Urban Microclimate Analysis

Gabriela Martinez  
CUNY New York City College of Technology

Yuying Xian  
CUNY New York City College of Technology

How does access to this work benefit you? Let us know!

Follow this and additional works at: https://academicworks.cuny.edu/ny_pubs

Part of the Architectural Technology Commons, and the Environmental Design Commons

Recommended Citation

https://academicworks.cuny.edu/ny_pubs/349

This Poster is brought to you for free and open access by the New York City College of Technology at CUNY Academic Works. It has been accepted for inclusion in Publications and Research by an authorized administrator of CUNY Academic Works. For more information, please contact AcademicWorks@cuny.edu.
ABSTRACT:
This project is an exploration on building environmental performance. On it we will use different advanced simulation tools like DesignBuilder and Climate Consultant to analyze a recommended building. We are focusing on the Mamakating Visitor Center in Sullivan County, New York as our case study. Our first studies included analyzing the site conditions and elements such as wind, sun, climate, and weather. We studied the environment surrounding the building and its climate using the two software mentioned above. We found that during the winter, we should block the wind and get more sun in. However, in the summer, we should increase the wind and provide shadows to make it a comfortable place. From the site analysis we moved on to explore various materials that can be used in the walls and windows to simulate energy in order to reduce the amount of energy consumed by the building and make it more sustainable.

INTRODUCTION:
Climate Analysis is the most significant environmental factor architects and engineers need to take in consideration when designing a building. The study of the climate determines the most effective strategies for a building site. The climate at a site impacts the building design and many other aspects like the indoor temperature, human thermal comfort, and the calculation of the energy loads of a building.

HEAT TRANSFER:
The exterior walls of the building will experience heat transfer due to the exposure to the weather. On the other hand, the adiabatic walls towards the back of the building don’t experience any heat transfer due to their adjacency to the existing building.

REFERENCES:
King, Paul C. “Mamakating Visitor Center-Design Study.” New York City College of Technology, 2016.