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KRISCENSKI | NATURE AND POLICY | CAMBRIDGEPORT INTERVENTION

Cambridgeport

I. California Paints

Current conditions

Located in South Cambridgeport, the site includes a mix of old warehouses, industrial buildings and hardscape, all of which were part of a paint production company. Bordered by commercial, light industry and an historic park.

Currently there are no amenities to draw the community to the site. There is also a lack of connectivity to nearby parks and neighborhoods. The result is a barren industrial wasteland.

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Cambridge Blue Ribbon Committee Report

A previous site development study in 1986 recommended mixed income and affordable housing in new areas. Urban design with mixed use, street-level building design that provides for shops, cafes, etc.

The study focused on high quality of life including green space and plantings, street-level design incorporating a mix of commercial, research and light industrial to provide potential jobs.

= opportunity for development in line with municipal sustainability strategy

II. Nature Intervention

Green Space Connections

Magazine Beach to the SW (pictured top) is a reinvigorated recreation area that links the community to the Charles River and provides an important anchor point on a new greenway.

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Fort Washington Park to the NE is a beautiful yet isolated historic park with great cultural significance. The park provides another greenway anchor point.

+

New Park is proposed to turn an underutilized hardscape into green space mixing art, nature and water.

+

Green link from neighborhood to the New Park will use street scape plantings to draw people to the new parks and into the new Cambridgeport greenway.

+

Rooftop garden at the repurposed California Paints building will serve the overall intervention strategy to connect Cambridgeport to existing and new Nature areas and support a citywide green roof program through policy development.

= environmental and social benefits

III. Green Roofs + Cambridge

Relevance

The City of Cambridge has a strategy in place to help combat global climate change by taking action at a local scale. Green roofs have a significant role to play in the city's diverse initiatives, including green building, energy management, and water protection.

South Cambridgeport Development Guidelines

Open space: Innovation in the style, configuration, and location of open space and landscaping is encouraged.

City of Cambridge Climate Protection Plan

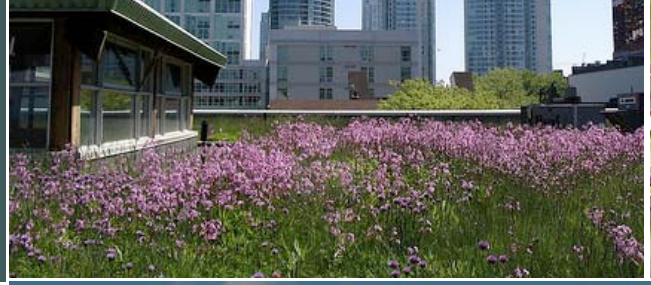
Optimize building design and the use of vegetation to shade buildings and reduce the urban heat island effect. …{use} reflectance or "green" landscaped roofs…

…Vision Statement

Rooftop gardens and green roofs are routinely installed on buildings of all types to reduce the need for air conditioners in the summer and to reduce stormwater runoff to the Charles and Mystic rivers.

Images www.wikipedia.org

IV. Rooftop Garden
California Paints



Goals
Provide urban green space;
Enhance municipal sustainability strategy;
Serve as environmental education platform;
Serve as case study to inform new policy.

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Opportunities
Innovation in financing program;
Support local sustainable development;
Serve as 'living laboratory' demonstration;
Integrate with existing green space;
Serve as platform for sustainable initiatives.

+ solutions to…

Challenges
Economies of scale on cost-effectiveness;
Awareness of benefits of green roofs;
Availability of technical expertise;
Acceptance of building regulations.

+

Key success factors
Innovation
Clear sustainability objectives
Engagement

= Design showcase and policy platform

Objective
A green roof design that engages the local community and supports a successful citywide green roof program.

v. Design Strategy
Overview

Special considerations

Create linkages to nearby green space either physically or through informative displays, such as vantage point historical display on Fort Washington Park. Create connection to community activities through provision of meeting spaces. Demonstrate, educate; Be visible and accessible; Become iconic structure.

Key elements

Multi-purpose rooftop ‘zoning’;
Integrated spaces for diverse functions;
Interpretive trails through all key areas;
Green building and ecology research areas;
Food production garden space.

+

Materials

Cutting-edge technologies, inc. test phase;
Native plant species + habitat gardens;
Pervious walkways and paths;
Recycled, repurposed or salvage origin.

+

Form

Allows maximum viewing of garden;
Optimizes views of Boston cityscape;
Seating and meeting spaces throughout.

=


Image www.greenroofblocks.com


Image www.asla.org/greenroof

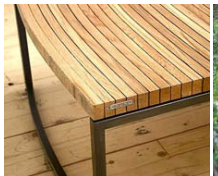

Image www.greenroofs.com

Innovation:
Bring large scale architecture ideas to a small scale project for iconic (yet human-scale) structure.

Sustainability Objective:
Integrate with green building strategies on energy efficiency and water use to serve policy platform.

Engagement (and access):
Organic form and fluid movement from street level to ‘rooftop’ to create seamless access. Provide space and services for cultural and educational programs.



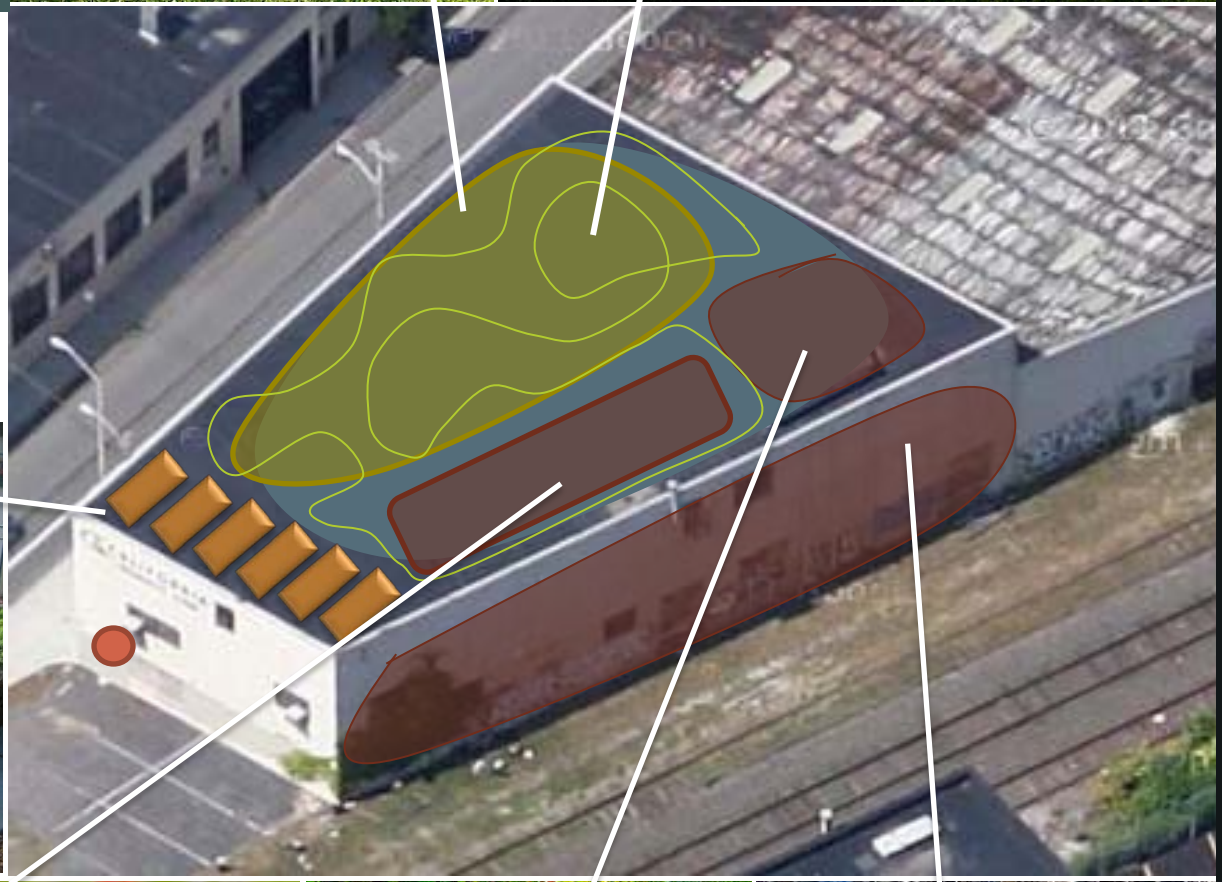




VI. Design Strategy
Key Elements

Spaces for congregation

Key elements

Multi-purpose rooftop ‘zoning’;
Integrated spaces for diverse functions;
Interpretive trails through all key areas;
Green building demonstration areas;
Ecology / nature studies research areas;
Food production garden space.



Urban garden

Habitat garden for nature studies

Green building demonstration areas

VII. Design Strategy
Materials


Sustainable seating

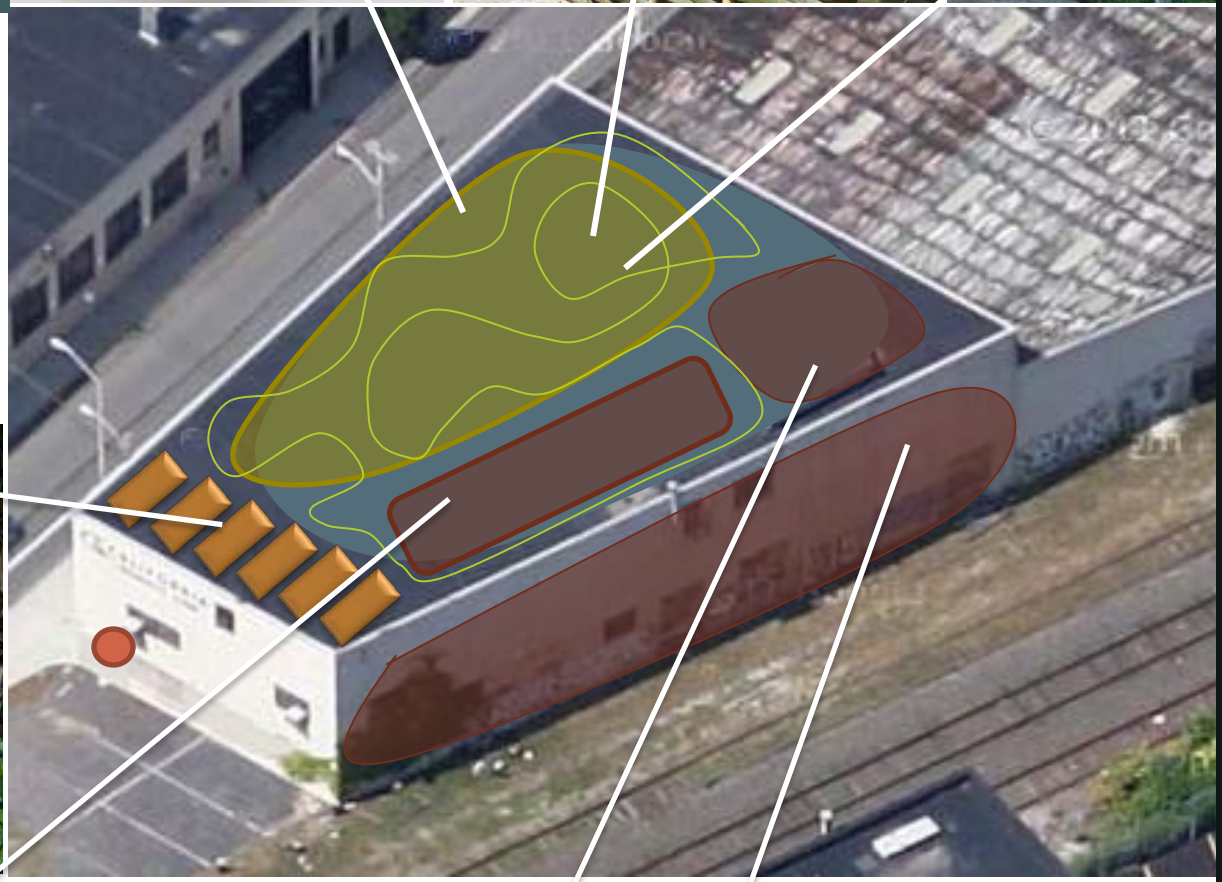
Green product showcase


Bamboo fencing


Solar lighting

Materials

Cutting-edge technologies /research;
Native plantings + habitat gardens;
Pervious walkways and paths;
Recycled, repurposed or salvage origin;
Renewable and energy efficient fixtures.



Native and heirloom species


Image www.growharvestcook.com.au


Lobelia siphilitica Indian tobacco

Green roof and wall systems testing


Image www.greentechies.com


Image www.greenroofblocks.com

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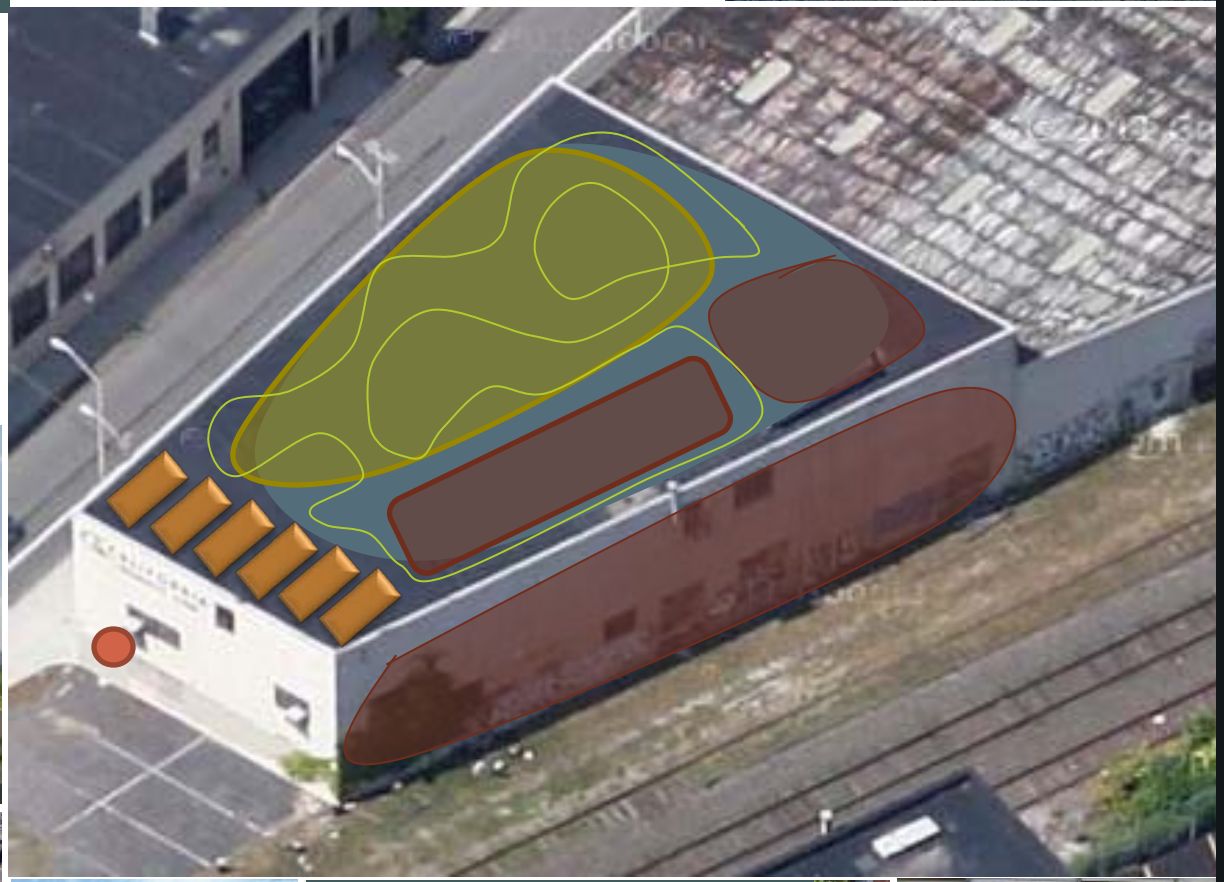
VIII. Design Strategy
Form

View of green roof at Boston Children's Museum

Spatial relations

Form

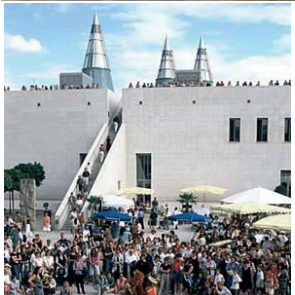
Allows maximum viewing of garden;
Optimizes views of Boston cityscape;
Seating and meeting spaces throughout;
Iconic building + landmark features;
Encourages access from street level.



Precedents

Jiang Wan Cultural Center
Shanghai, China

Museumsmeile
Bonn, Germany



Iconic, yet human-scale


Image www.dcmetrocentric.com


Image www.greenroof.se

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IX. Policy Strategy

Special considerations

Integrated program management between parks, cultural, economic organizations / departments. Integration with municipal sustainability and economic development strategy. Incentives program based on models from US, UK, Switzerland, Germany. Training and accreditation classroom opportunities.

Obstacles

Potentially higher installation costs;
Limited small-scale technical expertise;
Structural limitations in existing stock;
Lack of government incentives.

+

Key success factors

Direct financial incentives;
Long-term energy savings;
Technical expertise and support.

+

Policy elements

Direct financial subsidies;
Reduced infrastructure fees;
Federal legislation with compensation;
State legislation with energy incentives;
Local municipality regulation.

=

Innovation:
Create community-based forum and program for benefits sharing.

Sustainability Objective:
Biodiversity easement program following The Nature Conservancy model. Showcase green building benefits and serve as example.

Engagement :
Establish partnerships with cross-sector organizations to invigorate use and opportunities for exchange, such as on site food production and green roof accreditation training site.

x. Policy Framework

Policy elements

I. Cambridgeport Green Roof Policy

a. Where a green roof is installed, the owner shall receive a subsidy determined by a monetary sum per square foot of green space up to 25% of the green roof installation costs.

b. Where green roofs reduce demand on the municipal infrastructure, the owner shall be granted a reduction in associated fees equivalent to the scale and scope of the service provided.

c. Where new development or renovation occurs and with roof angles of less than 20˚, the owner shall be required to install a green roof on no less then 25% of the surface area where a green roof installation is technically feasible.

II. Supporting Legislation (state and federal)

a. Where a green roof supports habitat for one or more endangered species as defined by the Endangered Species Act, the owner will qualify for a one-time federal income tax deduction equal to 25% of the installation costs.

b. Where a green roof is determined by quantifiable measures to reduce the energy load of a building the owner shall receive a one-time federal rebate up to 50% of the installation costs.

c. Where a green roof is installed, the owner shall qualify for a Massachusetts income tax deduction up to 50% of the installation costs.

d. Where a green roof is installed, the owner shall receive a Massachusetts sales tax exemption for the purchase.

e. Where a green roof is installed, the green roof is exempt from assessment and resulting property tax.

III. City of Cambridge Obligations

The City of Cambridge shall:

a. establish support services including technical expertise and information resources to assist homeowners and businesses with decision-making and implementation of green roof systems.

b. create a community-based forum to inform the establishment of a working group to determine a suitable program for benefits sharing.

c. engage in a collaboration with an established national (or international) conservation easement program (e.g. The Nature Conservancy) to develop a program for biodiversity conservation suitable to green roof installations.

d. support education and outreach that engages the community to understand the benefits of green roofs.

e. seek opportunities that engage cross-sector organizations and programs with local green roof initiatives.

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XI. References | Resources

Chicago to Help Fund Green Roofs
www.buildinggreen.com

City of Cambridge Climate Protection Plan
http://www2.cambridgema.gov/cdd/et/climate/clim_plan/clim_plan_full.pdf

Ecoroofs Everywhere
http://www.ecoroofseverywhere.org/

Effective Green Roof strategy for Cambridgeport
https://moodle.the-bac.edu/mod/forum/discuss.php?d=17414

Green Roofs for Healthy Cities
www.greenroofs.org

Green roof species list - Greenbelt Native Plant Center
www.nycgovparks.org/sub_about/parks_divisions/gnpc/pdf/green_roof_species_list.pdf

International Green Roof Association (IGRA)
http://www.igra-world.com/

International Green Roof Journal
http://www.greenroof.se/

Living Roofs
http://livingroofs.org/

New York City Department of Parks and Recreation
www.nycgovparks.org/

Tax credit promotes green roofs in NYC
www.buildinggreen.com

Urban Greenspaces Institute
www.urbangreenspaces.org/

Urban residential in Oregon
www.oregonlive.com/environment/index.ssf/2009/01/environmentalists_and_the_city.html

South Cambridgeport Development Guidelines
http://www2.cambridgema.gov/cdd/cp/zng/cport/cport_south_guide.pdf

World Green Infrastructure Network
http://www.worldgreenroof.org/index.html

World Radio Switzerland
worldradio.ch/wrs/programmes/all_things_green/green-basels-green-roof-initiative.shtml?15440