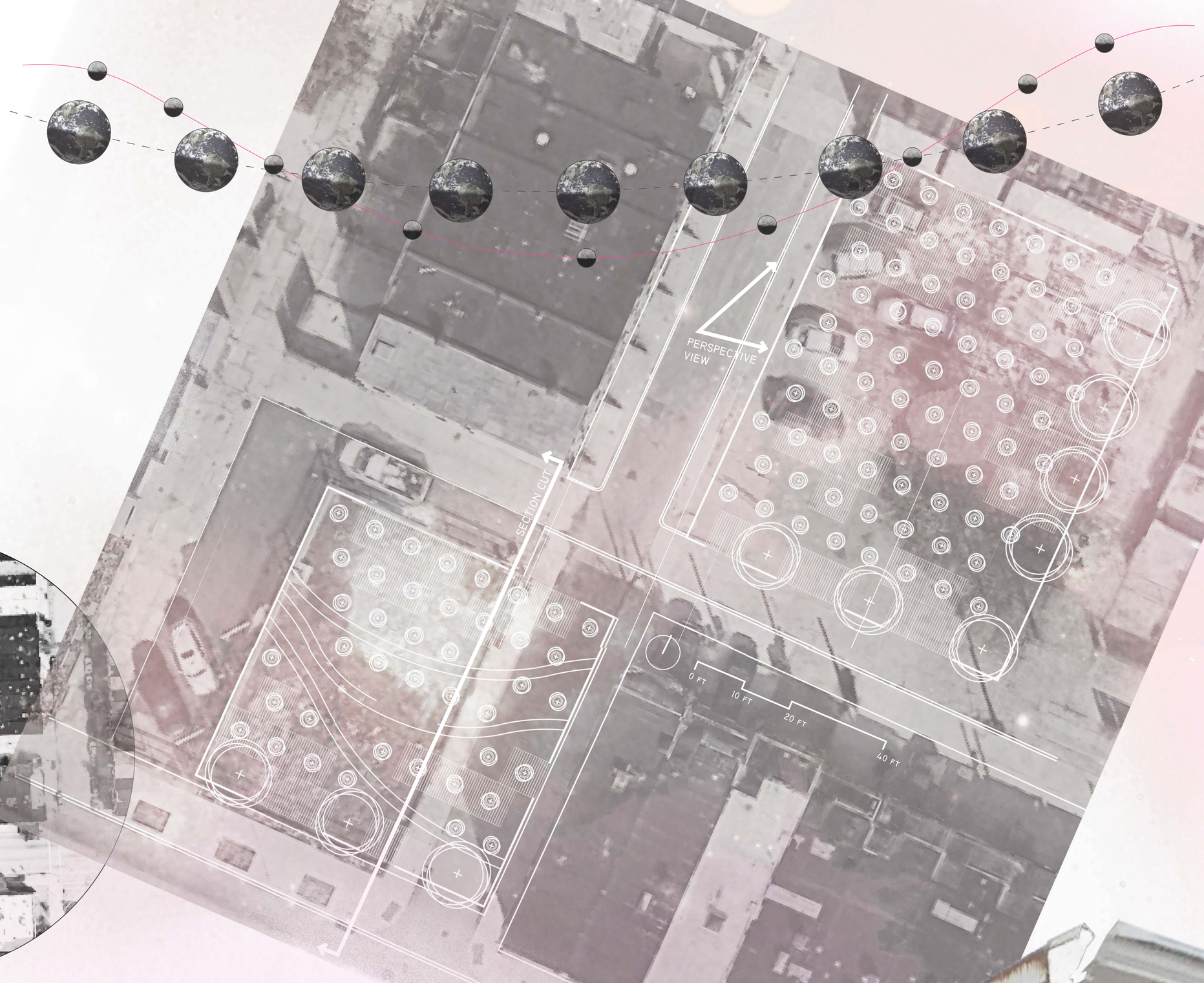


POT-IN-POT NURSERY

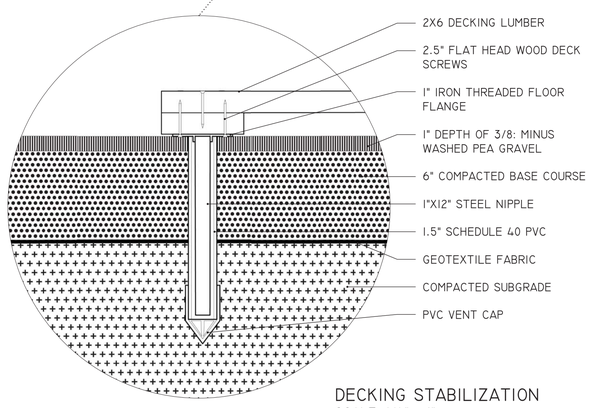
This nursery production method involves permanent in-ground containers, known as socket pots, and mobile removable containers, known as production pots. As shown in the lower image, the socket pots are installed in fixed positions in the ground which allows for permanent organization of the nursery space. The production pots, where the trees are actually grown, are designed to sit within the socket pot, which allows for easy removal. Unlike other nursery systems which must be replaced every season, this system has a lifespan of 10 to 15 years. Thus, reinvestment not needed very frequently. Ultimately, this system has many of the benefits of field production as well as the flexibility of container production.

ECONOMIC RETURNS

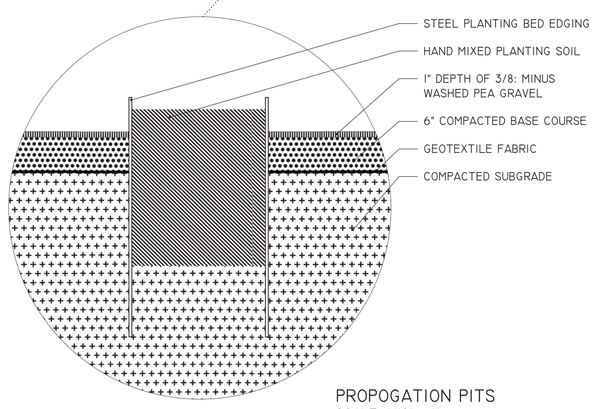
Installation and Materials	$20 / TREE
	113 POT-IN-POTS
Initial Start Up	$2,260
"Shift" (movement) Cost	$20 / TREE
Anual Maintenance	$10 / TREE
Growth Cost	$60
Selling Price	$100 - $150
Profit	$40 - $90



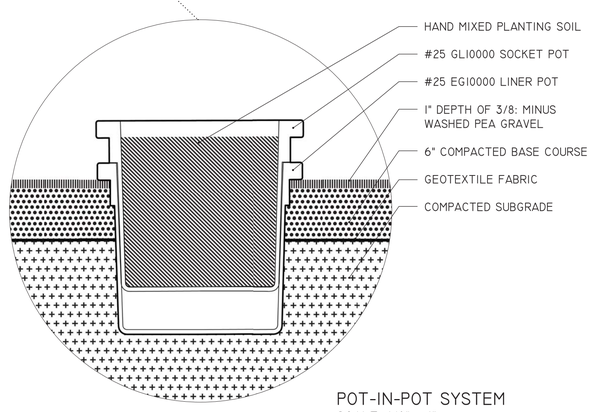
SECTION PERSPECTIVE
SCALE: 1" = 3'-0"



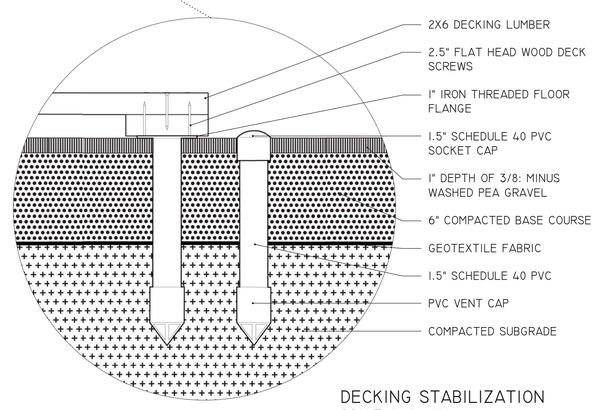
DECKING STABILIZATION
SCALE: 1/4" = 1"



PROPOGATION PITS
SCALE: 1/12" = 1"



POT-IN-POT SYSTEM
SCALE: 1/8" = 1"



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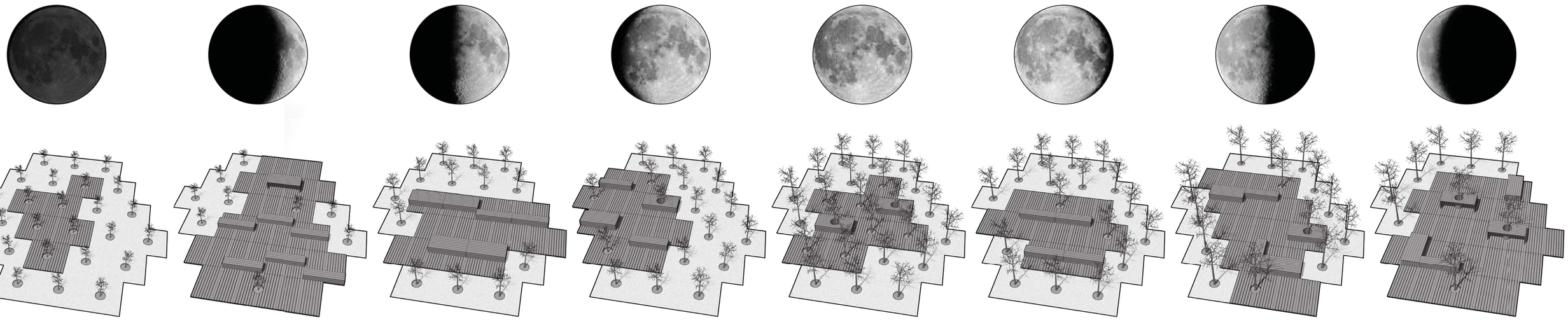


NEW MOON
100% tree fill
Height: > 4 feet

WAXING CRESCENT
30% tree fill
Height: > 4 feet

FIRST QUARTER
50% tree fill
Height: 4 - 6 feet

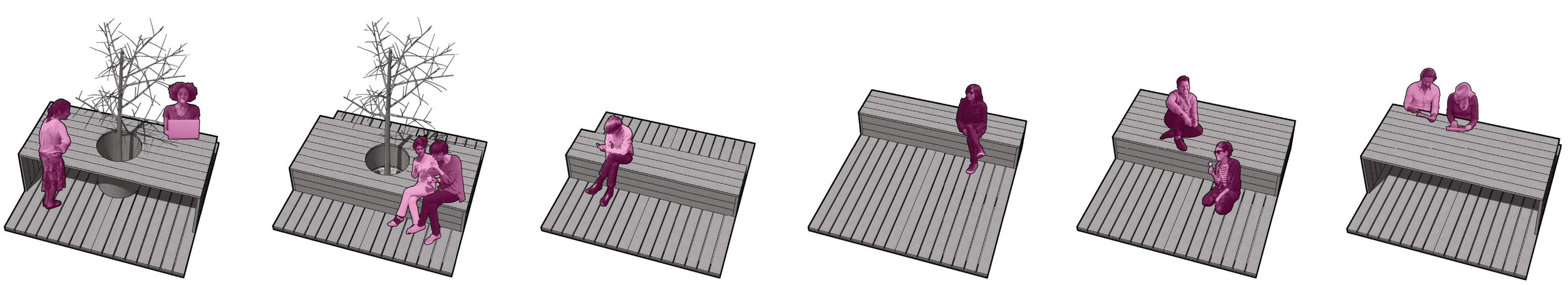
WAXING GIBBOUS
70% tree fill
Height: 4 - 6 feet

FULL MOON
100% tree fill
Height: 6 - 8 feet

WANING GIBBOUS
70% tree fill
Height: 6 - 8 feet

LAST QUARTER
50% tree fill
Height: 8 - 10 feet

WANNING CRESCENT
30% tree fill
Height: 8 - 10 feet



WRAP-AROUND TABLE

WRAP-AROUND 4' BENCH

2' MIDDLE BENCH

2' EDGE BENCH

4' EDGE BENCH

TABLE

MODULAR UNITS

This modular system allows for an adaptive use of the nursery park space. Installed in an in-ground plug system, these units will sit on top of the pea gravel ground cover and allow for a variety of programing opportunities. All materials can be purchased from local hardware stores and construction and installation is designed to require minimal training.

POT-COVER MODULAR UNITS
When socket pots are not filled with production pots, these modular units cover the in-ground socket pots to ensure public safety while also creating spatial programing opportunities. The modular base consists of two 4 by 8 foot decking units that snap together to for a solid 8 by 8 foot piece. These can be layered with small (2 by 8 foot) benches, large (4 by 8 foot) benches, and tables. Tables should be surrounded on all sides by additional decking units to allow for save integration of movable seating.

AROUND-TREE MODULAR UNITS
When socket pots are filled with production pots, decking units can be incorporated around the trees to integrate them into spatial programing. The modular base, like the solid unit, consists of two 4 by 8 decking units that snap together, allowing for them to be installed around the tree. Unlike the solid units, these have a 24 inch hole in the center to accommodate the production pot. These can be layered with large (4 by 8 foot) benches and tables. Like the bases, these furniture units will snap together in the center to allow for installation around existing trees.