

An aerial photograph of a snowy urban plaza at dusk or night. In the foreground, a Canon DSLR camera is mounted on a tripod, its LCD screen displaying the scene being filmed. The plaza is covered in snow, with a few people walking and a person on a bicycle. A modern building with a glass facade and a staircase is visible in the middle ground. The overall atmosphere is cold and urban.

OLIN LABS

In the face of mounting environmental, social and economic challenges across the globe, landscape architecture that is deeply rooted in research is needed now more than ever. With dwindling resources and ever-urbanizing open space, landscape architects are being called on to provide innovative solutions for increasingly complex problems. OLIN has a systematic and historically-grounded research program committed to exploring and analyzing how landscape architecture can positively impact the people and environment of the 21st century..

/evə'looSHən/



a gradual process in which something changes into a different and usually more complex or better form



Bryant Park, 1985-1991



J. Paul Getty Center, 1993-1997



Washington Monument, 2001-2005



Washington Canal Park, 2008-2012

DESIGN and RESEARCH

EDUCATION

CRAFT

ECOLOGY /
ENVIRONMENTS

COLLABORATION
INVESTIGATION
TESTING
SHARING

INNOVATION
TOOLS/PROCESS
MATERIALS/METHODS

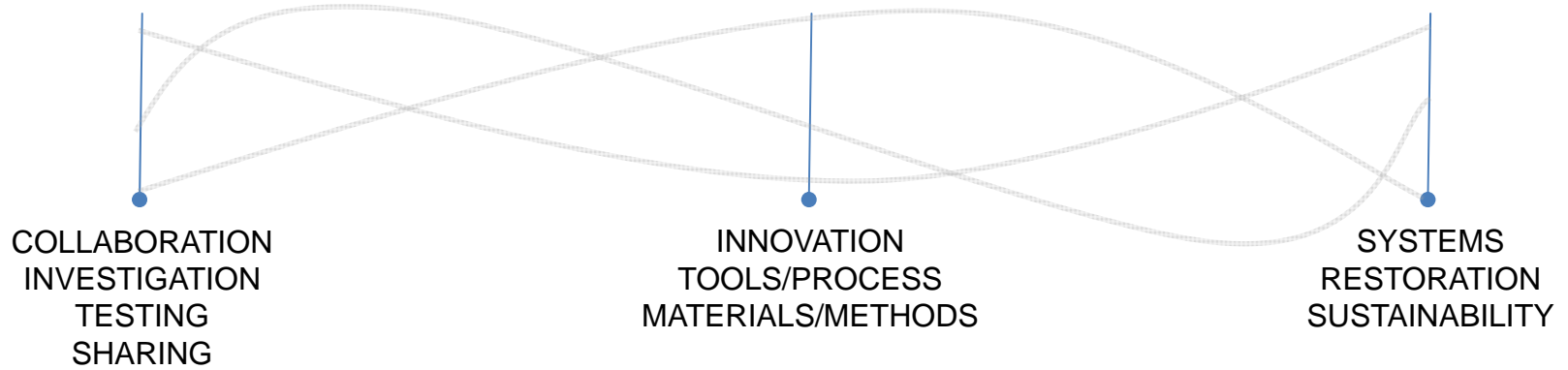
SYSTEMS
RESTORATION
SUSTAINABILITY

DESIGN and RESEARCH

EDUCATION

CRAFT

ECOLOGY /
ENVIRONMENTS



DIRECTORS

RESEARCH

TECHNOLOGY

GREEN
INFRASTRUCTURE

SCALES of RESEARCH

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Page last modified 16:51, 11 Mar 2013 by kblumenthal

[OLIN Knowledge Base](#) > [Sample Room](#) > [Materials](#) > [Woods, Plastics, and Composites](#) > [Wood Species](#) > [Black Locust](#)

Black Locust


Introduction

Black Locust (*Robinia pseudoacacia* L.), sometimes called **Yellow Locust**, is one of the most decay-resistant native woods. It has escaped cultivation and become naturalized throughout eastern North America and parts of the West. It has been successfully established throughout much of the humid section of the United States and in many foreign countries. Although black locust is not an important timber tree in the United States, it is used for a wide variety of products. Because of its hardness and resistance to decay [compare to other species], black locust has been used consistently for fence posts, railroad ties, and shipmast posts.¹

Description

Physical Properties

Avg. Dried Weight	51 lbs/ft ³
Basic Specific Gravity	.66
Hardness	1,700 lby
Rupture Strength	19,400 lby/in ²
Elastic Strength	2,050,000 lby/in ²
Crushing Strength	10,200 lby/in ²
Shrinkage	Radial: 4.6% Tangential: 7.2% Volumetric: 10.2% T/R Ratio: 1.6

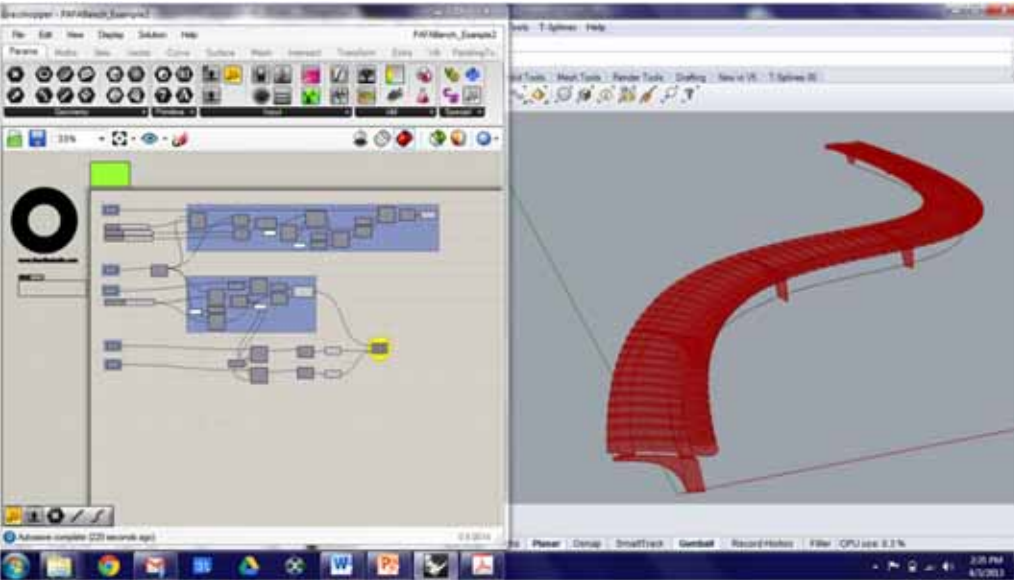


[Edit Item Links](#)

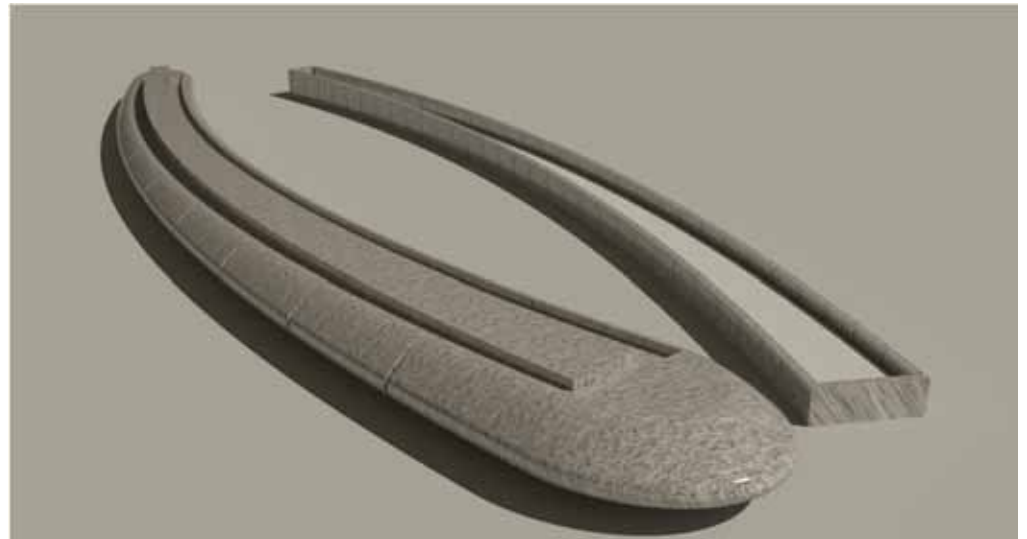
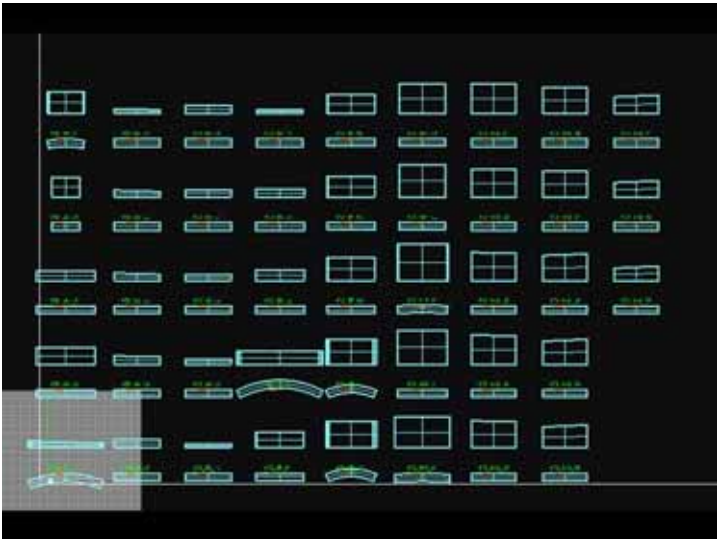
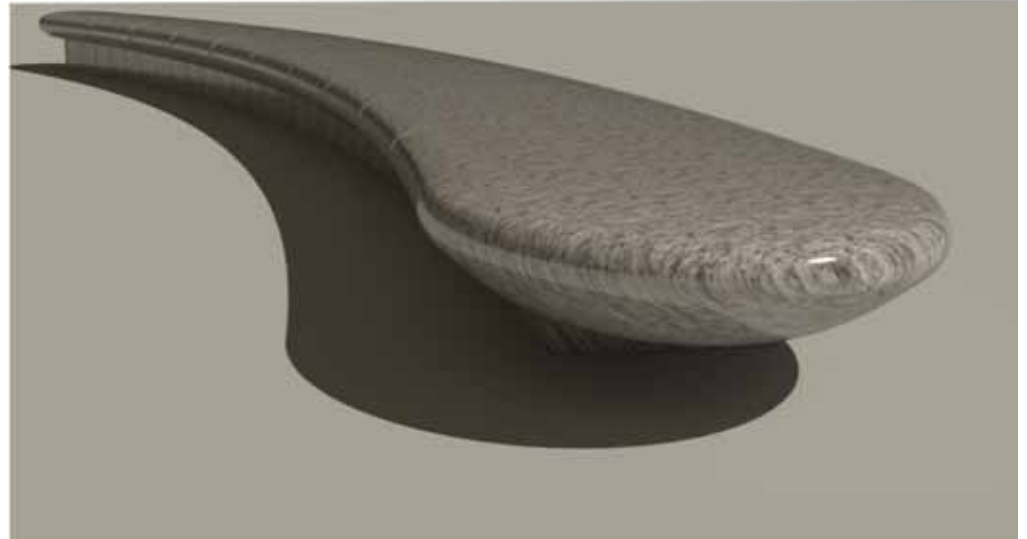
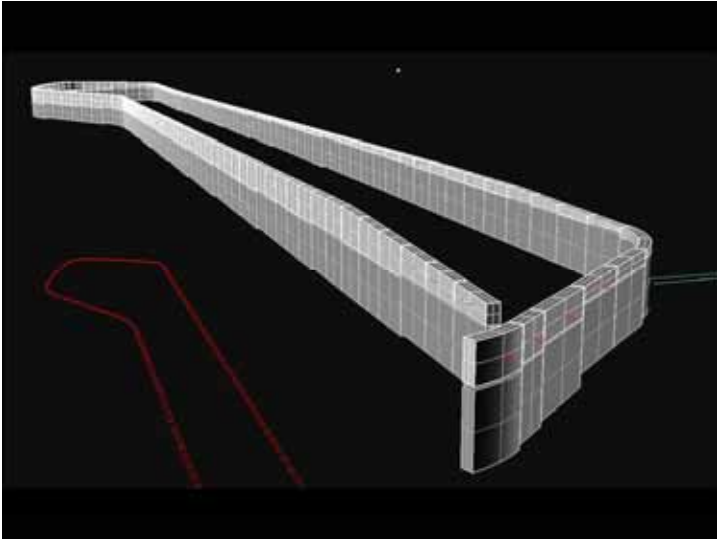
Details

Description: Although black locust is not an important timber tree in the United States, it is used

SCALES of RESEARCH



SCALES of RESEARCH



SCALES of RESEARCH

WORD FREQUENCY: SIMILARITIES (AT LEAST IN AGGREGATE)

REFERENCES TO PEOPLE AND SOCIAL ACTIVITIES (FREQUENCY)



REFERENCES TO CENTRALITY AND URBANITY



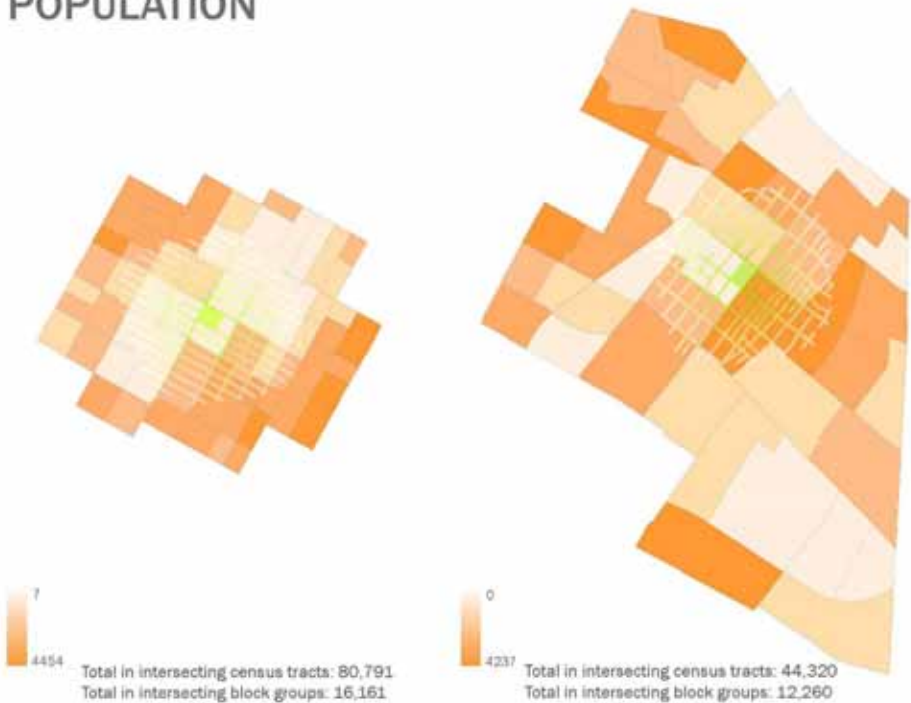
REFERENCES TO EVENTS AND FORMAL PROGRAM (FREQUENCY)



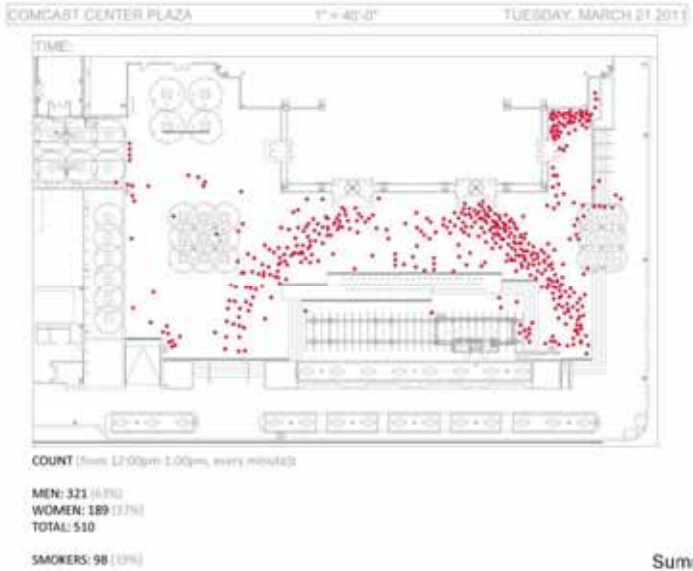
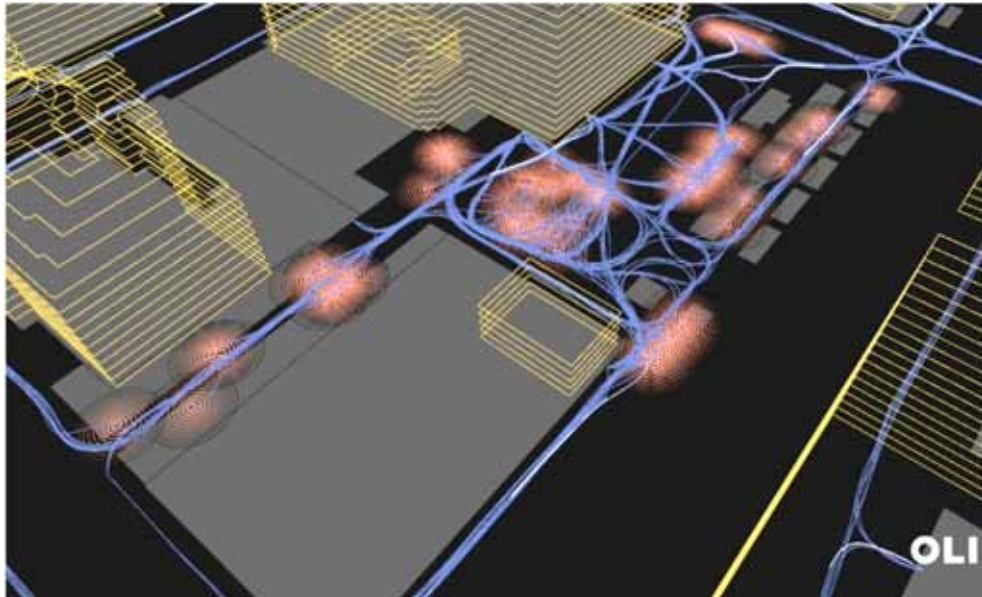
REFERENCES TO INFORMAL ACTIVITIES (FREQUENCY)



POPULATION



SCALES of RESEARCH



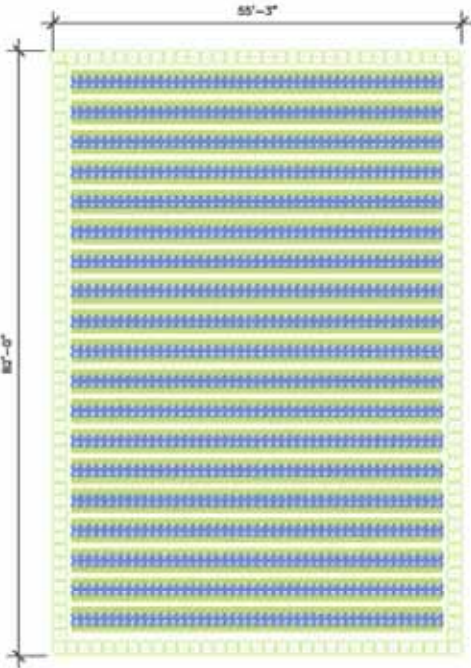
FOCUSED TOPIC EXPLORATION

SCALES of RESEARCH

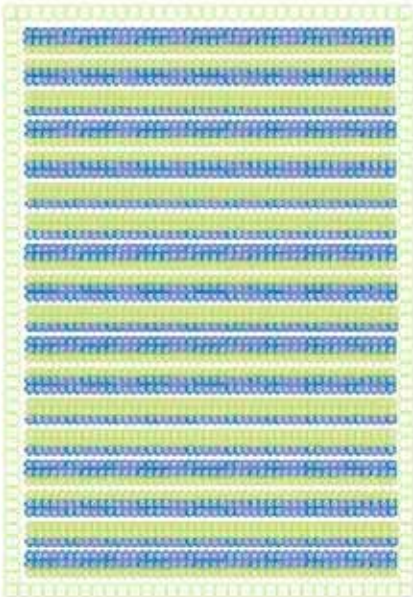


FOCUSED TOPIC EXPLORATION

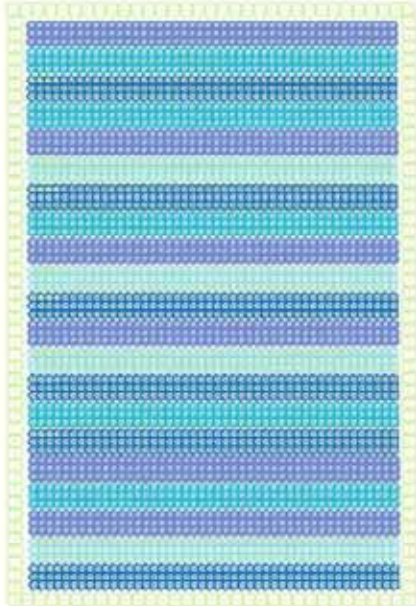
SCALES of RESEARCH



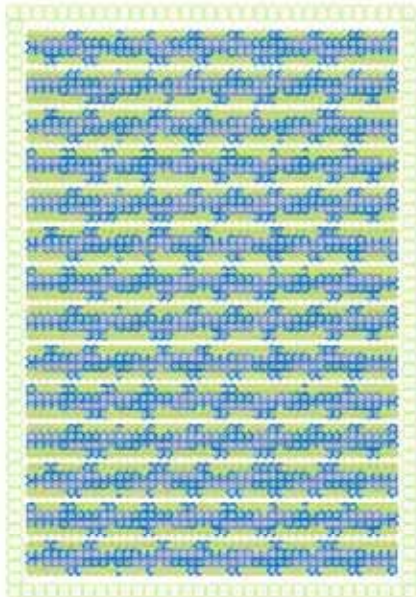
STRATEGY A
3 DIFFERENT PERENNIALS (same color)
LOW FLANKING SPRING BLOOM &
TALL CENTER SUMMER/FALL BLOOM



STRATEGY B
3 DIFFERENT PERENNIALS (same color)
SPRING/SUMMER - SUMMER/FALL BLOOM



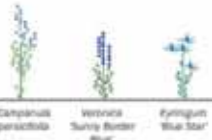
STRATEGY C
4 DIFFERENT PERENNIALS (same color)
OVERLAPPING BLOOM TIMES



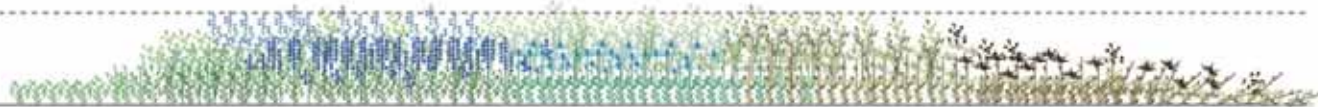
STRATEGY D
4 DIFFERENT PERENNIALS (same color)
SPRING/SUMMER - SUMMER/FALL BLOOM

A M J J A S O N D J F M

6 ft
3 ft



Campanula persicifolia
Veronica Sunny Border Blue
Eryngium 'Blue Star'



SCALES of RESEARCH



FOCUSED TOPIC EXPLORATION

SCALES of RESEARCH

REBUILD
BY
DESIGN



rebuilding water + culture



MULTI-DISCIPLINE COLLABORATION

OLIN LABS

SCALES of RESEARCH



HUNTS POINT, BRONX SECURING THE POINT WITH LIFELINES

Many plans, investments and imperatives align in Hunts Point. Community initiatives and government plans have long-term community vision plans and local champions, but few are designed. The Hunts Point Food Market is a major economic hub, creating over 25,000 jobs and \$2 billion in annual direct economic activity. The Food Market is a key link in the New York City food chain and even short disruption is catastrophic. Strong community leadership has articulated a desire to achieve physical resilience through local jobs. This design opportunity engages community will to develop site-specific designs for integrated storm protection and green infrastructure that offers high quality social space, engages industrial property owners and has components that can be manufactured locally and built out cooperatively. An abandoned marine transfer station in the water could serve as a Resilient Design and Research Center in support of local delivery and wider demonstration of the value of investment in other job bases in the significant maritime industrial areas of New York and New Jersey. The aim is to stake out the potential of hybrid port, protection and ecology uses throughout the estuary.



MULTI-DISCIPLINE COLLABORATION

SCALES of RESEARCH

How do we live on a barrier island that wants to move?



Is there a viable form of edge protection?



TYPICAL OPTIONS

DUNES
 Pros: surge protection
 Cons: difficult to finance; repeat costs
 individual property rights issues
 not a long term solution

ALTERNATE IDEAS

REINFORCED DUNES; MULTIPLE STRUCTURES

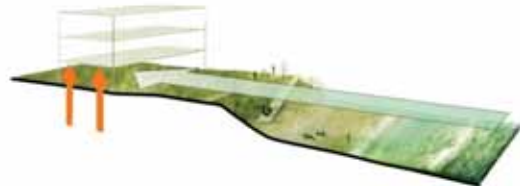
Do we migrate away from risky places?



MIGRATION
 Pros: Reduces physical risk
 Cons: Individuals separated from home + community
 Risk of municipal loss of tax base

LAND SWAP FINANCING; DENSIFICATION

Do we build new house types?



ADAPTIVE REBUILD
 Pros: Individuals can stay in the community; municipalities keep tax base
 Cons: Not affordable for all individuals to do on their own

MODULAR OR DYNAMIC BUILDINGS

SCALES of RESEARCH



SCALES of RESEARCH

PERFORMANCE

The Green City Neighborhood model relies on SMP opportunities in both public and private spaces in the pursuit of Greened Acres. As runoff and runoff respect neither parcel nor political boundaries, GS solutions exploit all available opportunities to manage runoff in the neighborhood context.

Heating Green will employ the principles of the Sustainable Site Initiative (SITES™). SITES encourages restoration of eco-system services, and particularly relevant to Heating Green are services such as restoring natural hydrology, soil health, human health and well-being, and sustainable use of resources and materials.

The performance table (analysis method: Spreadsheet volume model) quantifies the performance of the SMP's in converting impervious acres to greened acres. In Heating Green, 42% of the impervious area of Queens Village is managed in SMP's, exceeding the GCDW's rate of conversion of 1/3 of the CSO's impervious area to greened acres. Total managed volumes by drainage area are identified, and the 0.5", 1", and 2" runoff depths assessed. Cumulative SMP capacity in Heating Green approaches management of 2" of runoff, providing resiliency against intensive runoff events and long-term system performance degradation. Runoff volume is reduced in the 41% to 43% range assuming a 0.5 in/yr infiltration rate.

SURFACE TYPE	AREA (AC)	AREA (AC)	% COVERAGE	IMP VOLUME GENERATED FOR PARALLEL STREET (CF)	IMP VOLUME GENERATED FOR PARALLEL STREET (CF)
TOTAL SITE AREA	42,283	16.8	100		
ROOF AREA (RES)	295,831	6.8	30	9,942	18,888
ROOF AREA (TREE MULTI-RAMP)	16,419	0.4	2	642	1,264
ROOF AREA (REST)	61,184	0.2	1	420	822
ROOF AREA (COMM)	23,274	1.8	10	1,467	2,916
ROOF AREA (PUBLIC)	23,270	0.8	2	360	1,818
OPEN SPACE (PUBLIC)	62,286	1.2	6	2,263	4,526
OPEN SPACE (PRIVATE)	16,605	0.4	2	775	1,550
SIDEWALK	22,060	2.6	16	1,128	2,256
STREET (TRAVEL LANE)	106,208	2.4	12	4,428	8,856
STREET (ON STREET PARKING 200)	44,289	1.0	6	1,888	3,776
STREET (ALLEY)	11,973	0.3	1	499	998
OFF STREET PARKING	5,268	0.3	1	470	859
EXISTING LAWN / VEGETATED AREA*	81,960	1.8	10	1,368	2,736
TOTAL	621,611			32,134	64,268
CP				18,844	37,688
				13,290	26,580

*IMP VOLUME FACTOR OF 0.5 IS APPLIED TO EXISTING LAWN AREAS, FOR MORE REALISTIC VOLUME OF SURFACE RUNOFF ESTIMATION COMPARED TO NATIONAL PRACTICE.

DRAINAGE AREA	IMPV. IMPERVIOUS (SF)	TOTAL LEVEL IMPERVIOUS (SF)	IMPV. IMPERVIOUS (SF)	IMPV. IMPERVIOUS (SF)	IMPV. IMPERVIOUS (SF)	PERCENTAGE IMPERVIOUS (SF)	IMPV. IMPERVIOUS (SF)	PERCENTAGE IMPERVIOUS (SF)	PERCENTAGE IMPERVIOUS (SF)	TOTAL VOLUME RUNOFF (CF)	IMP VOLUME RUNOFF (CF)	IMP VOLUME RUNOFF (CF)	
1 CENTER GREEN (300 CHRISTIAN ST. (WOLF PROPERTY))	46,062	76,609	16,642	2	12,812	21	68,767	1	2,738	11	40,507	6,236	15,471
2 WOLF TOWER	5,829	5,823	2,099	2	2,479	81					2,479	406	1,272
3 ST. PHILIP NEW CHURCH	29,486	61,724	17,750	2	8,600	41	8,594	1	6,234	41	14,834	4,462	6,936
4 BODINE ST (CORNER ST & CHRISTIAN ST)	16,829	30,676	2,629	2	270	71	15,426	1	4,970	21	8,092	2,098	4,376
5 QUEEN ST & MARCOCK ST		22,776					22,776	1	910	11	870	949	1,836
6	14,805					14,805	1	5,912	11	5,812	604	1,208	
TOTAL VOLUME PROVIDED FOR QUEENS VILLAGE WITH STORMWATER MANAGEMENT IMPROVEMENTS (CF)											61,112		

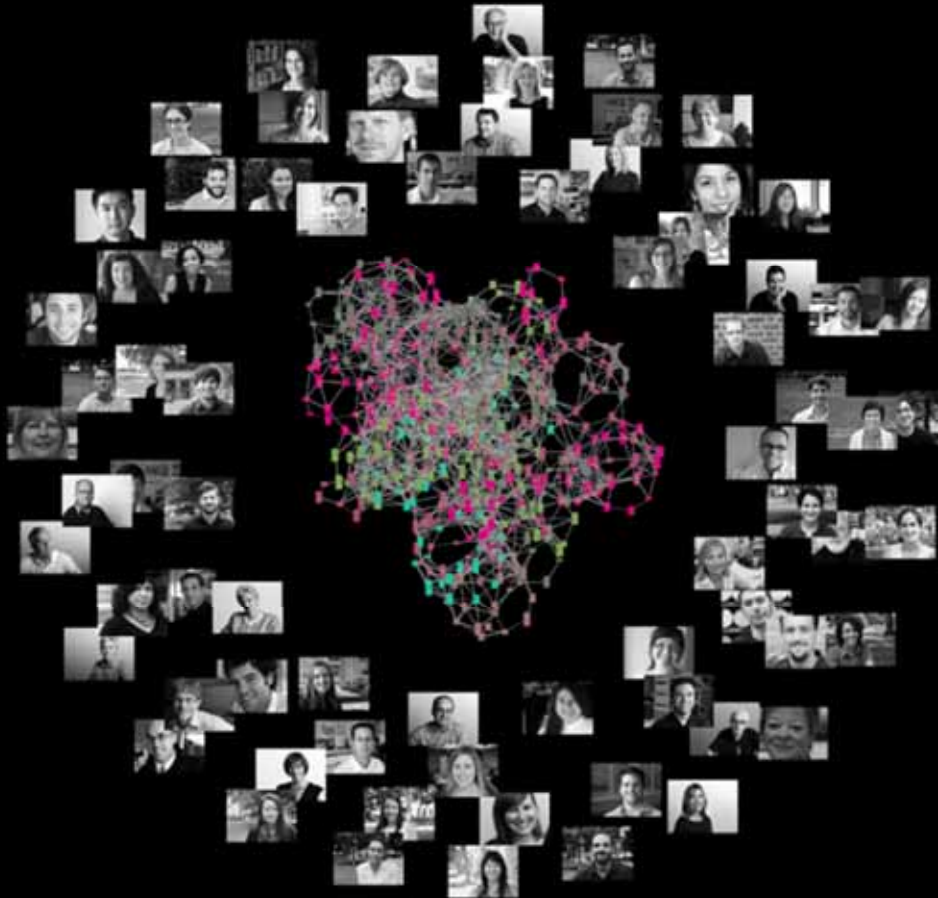
TOTAL VOLUME MANAGED IN QUEENS VILLAGE WITH DRAINAGE AREA (CF)	12,860	27,960	82,894
TOTAL VOLUME RUNOFF IN QUEENS VILLAGE (CF)	32,134	64,246	208,339
PERCENTAGE OF MANAGED VOLUME IN QUEENS VILLAGE	41%	41%	41%
TOTAL IMPERVIOUS AREA MANAGED			
TOTAL IMPERVIOUS AREA IN QUEENS VILLAGE	232,337 SF		
PERCENTAGE OF MANAGED AREA IN QUEENS VILLAGE	41%		



KNOWLEDGE BASE

The screenshot shows a web browser window with the address bar displaying "kb.theolinstudio.com". The page features a navigation menu with links: "image library", "vision", "mail", "info exchange", "control panel", "templates", "my preferences", and "kblumenthal". The main content area is a large image of an outdoor swimming pool with the text "OLIN | KNOWLEDGE BASE" overlaid. Below the image is a search bar with a "Search" button. A central button labeled "OLIN Forum" is positioned above a row of eight icons representing different categories: PRACTICE, PROFILES, PROJECTS, LIBRARY, PLANT FINDER, SAMPLE ROOM, OTV, RESEARCH, and PROF. PRACTICE. At the bottom of the page, there are links for "sitemap", "talk pages", "recent changes", and "rss feeds". A footer section includes "2013 Annual Review Info | Google Apps FAQ's and Support" and "5684 pages, and counting...".

KNOWLEDGE BASE



KNOWLEDGE BASE

The screenshot shows a web browser window with the address bar displaying kb.theolinstudio.com/Research/Site_Elements/OLIN's_Custom_Benches. The page features the OLIN logo at the top left and a navigation menu with links to [image library](#), [vision](#), [mail](#), [info exchange](#), [control panel](#), [templates](#), [my preferences](#), and [kblumenthal](#). Below the navigation is a dark bar with links for [Recent changes](#), [RSS feeds](#), [Sitemap](#), [Tag](#), and [Popular pages](#). A status bar indicates the page was last modified on 11 Mar 2013 by kblumenthal. A toolbar offers options to [Edit page](#), [New page](#), and other actions. The breadcrumb trail reads [OLIN Knowledge Base](#) > [Research](#) > [Site Elements](#) > [OLIN's Custom Benches](#). On the left, a search box and a sidebar menu are visible. The sidebar menu includes 'OLIN Knowledge Base' and various categories like 'Academic Research', 'Agriculture-based', 'Art and Art History', 'Case Study Method', 'Climate', 'Construction', 'Consultants and Designers', 'Ecology', 'Economics', 'Free USGS Topographic', 'Geology', 'Green Infrastructure', 'Historic Preservation', and 'Human-Environment'. The main content area is titled 'OLIN's Custom Benches' and has an 'Introduction' section. The introduction text states: 'Since the 1970s, OLIN has created over 100 custom seating designs. An excel file (last updated April 2012) with bench materials and descriptions, and CAD file (last updated February 2013) with all of bench profiles added to date, are attached below. Additional individual bench detail files, and a periodically updated CAD compiled bench file can be found on the server: Y:\Library\Research\Benches'. Below the text is a grid of 30 technical drawings of various bench designs, each with a small label underneath. The drawings show different styles of benches, including traditional park benches, modern curved benches, and high-back chairs, with various dimensions and materials indicated.

KNOWLEDGE BASE

OLIN

Recent changes | 402 leads | 10 items | Popular pages

Page last modified 14 Dec 2012 10:56:20 by Administrator

1002 Lenfest Plaza at the Pennsylvania Academy of the Fine Arts (PAFA)

Marketing Brief

Philadelphia, 2008-2011. Lenfest Plaza at the Pennsylvania Academy of the Fine Arts unites art and downtown Philadelphia. The plaza links together the Academy's facilities, including the newly refurbished historic Furness-Hewitt Building. Created by closing a 220-foot length of Cherry Street, the plaza serves Philadelphia's Museum Mile and is home to Plant Tooth, a 51-foot tall sculpture by eminent artist Claes Oldenburg—designed to evoke the feeling of a three-dimensional brush stroke running the length in either side—escalating and enjoying the Plaza from various perspectives. A carpet of pavers runs composed of a pattern of precast concrete, with colors inspired by the handsome facade of the Furness City's densest infrastructure corridors, an array of utilities and a subway line ventilation system runs a traversed black locust platform caps the vents while providing a space to host temporary public art. Featured piece changing on an annual basis. Opposite the nonlinear bench and sculpture

Type: Museum
Services: Design Development
Location: Philadelphia, PA, US
Client: Sayler Gregg Architects
Client Type: Design Professional
Owner Type: Cultural Civic Inst.

OLIN

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Page last modified 10:55, 11 Mar 2013 by Administrator

Black Locust

Introduction

Black Locust (*Rhynchospora racemosa* L.), sometimes called **Yellow Locust**, is one of the most decay-resistant native woods. It has escaped cultivation and become naturalized throughout eastern North America and parts of the West. It has been successfully established throughout much of the humid section of the United States and in many foreign countries. Although black locust is not an important timber tree in the United States, it is used for a wide variety of products. Because of its hardness and resistance to decay, [compare to other species], black locust has been used consistently for fence posts, railroad ties, and shipmast posts. ¹

Description

Physical Properties

Avg. Dried Weight	51 lbs./cu ft.
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Elastic Strength	2,010,000 psi ²
Crushing Strength	10,200 psi ²
Shrinkage	Radial: 4.6%
	Tangential: 7.2%
	Volumetric: 10.2%
	T/R Ratio: 1.6

More Info

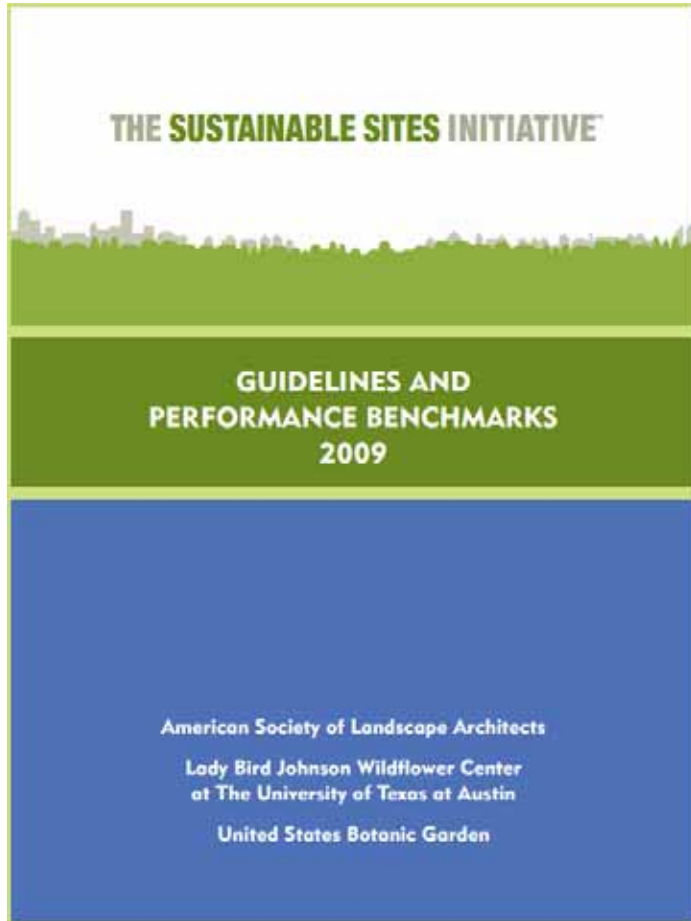
Details

Description: Although black locust is not an important timber tree in the United States, it is used

POST-OCCUPANCY MONITORING



POST-OCCUPANCY MONITORING



9 MONITORING AND INNOVATION

Credit 9.1

Credit 9.1	Monitor performance of sustainable design practices
10 Points	

Intent

Monitor and document sustainable design practices to evaluate their performance over time and improve the body of knowledge on long-term site sustainability.

Requirements

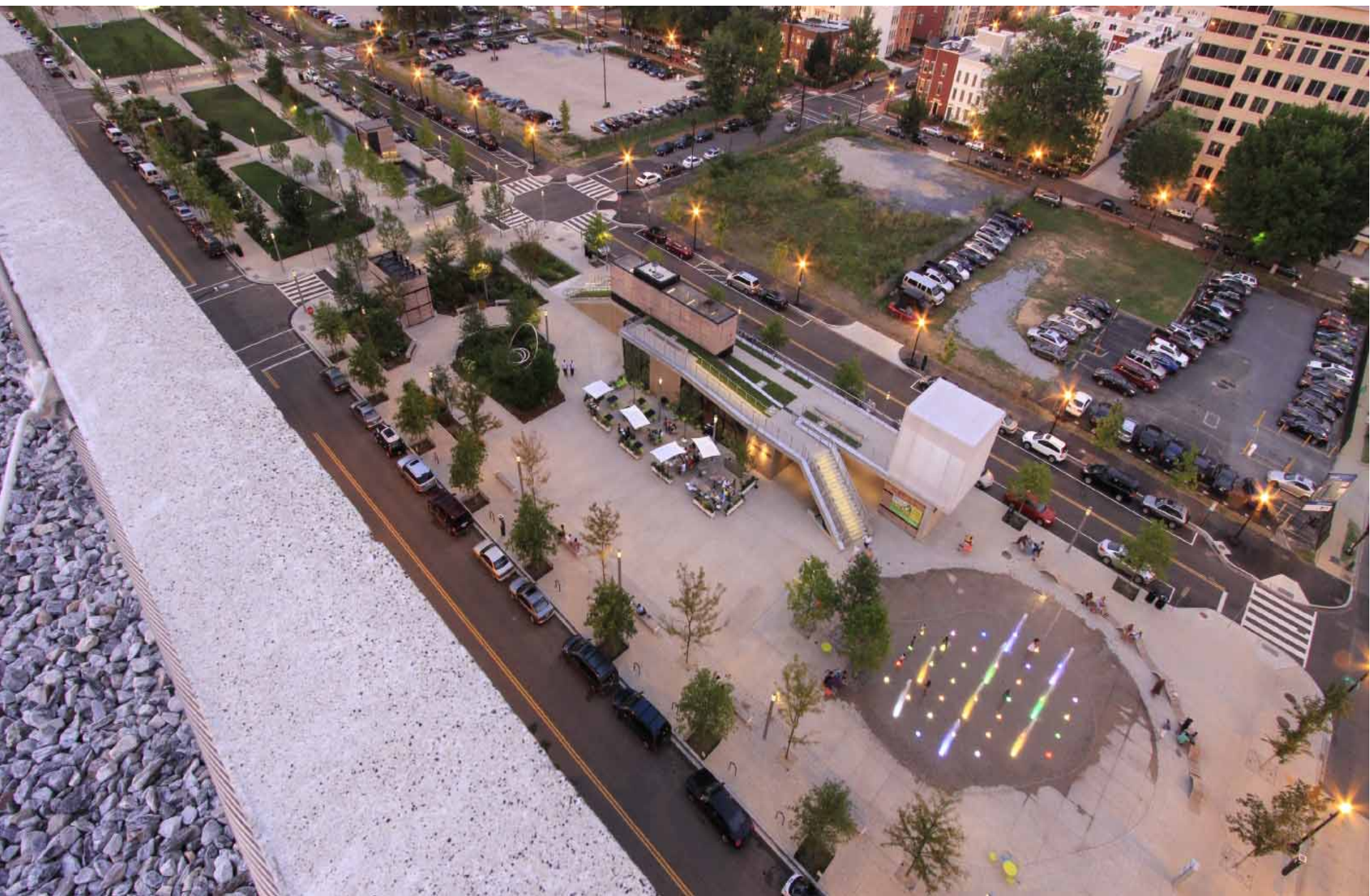
1. Monitor at least three prerequisites and/or credits included in Table 9.1-A on the following pages. Monitoring must be done by a third party or qualified person on the design team for independent peer review. Achievement of this credit is based on the completion and reporting of the evaluation; negative findings will not affect achievement of this or other prerequisites/credits.
2. Complete separate summary reports* for each of the prerequisites and/or credits that include the following components:
 - Describe site feature and/or program that were implemented for the sustainable site selected credit/prerequisite and define the performance or outcome that is being evaluated.
 - Describe the methodology used to assess performance (e.g., sampling, measures/instruments, and procedures).
 - Describe the results from performance monitoring process.
 - Provide documentation that supports and verifies performance data (e.g., tests, interview transcripts, survey results, site visits, etc.).
 - Include recommendations for improving performance in future designs.
3. Widely communicate the results to improve the body of knowledge on long-term site sustainability. Submit the summary reports to a discipline-wide professional magazine (e.g., *Planning, Landscape Architecture*), peer-reviewed scientific journal, professional national/international conference, or national/international public database.

*Note: A separate summary report is not necessary if monitoring results are submitted to the National Stormwater BMP Database.

POST-OCCUPANCY MONITORING



POST-OCCUPANCY MONITORING



CANAL PARK: Washington, DC

POST-OCCUPANCY MONITORING



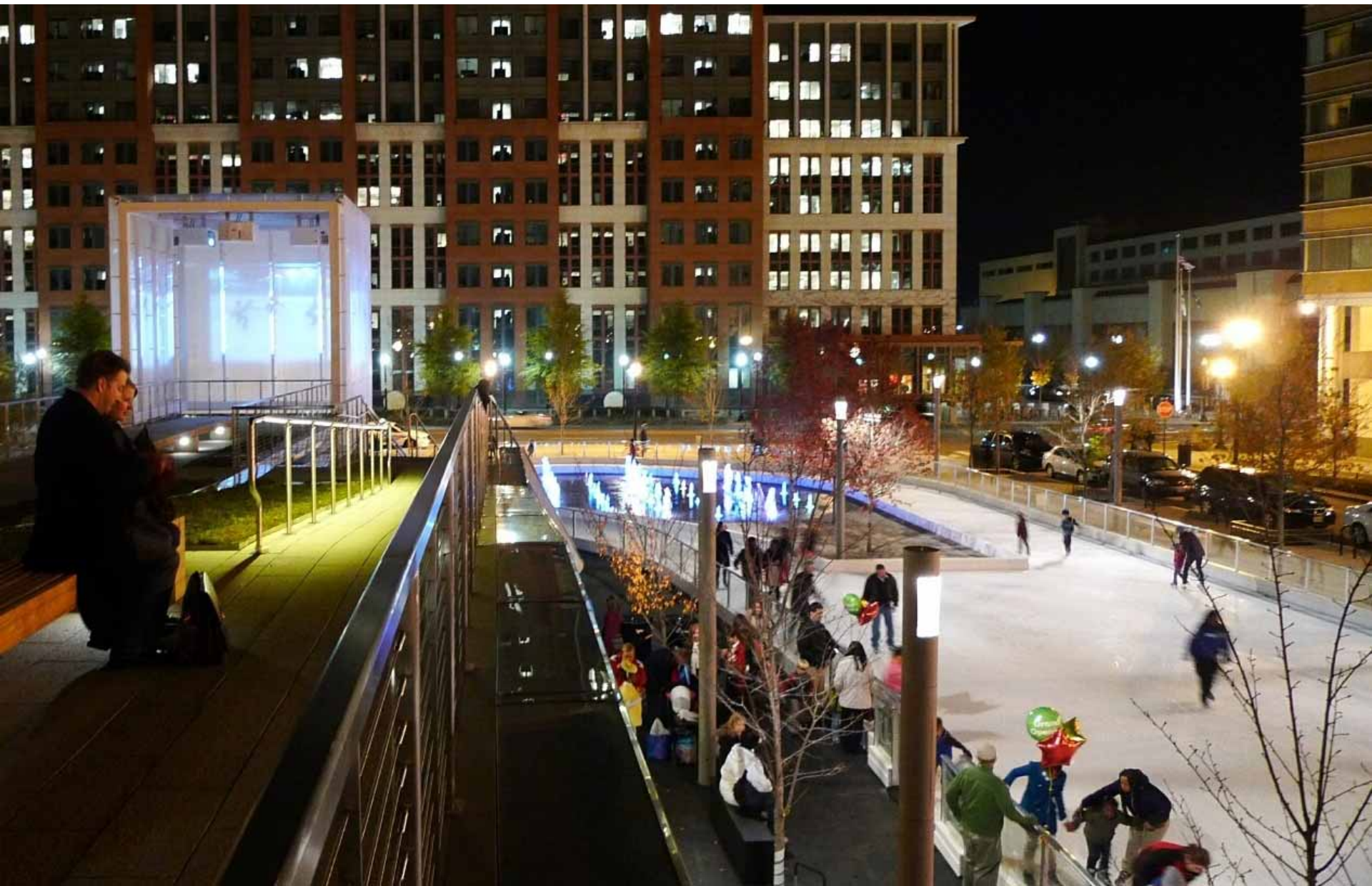
CANAL PARK: Washington, DC

POST-OCCUPANCY MONITORING



CANAL PARK: Washington, DC

POST-OCCUPANCY MONITORING



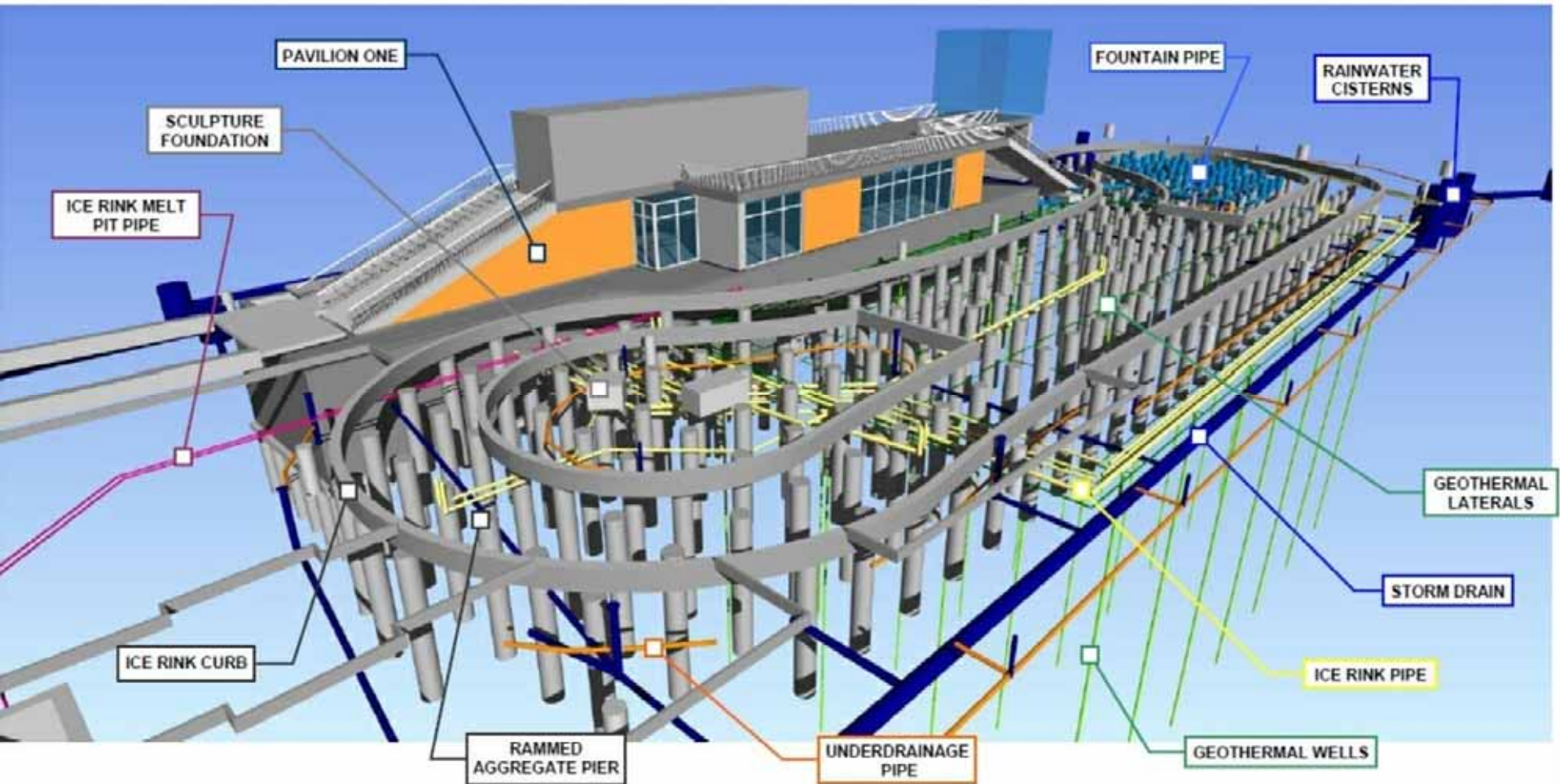
CANAL PARK: Washington, DC

POST-OCCUPANCY MONITORING



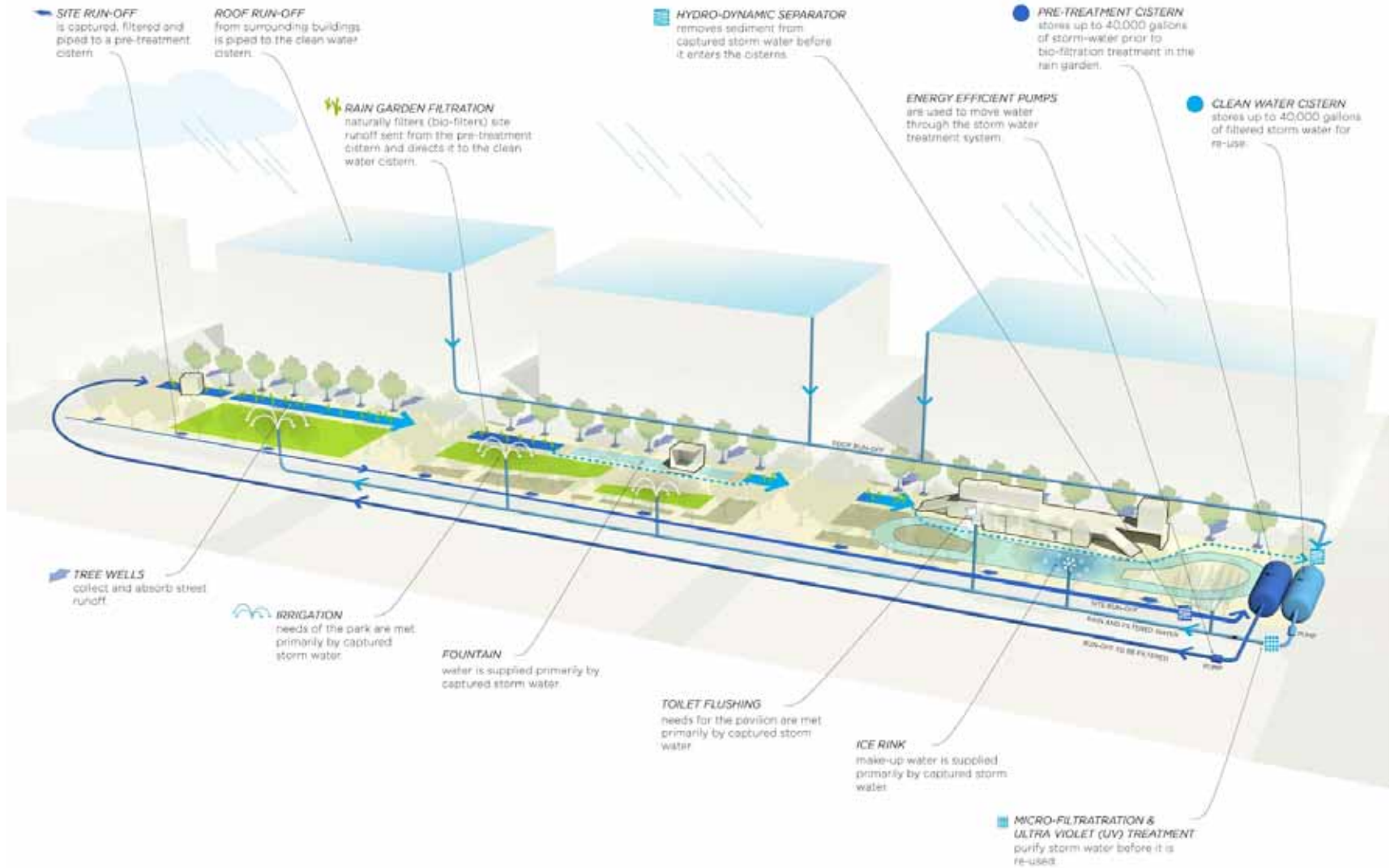
CANAL PARK: Washington, DC

POST-OCCUPANCY MONITORING



POST-OCCUPANCY MONITORING

STORMWATER STRATEGY



POST-OCCUPANCY MONITORING

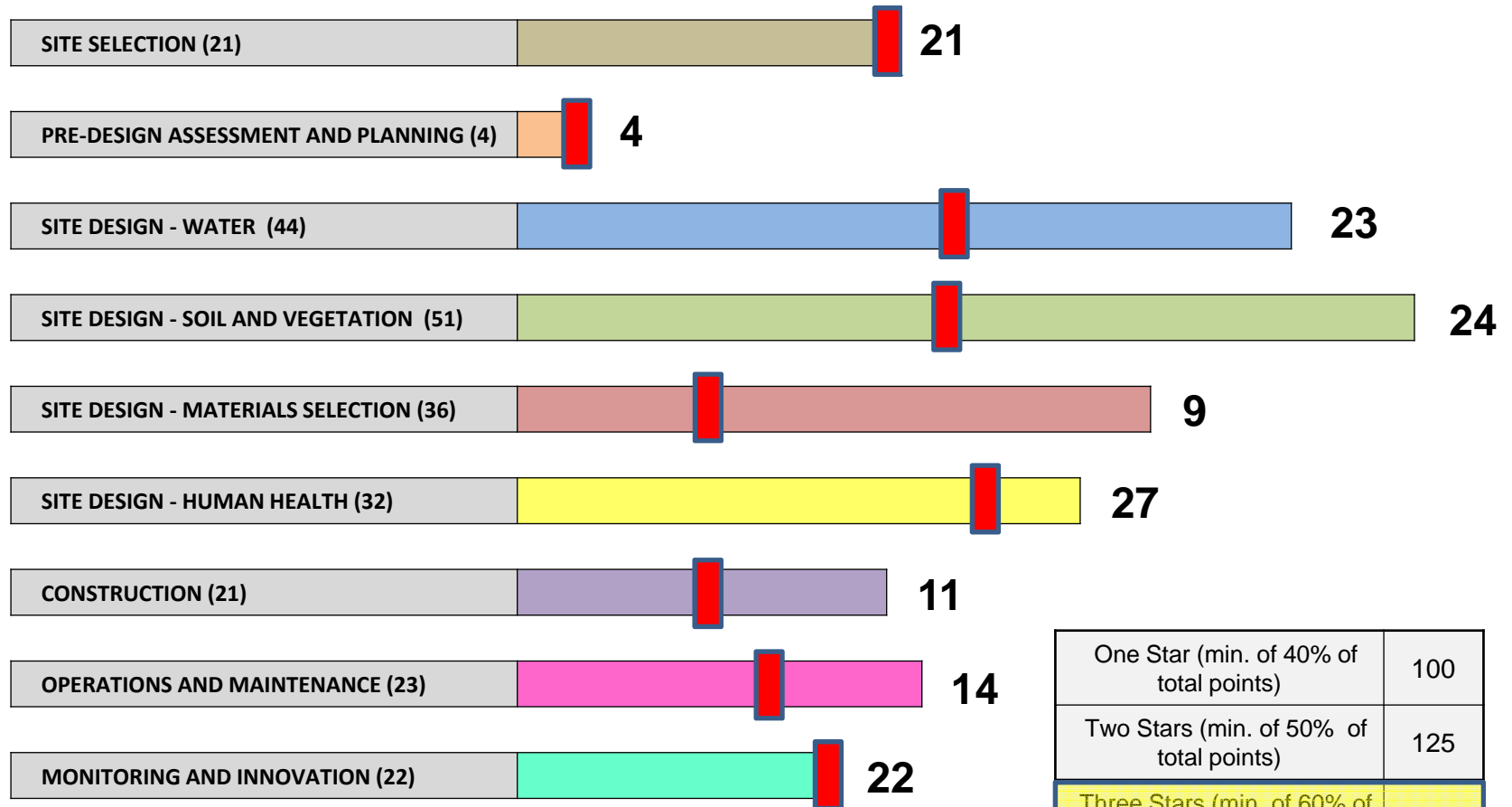
- Rainwater harvesting meets 95% of annual non-potable water needs (at full buildout)
- Potable water use for landscape irrigation reduced by 79%
- 1.5 Million gallons stormwater removed from combined sewers annually
- Site water storage capacity improved by 60%
- 88% average annual runoff treated
- 28 geothermal wells reduce overall energy use by 37%

POST-OCCUPANCY MONITORING

- Vegetative Biomass: Density Restored from 0.54 to 1.84
- Shade Trees and Green Roof: 38% Surface Area Shaded
- Urban Heat Island Effects: 73% Reduction
- Materials: 32% Recycled Content
- Certified Wood: 100% FSC Certified
- Regional Materials: 53%
- Jobs Creation: 160 FTE
- Composting: 100%
- Outdoor Energy Consumption: 67% Reduction

THE SUSTAINABLE SITES INITIATIVE™

Credit Distribution – 250 Point Maximum



Canal Park = 164 Total Points

One Star (min. of 40% of total points)	100
Two Stars (min. of 50% of total points)	125
Three Stars (min. of 60% of total points)	150
Four Stars (min. of 80% of total points)	200

POST-OCCUPANCY MONITORING

SITES CREDIT 9.1:

Monitor Performance of Sustainable Design Practices

1. DIRECT OBSERVATION
2. QUESTIONNAIRE / SURVEYS
3. KEY INFORMANT INTERVIEWS
4. ENVIRONMENTAL TESTING

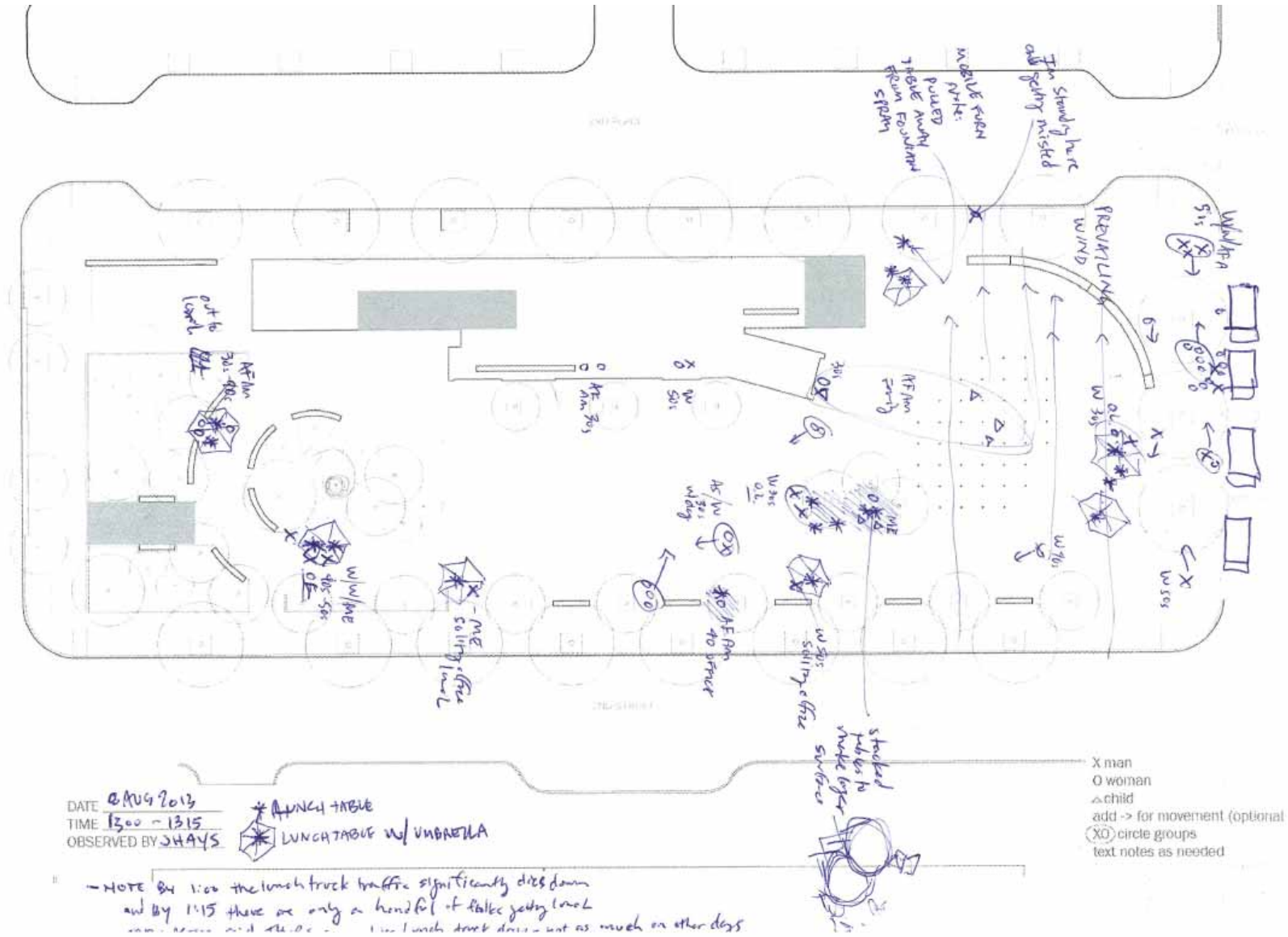
POST-OCCUPANCY MONITORING



POST-OCCUPANCY MONITORING



POST-OCCUPANCY MONITORING



POST-OCCUPANCY MONITORING



FUTURE APPLICATIONS



FUTURE APPLICATIONS



FUTURE APPLICATIONS

ENERGY



RETROFIT



GUTTED



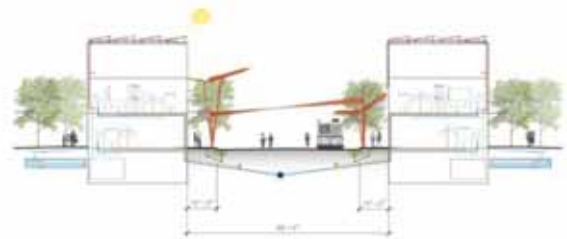
NEW CONSTRUCTION

Retro-fitted buildings will become more efficient through improved weatherization of building envelopes, new fixtures, and efficient appliances and heating/cooling systems.

SOLAR CAPACITY & DEMAND AT BLOCK SCALE

	SOLAR ENERGY CAPACITY (based on roof area)	ENERGY DEMAND	ENERGY DEFICIT
Typical Block 100% area used for solar farm	8,530 MMBTU/year (9.0 million MJ/year)		+ 8,530 MBTU annually (+9.0 million MJ/year)
Typical Block in the Existing Condition	1,802 MMBTU/year (1.9 million MJ/year)	20,090 MMBTU/year (21.1 million MJ/year)	-18,288 MMBTU/year (-19.3 million MJ/year)
Typical Block in the Guttled or Retrofit Condition	1,802 MMBTU/year (1.9 million MJ/year)	12,280 MMBTU/year (12.9 million MJ/year)	-10,478 MMBTU/year (-11 million MJ/year)
Typical Block New Construction (New Typology)	1,802 MMBTU/year (1.9 million MJ/year)	6,142 MMBTU/year (6.5 million MJ/year)	-4340 MMBTU/year (-4.6 million MJ/year)

SOLAR ROOFS AND ENERGY CORRIDOR



RIDGE AVENUE ENERGY CORRIDOR



PATCH WORKING + LIVING CITY DESIGN COMPETITION

FUTURE APPLICATIONS



- SITE STRATEGY 1** SOCIAL FABRIC
- SITE STRATEGY 2** PRODUCTIVE LANDSCAPES
- SITE STRATEGY 3** GREEN INFRASTRUCTURE
- BUILDING TYPE 1** RETROFIT
- BUILDING TYPE 2** GUT AND REHAB
- BUILDING TYPE 3** NEW CONSTRUCTION

FUTURE APPLICATIONS



FUTURE APPLICATIONS

25 Year development plan with increase in housing stock

Sustainable Housing Capacity

(Capacity limit is defined by the scarcest resources ability to support a given population)

Water

Energy

Health/Equity

Current
Condition

Current
Sustainable
Capacity

25 year
Condition

25 Year
Sustainable
Capacity

5173
Households

775
Households

6179
Households

17,430
Households

5173
Households

67
Households

6179
Households

10,634
Households

5173
Households

2586
Households

6179
Households

10,346
Households

FUTURE APPLICATIONS

