

EXPERIENCE WITH COLLABORATIVE RESEARCH ON THERMAL CHARACTERISTICS OF LOW IMPACT DEVELOPMENT STRATEGIES

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1 ABSTRACT

As the urbanization increases, stormwater runoff heated by urban surfaces during summer directly flows into lakes, streams, and bays, where it mixes and potentially increases the base temperature of receiving waters. Low impact development (LID) control measures are well known to tackle urban stormwater runoff, but little is known about the potential of these LID control measures in reducing the stormwater runoff temperature. To examine this potential, a controlled test is designed and conducted in the Green Infrastructure Laboratory (GIL) at Auburn University. The goal of the research is to assess how LID stormwater control measures affect stormwater runoff temperature. Particularly, pervious and impervious concrete, sod, brick pavers, and rain gardens are involved in the test. Since there are the very limited reference for this kind of research, the focus on process and result of the test weighs equal in achieving better research outcomes. Thus, instead of showing the core testing results, this paper aims to discuss the test setup, research methods and process. More importantly, professor and students from the Department of Landscape Architecture at Auburn University have involved in this laboratory-scale research. By discussing how we contribute to the research from the aspects of test-oriented work and test outreach, we start to examine the ability of landscape architecture to actively engage experiment-based research. This also pushes the boundaries of landscape architecture to a much more detailed material thinking, and helps to understand complex landscape performance of LID practices through the thermal aspect.

1.1 Keywords

Collaboration, Thermal Impact, Low Impact Development, Maintenance, Outreach