Masters Theses 1896 - February 2014

Schoolyard Renovations in the Context of Urban Greening: Insight from the Boston Schoolyard Initiative, Boston, Massachusetts

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Document Type
Open Access

Degree Program
Landscape Architecture

Degree Type
Master of Landscape Architecture (M.L.A.)

Year Degree Awarded
2011

Month Degree Awarded
May

Keywords
urban greening, pervious surfaces, canopy cover, schoolyard design, children and nature, children and vegetation

Abstract
Twenty years ago the public schoolyards in Boston, Massachusetts were in a deplorable state: most were entirely paved, seriously neglected and used predominantly for parking. Since 1995, the Boston Schoolyards Initiative (BSI) has worked to transform these spaces into vibrant environments of recreation and learning. Renovations typically include adding play structures, gardens, murals and seating that can engage children at recess or support an educational activity. Recent research has shown that BSI renovations have had a positive impact on student academic performance (Lopez, Jennings and Campbell, 2008), but little attention has yet focused on how these revived and greened spaces have contributed to citywide urban greening efforts and to the environmental quality of their surrounding neighborhoods. This study uses design plans and GIS data to compare pre- and post-renovation canopy

cover and pervious surfaces at 12 BSI schools. Data analysis included both an examination of the percent increase in canopy cover and pervious surfacing as well as exploration of the spatial configuration of green space and play space within the newly designed schoolyards. Data indicates that overall BSI renovations have a slightly positive impact on canopy cover and pervious surfacing, but gains are not uniform and many schools are left not meeting citywide goals for canopy cover and pervious surfacing. In addition, schoolyard designs emphasized traditional play structures and paved spaces, subordinating opportunities for children to interact with vegetation. Although eight school renovations included an outdoor classroom with natural features, only one provided any space for children to interact more informally with vegetation. Schools are organized into five different typologies based on the proportions of spaces they contain and spatial configurations, and one typology is recommended as a model for future renovations. In conclusion, this study addresses the challenges and constraints facing urban schoolyard renovations and proposes a framework for integrating recommendations in an iterative experimental manner.

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