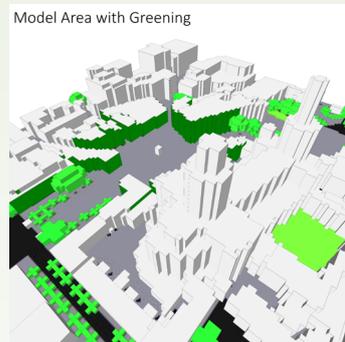


# Façade Greening

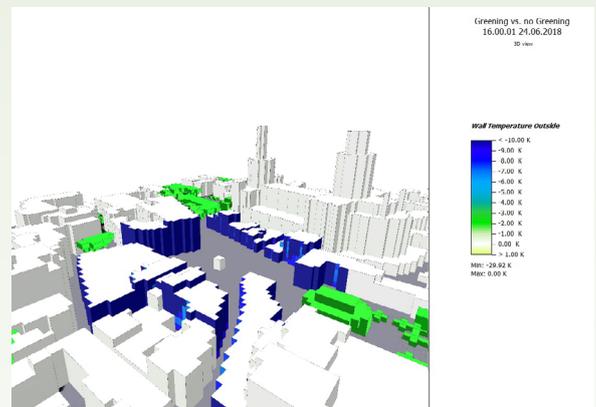
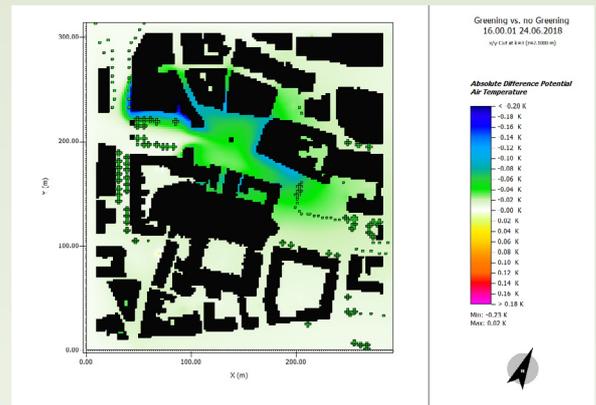
## ANALYSIS OBJECTIVE

ENVI-met provides a multitude of tools to simulate and analyze the effects of greening structures in your simulation area.

In an exemplary study, a 292 m x 314 m model area was simulated in order to visualize changes caused by a simple application of façade greening. The area depicts a typical scene of a European market square with an adjacent cathedral. Two simulations were run with an identical meteorological and structural setup, only differing in the integration of façade greening to the buildings surrounding the marketplace in the second simulation.



## SIMULATION RESULTS



## ANALYSIS

In this simple simulation example, the differences between an area with and without façade greening can be undars tandably pictured. On a warm summer day with air temperatures of up to 28 °C, the applied greening results in differences in both air temperature of the surrounding area and wall temperature of the buildings themselves. Due to the presence of plants and the thus higher evapotranspiration rates, the latent heat flux in the model area is overall higher. This leads to lower air temperatures, especially in the areas surrounding the buildings where the greening has been applied. For pedestrians on the market square or customers sitting outside in restaurants in front of those buildings, this may lead to a higher thermal comfort.

The inside of the buildings themselves can also profit from the application of greening on their façades: As no direct or diffuse radiation reaches the building wall, much lower temperatures can be observed. Hence, less heat is transferred to the inside of the building, making the inside much more comfortable especially in summer.

This study shows ENVI-met's capability to analyze the effects of façade greening and uses of this mitigation measure.

