



**CALIFORNIA STATE SCIENCE FAIR  
2007 PROJECT SUMMARY**

<b>Name(s)</b> <b>Kamal Kajouke</b>	<b>Project Number</b> <b>J1021</b>
<b>Project Title</b> <b>How Cool Is Green?</b>	
<b>Abstract</b> <b>Objectives/Goals</b> The purpose of this experiment is to investigate how structures called green roofs affect the temperature of urban heat islands. More specifically, it measures the difference in temperature resulting from using green roofs compare to traditional roofing material and the amount of green roofs, represented by plants, needed to cool down the heat island. My hypothesis is that the more vegetation is used on green roofs, the more the temperature will drop in the urban heat island. <b>Methods/Materials</b> To conduct this experiment, I used five plastic containers, one of which was empty as a control group. The other containers were as follow: one with black roofing material, one with plants only, one with grass only, and one with plants and grass. I placed light bulbs on top of the containers as a source of heat and used a thermocouple digital thermometer to take and record temperature readings at pre-determined times (9:00AM before turning on the light, 12:00PM after 3 hours of light, 3:00PM before turning off the light, and 6:00PM). I repeated the process for ten days. <b>Results</b> The overall results support my hypothesis. As the heat increased, all the test groups containing plants had a significantly lower temperature than the test group containing black roofing and the control group consisting of an empty container. Furthermore, the lowest temperature readings were taken from Container E, which had the most vegetation.	
<b>Summary Statement</b> My project tested how vegetation on rooftops can affect the temperature in an urban heat island.	
<b>Help Received</b> Mother helped record temperatures	