Stamford School microclimate investigation.

The aim of this booklet is to complete an investigation into the microclimate around Stamford school and investigate where the following new features should be built at Stamford School.

A greenhouse for growing crops.

A Wind turbine.

A set of 10 solar panels which are 20m2.

An outdoor vegetable patch.

An outdoor classroom.

A quiet space.

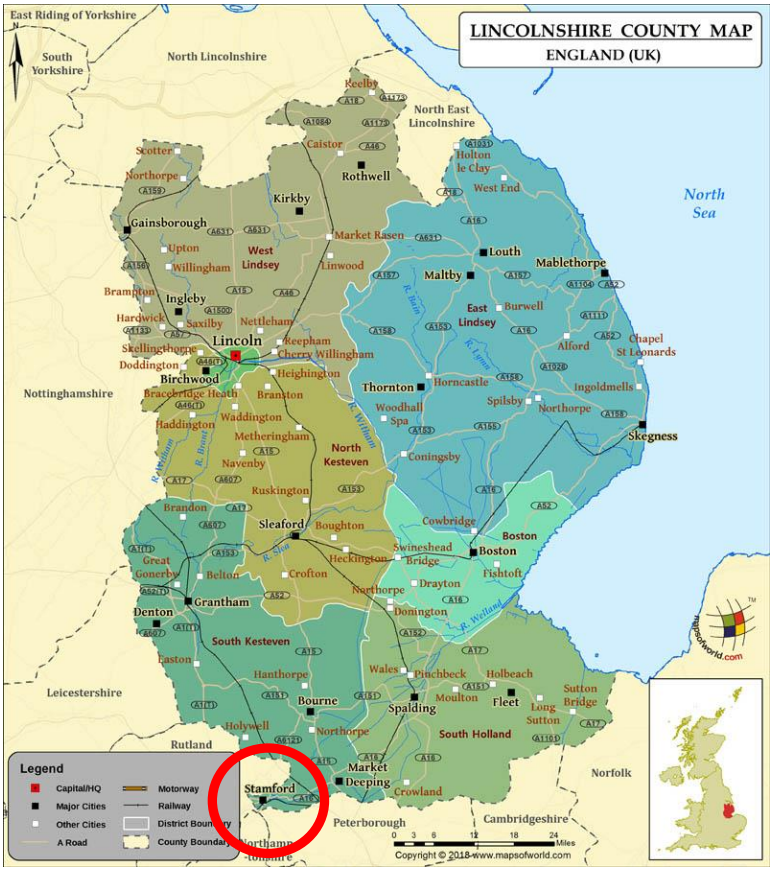
Name .

Section 1: Introduction

1: Looking at the maps of the UK and Lincolnshire describe the location of Stamford in the box below.

Fig 1: Map of UK

Fig 2: Map of Lincolnshire



2: What do we mean by the term climate and how is this different from the weather?

3: How is a microclimate different to climate?

2: Aim of the investigation.

We are going to investigate the microclimate of Stamford School and decide where the following will be built:

A greenhouse for growing crops.

A Wind turbine.

A set of 10 solar panels which are 20m2.

An outdoor vegetable patch.

An outdoor classroom.

A quiet space.

1: Explain why the new features of school are needed and how students and the environment will benefit from them.

A greenhouse for growing crops.

A Wind turbine.

A set of 10 solar panels which are 20m2.

An outdoor vegetable patch.

An outdoor classroom.

A quiet space.

Risk assessment.

1: What are the dangers that might occur while we collect the data? Fill in the table below.

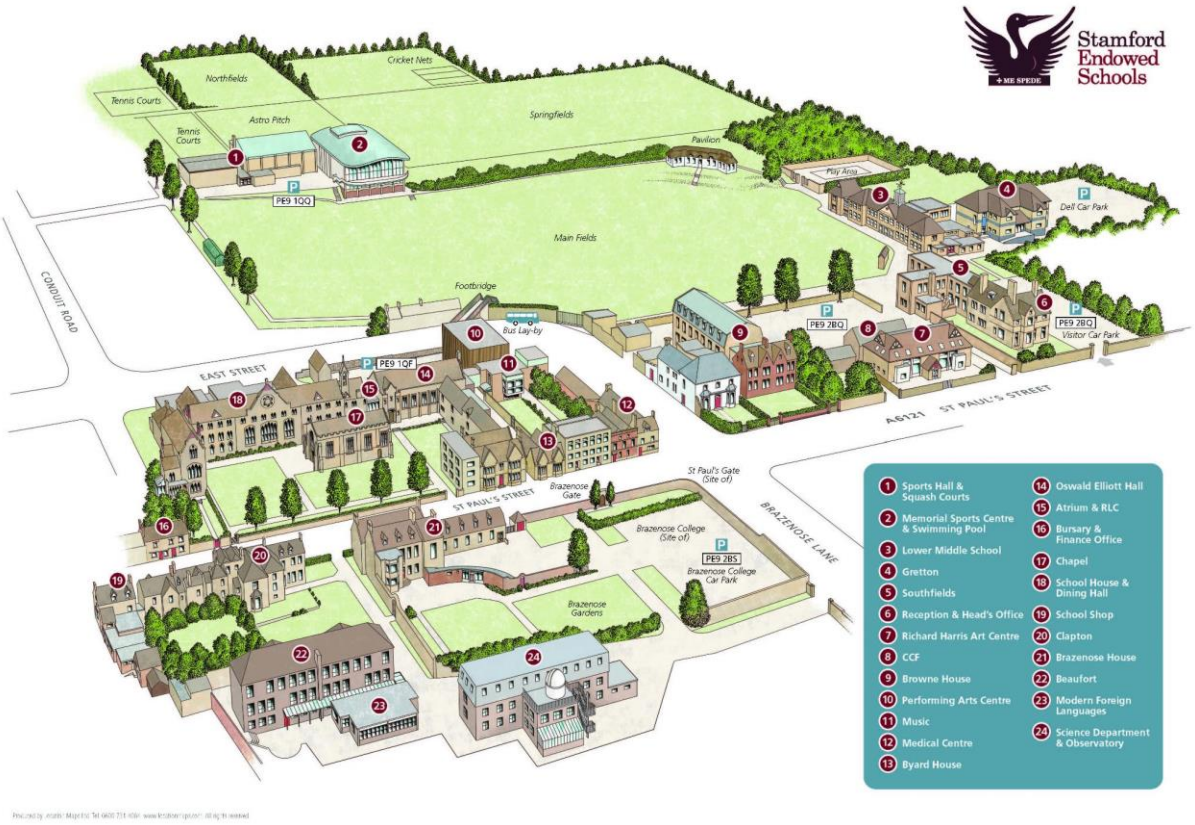
Hazard or Risk	Severity 1-5 (1 low, 5 high)	Likelihood of occurring (1 low, 5 high)	Precautions used to minimise risk and why they are used

Section 2: Method:

In this section you will explain how you collected your data.

1: What equipment did you need to collect the data and what did it show?

2: On the map highlight the different areas you looked at on the school site.



3: How did you collect your data. Complete the table below.

Method	What equipment did you use?	Describe a step by step guide how you carried out the method.	What did the data help show you in terms of the aims of the investigation?	Where there any issues collecting the data?
Temperature				
Sunlight				
Wind speed and direction				
Nois3				

Section 3: Results.

Complete the tables for your different results.

Location 1:

Temperature	
Sun light	
Wind speed and direction.	
Noise	
Humidity	

Location 2:

Temperature	
Sun light	
Wind speed and direction.	
Noise	
Humidity	

Location 3:

Temperature	
Sun light	
Wind speed and direction.	
Noise	
Humidity	

Location 4:

Temperature	
Sun light	
Wind speed and direction.	
Noise	
Humidity	

Location 5:

Temperature	
Sun light	
Wind speed and direction.	
Noise	
Humidity	

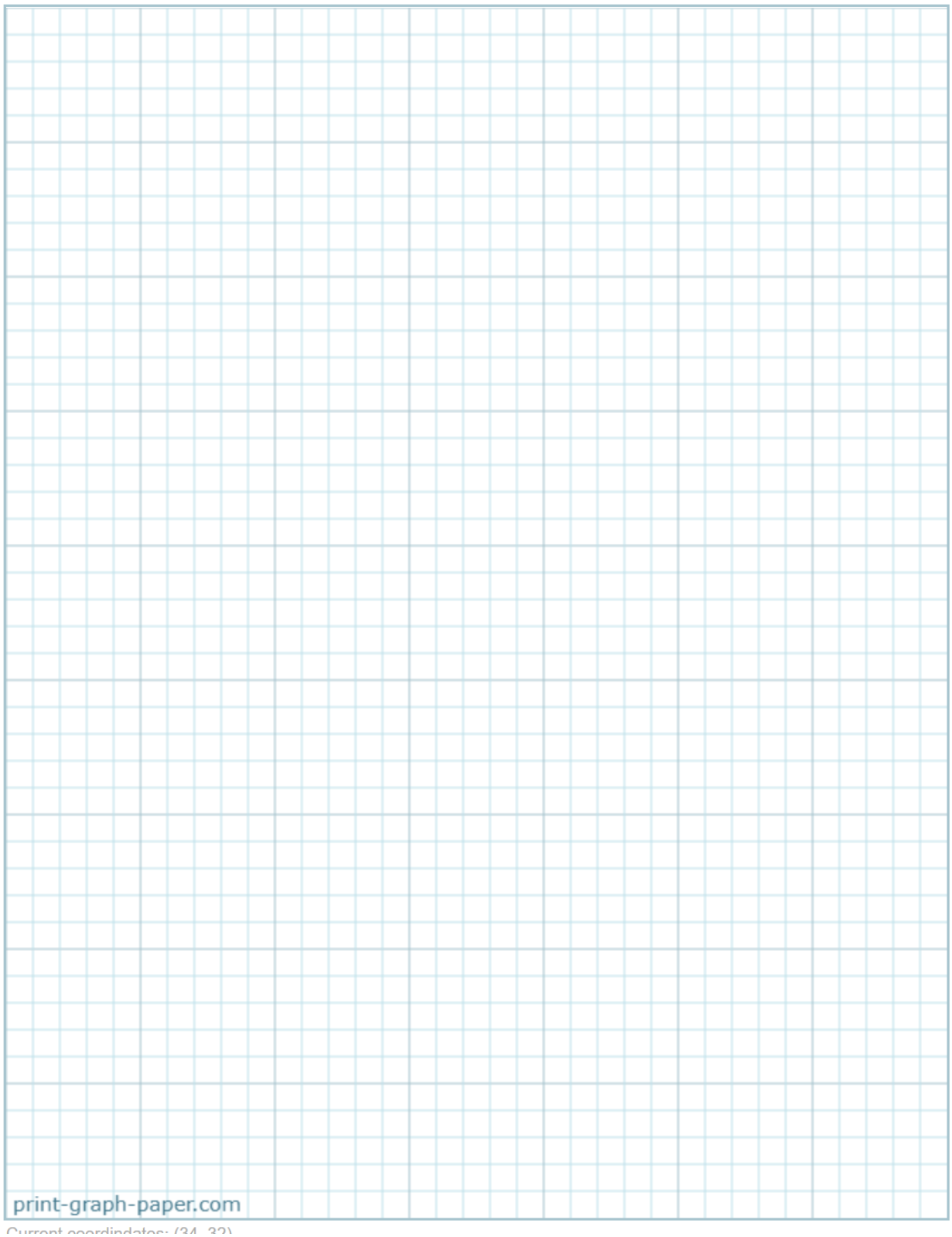
Location 6:

Temperature	
Sun light	
Wind speed and direction.	
Noise	
Humidity	

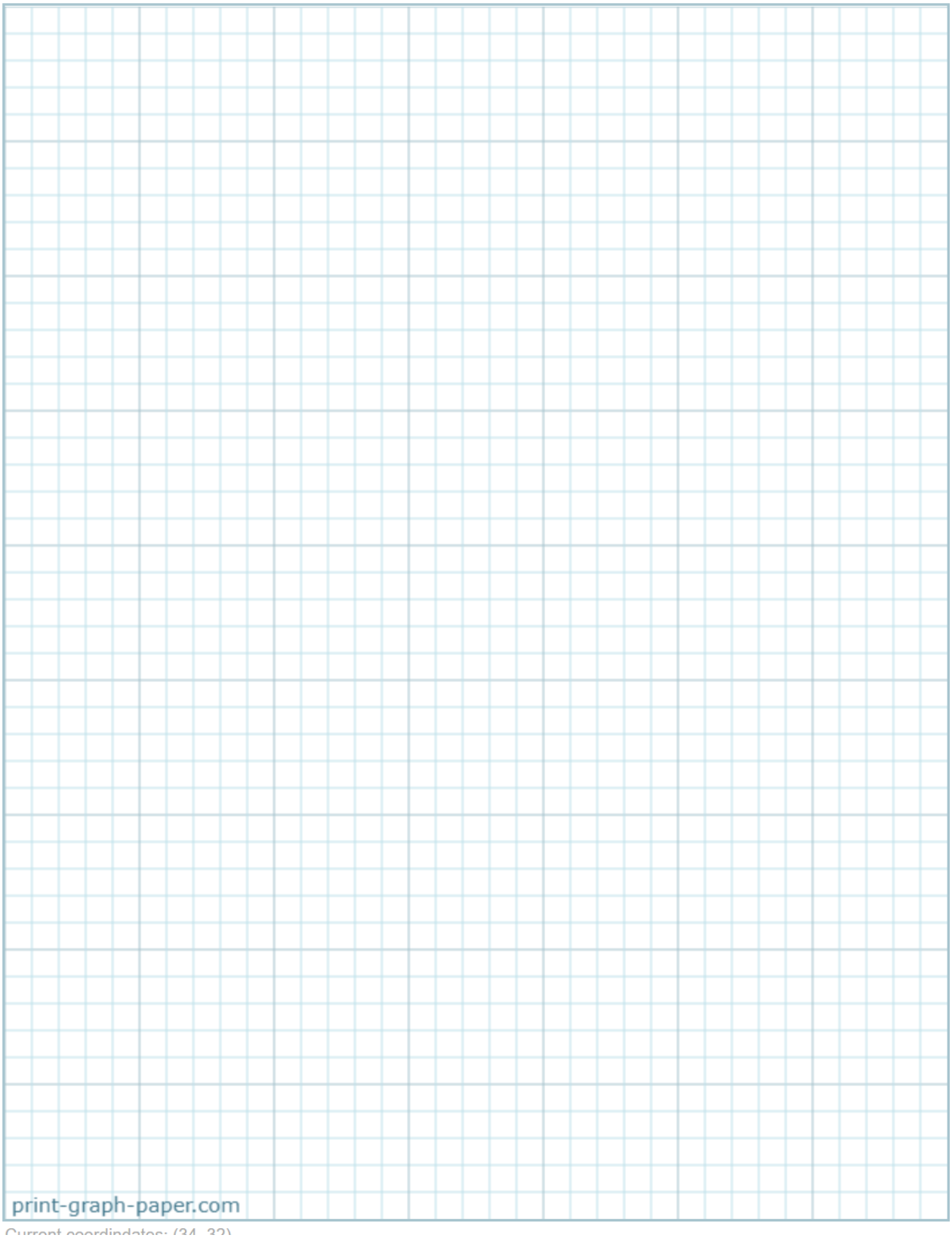
Section 4: Data presentation.

Complete the following graphs using your data.

1: Bar graph showing the temperatures at each location. Remember to label the different axis including units.

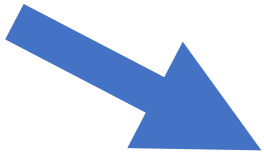


2:A line graph showing the noise at each location. Remember to label the different axis including units.



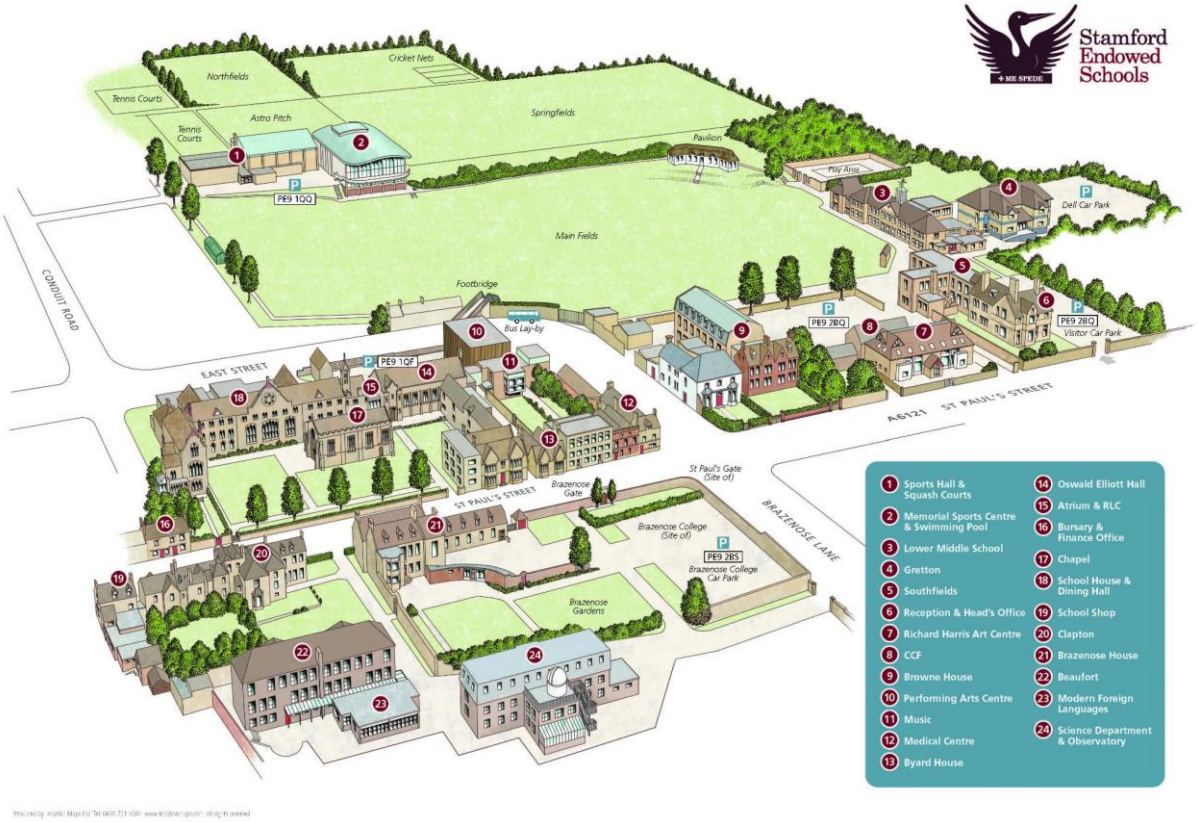
Complete a proportion symbol graph on the large A3 sheet showing the wind direction and speed / temperature / noise at each location on the map.

North west e.g 1cm = 10 mps



1 cm = 10 decibels

1 cm High = 10'c



Section 4: Data analysis:

1: From looking at the data where were the highest / lowest readings for the following aspects?

Variable:	Highest	Lowest	Difference	Difference as a %
Temperature				
Sun light				
Wind speed and direction.				
Noise				
Humidity				

2: Explain why you think these differences occurred? Think geographically and explain in full sentences using data from the table above.

Temperature:

Sun Light

Wind speed and direction:

Noise

Humidity:

3: Where there any results that you did not expect? We call these anomalous results. If so why do you think they occurred?

Section 5: Conclusions

From analysing the results locate on the map where you are going to build the following aspects:

A greenhouse for growing crops.

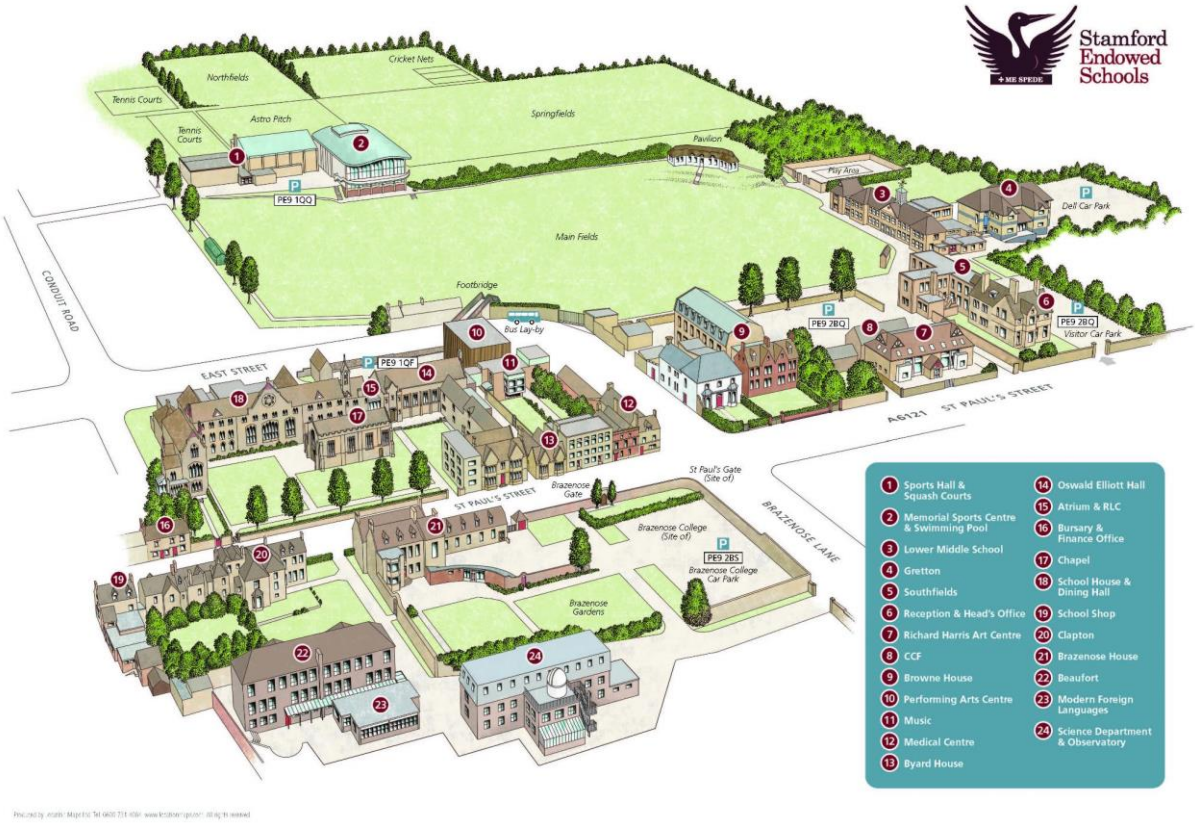
A Wind turbine.

A set of 10 solar panels which are 20m2.

An outdoor vegetable patch.

An outdoor classroom.

A quiet space.



1: In the table below, justify (give reasons why) using data from your results why you have selected the locations:

A greenhouse for growing crops.
A Wind turbine.
A set of 10 solar panels which are 20m2.
An outdoor vegetable patch.
An outdoor classroom.
A quiet space.

Section 6: Evaluation.

1: In the box below explain what aspects of the investigation went well.

2: Did anything go wrong with your investigation, if so, why did it go wrong? Were there any results you did not use or need?

3: Would you do anything differently if you were to do the investigation again? Is there any way you could improve it?

4: Are there any other aspects you think we need at school and why do you think we need them?