



King's Gate Heating and Lighting Guidance



This guide aims to inform readers of the heating and lighting systems in King's Gate, to give building users a greater understanding of their environment, how things work, and the level of local control.

Also available online at

<http://www.ncl.ac.uk/estates/environment/energy/resources.htm>



King's Gate Lighting Guidance

How the lighting works....

The lighting in office spaces, stairwells and corridors is fitted with Passive InfraRed (PIR) movement sensors. When people move, the sensor puts the lights on.

This lighting is zoned into the following areas, each of which will turn off after movement has ceased;

- Open plan floor lighting will turn off after 15 minutes,
- Meeting room lighting will turn off after 10 minutes,
- Stairwell lighting will turn off after 5 minutes.

The wireless remote controller can be used to temporarily turn the lighting on / off, or adjust the brightness. The remote controller is located in a dock on the wall in rooms (not open office space areas), usually by the room door, with a local guide for use (see page 3).

The small, bright lights are highly efficient LED lights, that remain on constantly, as emergency lighting.



If there are any problems with the lighting system, please call Estate Support Service Customer Services on 7171.

*More information on energy use;
ncl.ac.uk/saveit*



King's Gate Lighting Guidance

How the remote controller works...

There are two types of remote controller for the lighting systems;

- HC6 remote control offers temporary on/off override and level adjustment (large buttons).
- HC5 provides the same functions as the HC6, along with six different, pre-set lighting 'scenes' (small buttons). The 'scenes' are described on the instructions at each dock.

On each remote, a short press of the large buttons results in on / off, a long press results in changing brightness.



Each remote is stored
in a dock on the wall
(rooms only)
**Please return the remote to
its dock for others to use**



To use the remote, point it at the ceiling
detector and press your required
button (accurate aim is important).

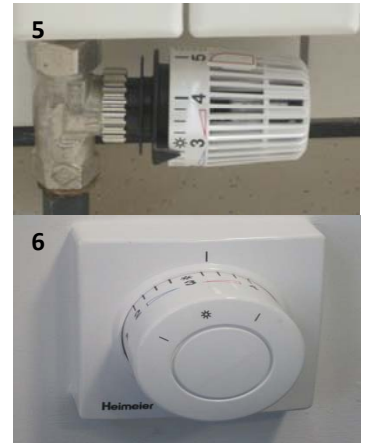




King's Gate Heating Guidance

How the heating works....

In addition to ventilation, heating is carried out by 'wet' systems; trench heating (fig. 1), atrium perimeter heating (fig. 2), radiators (figs. 3 & 4), and under floor heating on level 1 only.



The Building Management System (BMS) controls the heating, and is programmed to heat the water according to external temperatures (the colder it is outside, the hotter the water in the system).

Building users have some local control - some heating systems have thermostatic valves (figs. 5 & 6), allowing the temperature in a room to be altered.

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King's Gate Heating Guidance

How the ventilation works....

The ventilation systems supply 100% fresh air to the building, aiming to achieve 21°C by heating or cooling the air.

If there is not enough heat in the incoming fresh air, heaters increase the air temperature to the required level. If the building is too hot, incoming fresh air is cooled, and some heat is absorbed by the exposed concrete.

Fresh air is delivered to the building by circular floor diffusers (fig. 1). Fresh air intake by the building ducts can be seen at the rear of the building on level 5 (fig. 2).

The air on each floor is warmed (by people, PC's etc.), and rises to the top of the light wells where it is extracted from the building (fig. 3).



If there are any problems with the heating system, please call Estate Support Service Customer Services on 7171.

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King's Gate Heating Guidance

How the cooling works....

The cooling of King's Gate during the warmer months is achieved in two main ways:

1. The exposed concrete structure of the building absorbs heat during the day. At night, the building is ventilated, using cooler outside air. This cools the building fabric ready for the next day.
2. The incoming fresh air is cooled, using highly efficient evaporative cooling, by 2 - 3 °C below the external air temperature. If this is not enough, cooling units can assist. Both these systems together can achieve a fresh air delivery temperature of 5 – 6 °C below the external air temperature.

The building has been designed to limit periods of elevated temperatures to relatively short periods of time. The system is not designed to provide close control over the internal temperature and there will inevitably be some periods during the year when the internal temperature increases.

If there are any problems with the heating system, please call Estate Support Service Customer Services on 7171.

*More information on energy use;
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King's Gate

Heating and Lighting FAQ

1. Why has the building been too hot / too cold up to now?

- There is an issue with variable ventilation temperatures on each floor (too hot at the top / too cold at the bottom). The building designers / contractors will be making changes to systems to address this issue early in 2011, to include additional heating for the ground floor.
- As part of the above works, the cooling system will be re-commissioned in the summer as we require higher external temperatures in order to do so.
- The warm air curtains on the entrance doors were not operating and this allowed drafts from outside to flow through the building; These are now fully operational.
- The spring / autumn seasons are the most challenging times for a new building; we are still learning the characteristics of the building whilst dealing with widely different temperatures from one day to the next and even during the working day.
- We try to maintain a temperature of $21^{\circ}\text{C} \pm 2^{\circ}\text{C}$, but within this temperature range some individuals may feel "too hot" or "too cold". Everyone has different comfort levels.

2. Why are the lights on in the middle of the night?

The lights automatically come on when security do their regular check of the building at night, but will turn off again after movement has ceased. Movement in one corner of a zone turns all lighting on in that zone. In addition, the small lights are highly efficient LED lights, that remain on constantly, as emergency lighting.

3. What do I do if my heating / ventilation / cooling is not working?

Please report any defects to the Estate Support Service Customer Services team, by calling 7171, or using the online report form at <https://crilly.ncl.ac.uk:447/backtraqfm/>
The defect is put on the system for the relevant team to undertake the job.

4. Why is there exposed concrete in the building?

The concrete absorbs rising heat in the building, acting as a sustainable cooling system.

5. Why do we have an atrium?

The atrium acts as a passage for air in the building to rise to the top level for extraction.