

## The effectiveness and limitations of passive measures to reduce overheating



The longer the heatwave, the hotter houses become, even when taking exemplary passive measures to reduce overheating.

Research by Tom Bragg during a heatwave in July 2022, showed the effectiveness of taking all reasonable passive measures to reduce overheating in an Edwardian terraced house in Cambridge, but also the steady rise in temperature day-by-day.

These passive measures included:

- full external shading of all south facing windows,
- external anti heat blinds on all Velux windows
- windows all double or triple glazed
- solid wall insulation on most external walls
- no ventilation during the day, but purge ventilation at night

In July 2022 the heatwave only lasted 3 days. On the 3<sup>rd</sup> day, when external air temperatures reached about 40C, the ground floor rooms remained comfortable, peaking at 27C, although the attic became uncomfortable at 33C.

As heatwaves will become hotter and longer in duration, it's important that planning policy requires developers to design for this.

°C July 2022 Heatwave – Tom & Anne's Cambridge Mid-Terrace House with awnings

