

**Urban Heat Islands and The University of Florida:
An Audit of the University of Florida “A” Planning Sector**

Carson Crockett

College of Design, Construction, and Planning; University of Florida

DCP 4290: Capstone in Sustainability and the Built Environment

Faculty Mentor: Professor Bahar Armaghani

August 22, 2022

Abstract

Urban heat island effect is a negative phenomenon that plagues our cities and communities. This study aims to address it in a commonsense fashion. Urban heat islands are caused by the excess absorption of solar radiation in hard surfaces, therefore, if we can reduce the amount of radiation being absorbed, we can lower the impact of urban heat islands (EPA, 2022). For this reason, the study focuses on the solar reflectivity of surfaces, using the University of Florida as a testing ground. Surface measurements were taken and assigned solar reflectivity values to evaluate the current conditions of the site before suggesting possible improvements. The section of the university campus explored, the A planning sector, recorded an 83% reflectivity rate before mitigation strategies were implemented. The improvements, such as an increase in vegetation and upgrades to roofing materials, yielded a 91% reflectivity rating. This was supplemented by a site visit to ensure logical consistency of these results in the real world. The main takeaway of this study is not that of the university campus, but rather how we address urban heat islands. It is a matter of urban design and form. Mitigation strategies all fit into this idea of improving urban form. As such, the true finding of this study is one of necessity. We must make changes today to save out cities tomorrow and make them truly sustainable.

Acknowledgements

This study could not have been completed without the support and guidance of my faculty mentor, Bahar Armaghani, and the rest of the Sustainability and the Built Environment (SBE) Staff and Faculty at the University of Florida. It has been a great pleasure to take what I have learned during my education in the SBE program and apply it to this research project that I hope will be built upon in the future and make a difference in communities.