

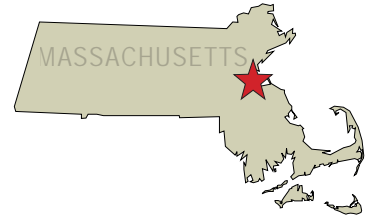
US EPA ARCHIVE DOCUMENT



# Evaluating Green Roof Potential in the Jackson Square Redevelopment Project

## *Sustainability Pilot Background*

EPA's Brownfields Sustainability Pilots provide technical assistance to assist communities in achieving greener, more sustainable results when redeveloping brownfields. These pilots also provide models for other communities across the country.



EPA provided technical assistance to Urban Edge, a nonprofit community development corporation, for the evaluation of green roof options for the Jackson Square redevelopment area in Roxbury, Massachusetts. EPA assistance included an evaluation of installation and sizing alternatives for a green roof. The goal of the evaluation was to reduce the street level stormwater infrastructure required to meet city and state stormwater management guidelines. Stormwater regulations for typical projects of this size require underground stormwater retention tanks. By installing a green roof with stormwater retention properties, the size of the required retention tanks can be reduced. Therefore the potential volume and cost of contaminated soil that must be removed is reduced.

## *Jackson Square Redevelopment Project Area Background*

The Jackson Square Redevelopment Project area consists of 15 sites that had a variety of previous uses. Past uses included residences, a blacksmith shop, gas tank storage, paint shop, auto service station, stable, plumbing warehouse, automobile dealership, repair shop, public work garage, and a minimum security correctional facility. Some sites in the redevelopment area were vacant since the mid 1990s and others are still in use today.

Environmental site assessments were conducted by the Boston Department of Neighborhood Development using EPA funding. These assessments revealed a variety of contamination on the sites within the redevelopment area including: petroleum contamination, underground storage tanks, lead, arsenic, petroleum hydrocarbons, naphthalene, volatile organic compounds, polycyclic aromatic hydrocarbons, non-aqueous phase liquid, and heavy metals. Urban Edge also has an EPA Brownfields Cleanup grant to remediate contamination at one of the properties included in the Jackson Square redevelopment plan.

## *Project Highlights*

EPA technical assistance to Urban Edge included an evaluation of existing green roof technologies and assistance in selecting the appropriate technology and vendor to fit program needs. EPA provided Urban Edge with a listing of green roof products and vendors in the greater Boston area upon which decisions in the design phases of the construction project could be based. Specific evaluations of green roof technologies that were evaluated as part of the technical assistance include:

- Environmental Impacts
- Energy Consumption Impacts
- Stormwater Management Impacts
- Regulatory Requirements
- Programmatic and Access Needs

Urban Edge is incorporating the construction of green roofs as part of the Jackson Square redevelopment project in four phases where appropriate. EPA's technical assistance provided a preliminary evaluation of each building within the project area and the maximum area possible for green roofs. As a result, the four phases of the redevelopment project could potentially yield more than 95,000 square feet of green roof area when the project is complete. Urban Edge is very active in its community through outreach and is fostering public participation in its projects. This includes Green Housing at Urban Edge (Green HUE), which presents to the community a strategy to implement green affordable housing development and maintenance.

**Challenges and Lessons Learned**

**Ensuring Proper Building Infrastructure to Support Load Capacities**

Green roofs may require additional structural reinforcement. The Jackson Square developers must ensure that systems are installed with appropriate rooftop loading capacities, roof slopes and space availability. The technical assistance included relevant building characteristics in recommending the optimal green roof system.

**Compliance with State Stormwater Management Guidelines**

New construction over one acre must comply with state stormwater management guidelines. These guidelines define the quality and peak flow discharge for stormwater. Green roofs reduce the need for stormwater treatment on the ground.



Aerial view of Jackson Square with development potential for green roofs.

**Sources for Additional Information**

For more information on this project, please see the full Jackson Square technical assistance report at: [http://www.epa.gov/brownfields/sustain\\_plts/factsheets/roxbury.pdf](http://www.epa.gov/brownfields/sustain_plts/factsheets/roxbury.pdf)

Additionally, please see: [www.urbanedge.org/green-housing.php](http://www.urbanedge.org/green-housing.php)

**Regional Contact Information**

For more information on the Jackson Square Pilot project, please contact:

**Jessica Dominguez**  
**EPA Region 1**  
 617-918-1627  
[dominguez.jessica@epa.gov](mailto:dominguez.jessica@epa.gov)