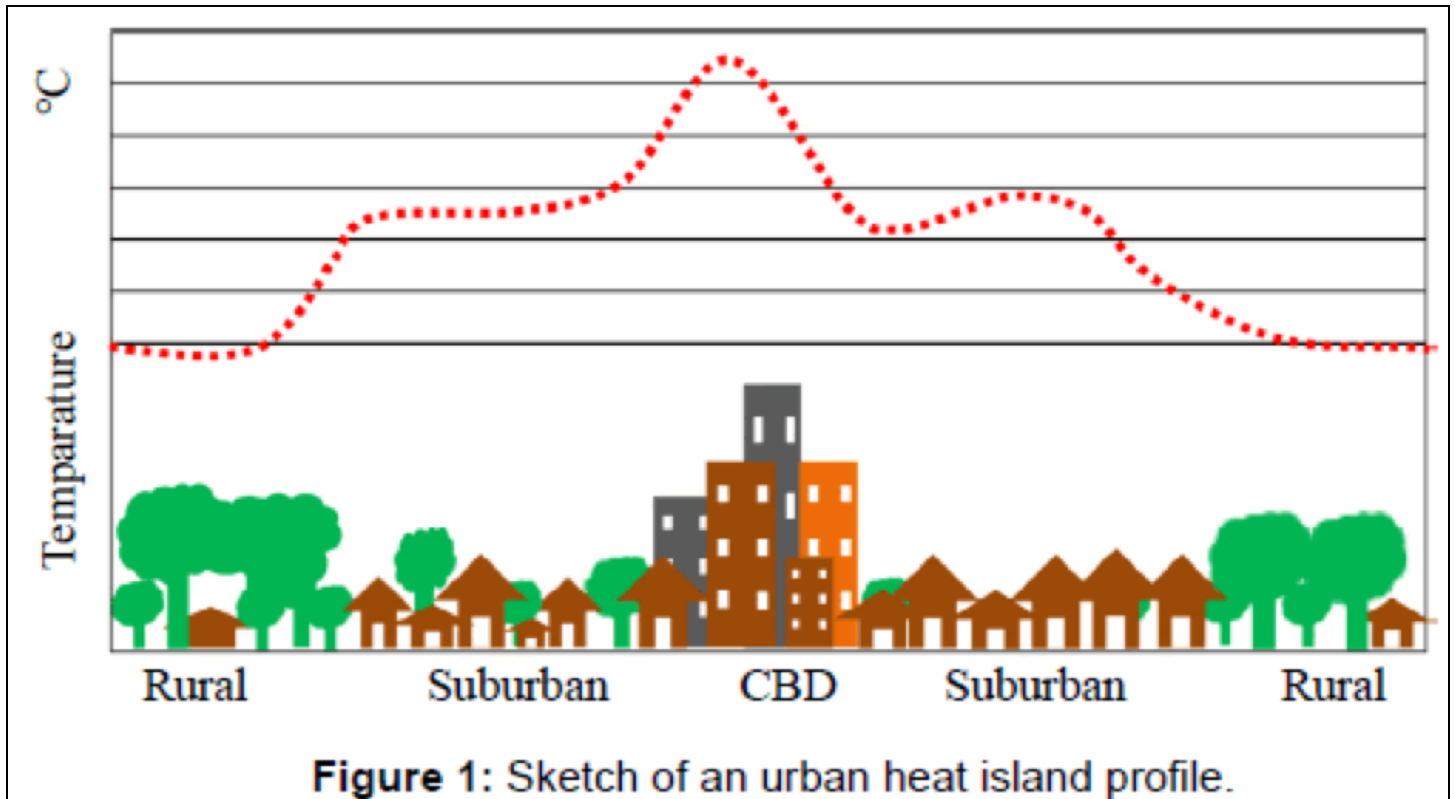


Lesson 1. Urban Microclimates



Task 1. Define a Microclimate

Task 2. Explain briefly the Urban Heat Island Effect making reference to the image above.

Task 3. Using the information on page 15 of the embedded PDF document on globalgeek, complete the key data to show the impact of the urban heat island effect.

Weather Element	Urban Heat Island Effect
Sunshine Duration	
Annual Mean Temperatures °C	
Total Precipitation	
Number of Rain Days	
Number of Days with Snow	
Amounts of Condensed Nuclei	

Task 4. You are now going to look at how and why the microclimate can be impacted using the Met Office's example of London within the PDF. Your task is to make a 50 word spider diagram summary of the causes and effects around each visual below.

Urban Temperature Impacts

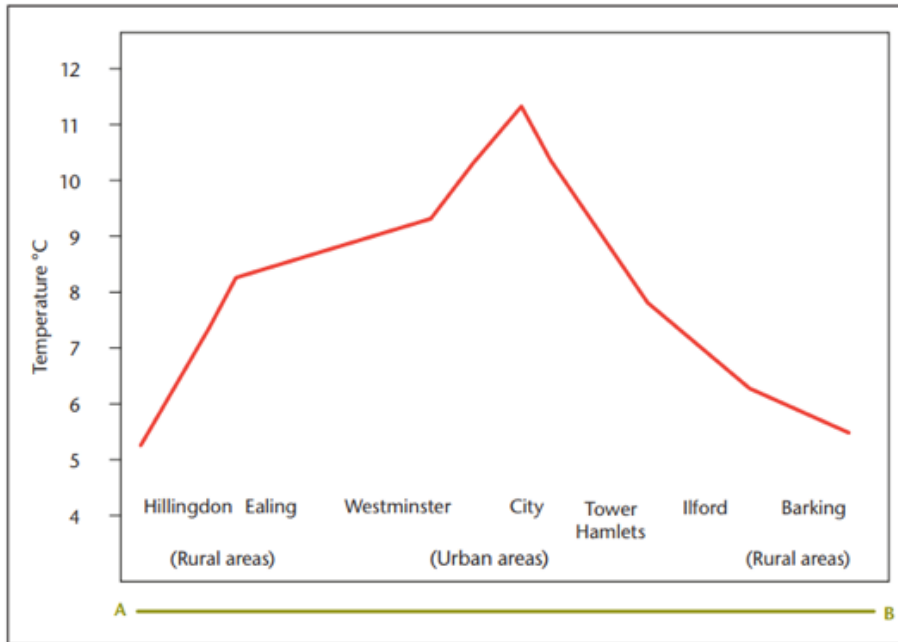


Figure 15. Temperature profile for London.

Urban Precipitation Impacts

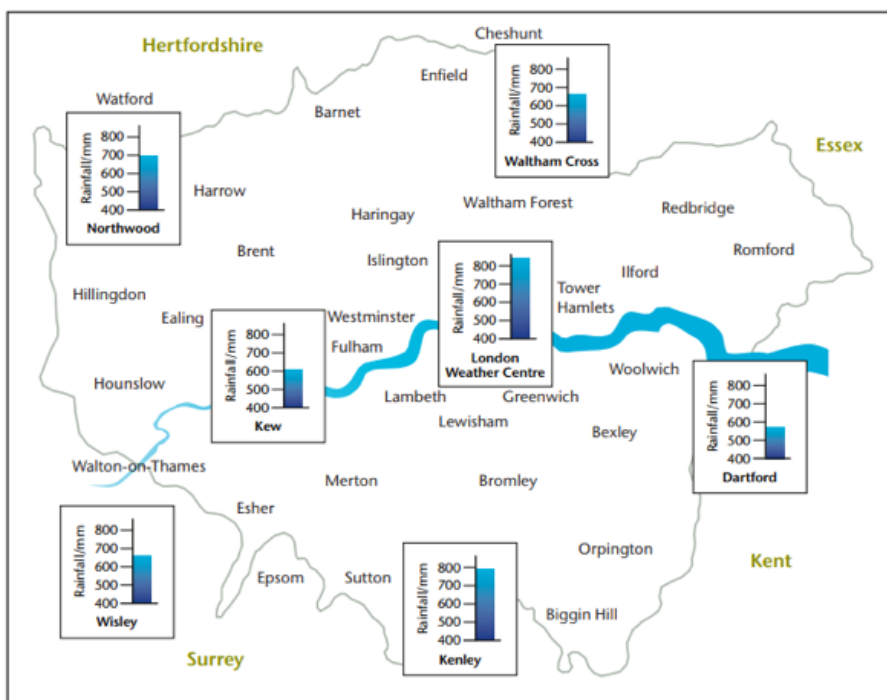


Figure 16. Mean annual rainfall totals for a number of stations around London.

Urban Smog Impacts

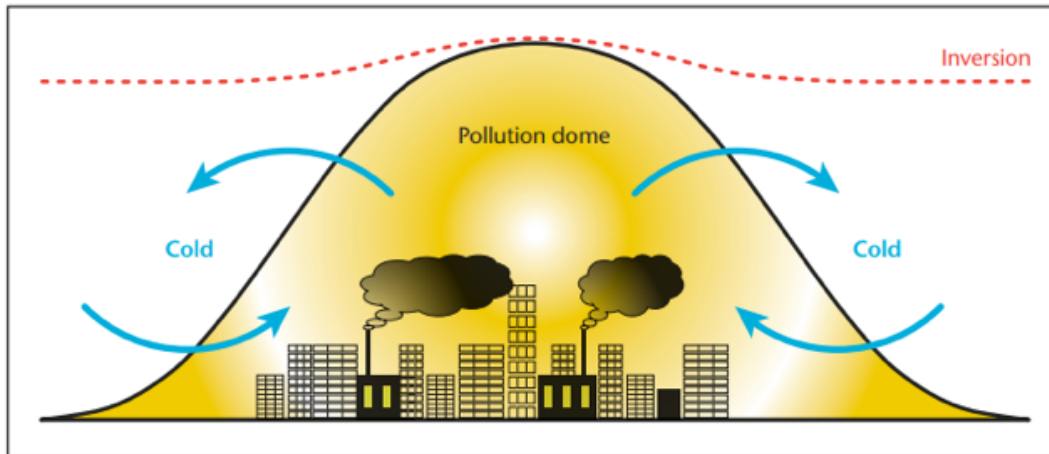


Figure 17. Pollution dome over a city.

[Check out this Met Office video](#) to learn about a temperature inversion. To put this into context, you may see this in winter in the mountain valleys where all the smoke from wood burning chimneys forms a layer at the bottom of the valley. [This photo](#) shows that process in action over an urban area.

Urban Wind Impacts

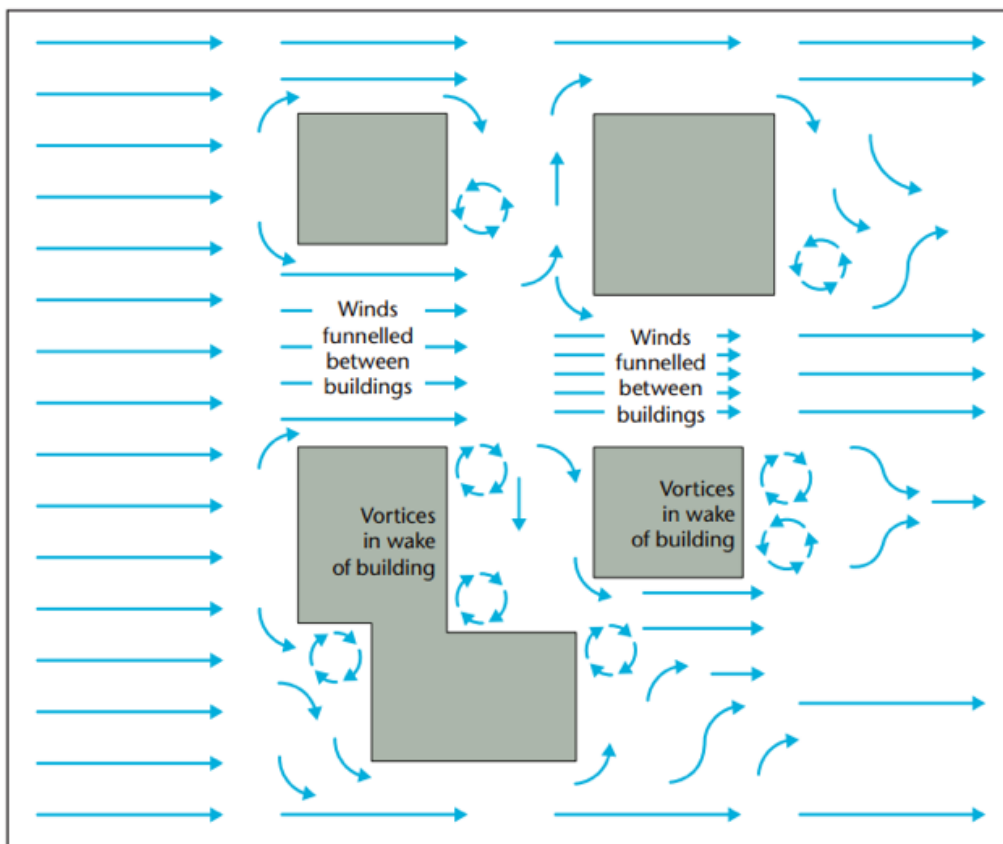


Figure 19. Winds around offices in a city showing the vortices created by the buildings.

Task 5. Check out this amazing 10 minute video to see how a design fault in a building in Leeds (UK) caused people to be blown off their feet!

<https://youtu.be/0tQQIHJ3z6w>

<https://www.bbc.com/news/uk-england-leeds-41608461>