APPENDIX 1
EXTRACT FROM THE DFE `CLASS COOL TOOL'

`During periods of potential overheating including heatwaves, all unwanted heat gains into the building should be minimised during the day and night, to allow the building's internal air structure to cool down whenever possible. Naturally, a pre-requisite is that the heating system for the whole building should be turned off throughout the heatwave. Note the domestic hot water system should remain in operation as normal.

Building-related measures to lessen the impact of heatwaves fall into the following areas:

a) Reduction of casual gains – Keep the use of electric lighting to a minimum during heatwaves. All electrical equipment, including computers, monitors and printers should be completely switched off when not in use and should not be left in `standby mode'.
b) Reduction of solar gains – Awnings and other forms of external solar shading can be fitted to classrooms to stop the sun's heat reaching the space. These can be temporary for summer use or permanently installed. Solar shading should not restrict ventilation or window openings. Providing external shading prevents both the solar glare and the solar heat gain from entering the classroom whereas internal blinds allow the heat into the classroom and often prevent the windows from being opened fully for summertime ventilation.
c) Increase of daytime ventilation rate, if the external temperature is close to or less than internal temperatures – all windows, other natural ventilation devices and internal doors should be fully opened in rooms as permitted by health and safety regulations. This increases the capability of natural ventilation to remove heat and increases internal air speeds. However, fire and smoke control strategies should not be compromised by inappropriate opening of fire doors.
d) Increased night-time ventilation rate to cool the internal structure of the buiding and its contents – Windows, purpose-provided ventilation openings and internal doors should be left open overnight in a secure manner. If this is not possible for security reasons, it should be considered whether they can be opened in the morning, as early as possible before teaching begins.

As many as possible of these measures should be used. In addition, certain further temporary measures are available as a last resort, although these have energy, financial, carbon dioxide emission consequences, as well as their own localised thermal comfort and noise implications:

e) Increased air speeds using oscillating mechanical fans – such fans are themselves heat sources, so should be used cautiously.
f) Use of temporary local room air conditioners or dehumidifiers – exhaust heat from such units should be ducted directly outside the building using temporary ducts; free standing units without such ducts should not be used as their net effect is to heat the room further.

Occupant-and Management-Related Measures During Heatwaves

There are several occupant-and management-related measures which may be considered to mitigate the effects of heatwaves. As many as possible of these measures should be used. These include:

a) All staff and students should be encouraged to wear appropriate summer clothing

– Comfort in summer is improved by suitable summertime clothing. At the moment, many schools have the same uniform throughout the year.

b) Drinking water should be provided throughout the day.
c) General activity levels (and hence metabolic rate) should be reduced whenever practical. This could include, for example, cancelling sports lessons during periods of very high external temperature.
d) Exposure to direct sunlight should be minimised during periods of highest solar intensity, including during break times.
e) Earlier school start and finish times could be arranged to avoid teaching during periods of very high external temperature.
f) Use clasrooms or other spaces with less tendency to overheat in preference to those that do, and adjust the layout of teaching spaces to avoid direct solar exposure to occupants.'

The full Class Cool Tool is available at https://www.gov.uk/government/publications/building-bulletin-101-ventilation-for-school-buildings.