BOSTON COLLEGE

A ROOFTOP GARDEN AT 129 LAKE STREET
A Feasibility Study of the Installation of a Green Roof on Brighton Campus

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BACKGROUND Roof gardens are becoming more prevalent as a way to reduce one’s carbon footprint, storm water runoff, and energy costs.1 In this project, we examine the types of green roofs (extensive, semi-intensive, and intensive), the benefits to installing a green roof, and what procedures are necessary for installation. Our case study is the roof of 129 Lake Street on Brighton Campus. We chose a section of the roof and determined what type of garden it could sustain. From there we see the costs and benefits of such a project, deciding if installing a rooftop garden on campus is something that Boston College should act upon.

METHODS Over the course of the semester, we conducted a cost-benefit analysis of installing a rooftop garden at the site of 129 Lake Street on the campus of Boston College. We researched the different types of green roofs and their pros and cons. By working with Scott McCoy in the Grounds Department and looking at the feasibility of the project, both physically and economically, we determined a section of the roof to focus on. We then contacted a few companies in the Boston area that specialize in rooftop gardens. We worked with LiveRoof who assessed the roof and gave us further estimates in regards to our specific site. By using the estimates from LiveRoof, as well as the energy costs of the building as given to us by John MacDonald, BC’s Energy Manager, we were able to determine what type of garden would best suite the roof, as well as the savings a garden could acquire. We hope this cost-benefit analysis will provide an information that will inspire BC to go through with the project.

RESULTS We chose a small section of the roof of 129 Lake St based on its ability to be seen from the street and office windows as well as the seminary building next door and based on its exposure to sunlight. Based on our calculations the most feasible type of green roof to install is an extensive green roof. Since the roof is not accessible to the public, a low maintenance roof not needing irrigation is the easiest and most practical option. Though the return on investment for energy savings is quite low, the increased longevity of the roof itself makes installation worthwhile. Though the investment, at over $9,000, is double the price of reroofing the current roof, BC will begin saving money in less than 40 years with a green roof. Two 20-year replacements of the current roof will put the cost at roughly $10,000 whereas the green roof will last for another 40 years beyond that before needing replacement.

RECOMMENDATIONS We hope that Boston College will use 129 Lake Street as a test for future rooftop gardens on campus. Dorm buildings would work well because most are large flat simple roofing. The O’Neill library is also a promising future location for a green roof. It is exposed to ample amounts of sunlight, and it is centrally located, allowing students and visitors to enjoy it. Green roofs provide a lot of potential for educational use. As BC has recently created an Environmental Studies major, green roof spaces could be used as an educational tool for interactive learning. Additionally, groups like EcoPledge and Real Food BC could find working with a green roof beneficial to the goals and missions of their student run organizations.

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