



# Green Infrastructure & Stormwater Management CASE STUDY

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## Minuteman Office Park

**Location:** Andover, MA

**Client:** Brickstone Properties

**Design Firm(s):** John G. Crowe Associates, Inc., Landscape Architects

**Landscape architect/Project contact:** John G. Crowe, ASLA, RLA

**Email:** [jcrowe@jcrowe.com](mailto:jcrowe@jcrowe.com)

**ASLA Chapter:** Boston



Photo: John G. Crowe Associates, Inc.

## Project Specifications

**Project Description:** A 110 acre office park with 1.4 million sq/ft of development. All storm drainage for buildings, roads, parking areas, and other developed areas was routed through wet ponds, bioretention cells, and other BMP's and collected into a central source that was recycled into an irrigation distribution system that provided all the irrigation for the total park, eliminating irrigation from a domestic water source. Peak irrigation draw during summer months is up to 1 million gallons per week.

**Project Type:**

Commercial

Part of a new development

**Design features:** Bioretention facility, bioswale, and wet ponds.**This project was designed to meet the following specific requirements or mandates:**

State statute, local ordinance, developer/client preference, the project met standard ordinances/permits associated for any project. No special ordinances applied.

**Impervious area managed:** greater than 5 acres**Amount of existing green space/open space conserved or preserved for managing stormwater on site:** greater than 5 acres**The regulatory environment and regulator was** supportive of the project.**Did the client request that other factors be considered, such as energy savings, usable green space, or property value enhancements?** Property value enhancement.**Cost & Jobs Analysis****Estimated Cost of Stormwater Project:** \$1,000,000-\$5,000,000 (Public funding: None)**Related Information:** Not broken down**Was a green vs. grey cost analysis performed?** No**Cost impact of conserving green/open space to the overall costs of the site design/development project:** Cost comparison was not done.**Cost impact of conserving green/open space for stormwater management over traditional site design/site development approaches (grey infrastructure)?** Did not influence costs. Cost comparison was not done, but cost savings generated from recycling of stormwater for irrigation was significant in itself.**Number of jobs created:** not estimated, but office park houses over 4,000 employees**Job hours devoted to project:**

Planning and Design: Not available

Construction: Not available

Annual Maintenance: Not available

## Performance Measures

### Stormwater reduction performance analysis:

The system was designed to recycle stormwater for irrigation and meet/exceed minimum water quality generated from storm water to downstream areas. The downstream receiver in this case was the lower reaches of a major river with a 10,000-acre watershed and stormwater from this watershed was released to be ahead of peak flow from upstream areas.

**Community & economic benefits that have resulted from the project:** Increased property value, as well as local neighborhood amenity. The Park is used by both employees and local residents for walking and passive recreation. Walking trails through the Park are connected to the various ponds and sitting areas and eventually connect to a future regional trail planned along the Merrimac River corridor that will connect to historic mill towns and the Atlantic Ocean.

## Additional Information

**Links to images:** Refer to Minuteman Park at [www.jcrowe.com](http://www.jcrowe.com) website.

At the inception, the project was quoted by local Conservation administrators and planners as being "well ahead of its time", and still meets or exceeds environmental requirements.