

# The truth about heat pumps

- What is a heat pump?
- My 14 years with an Air Source Heat Pump (ASHP)
- Why heat pumps are necessary
- Q & A

## What is a heat pump?

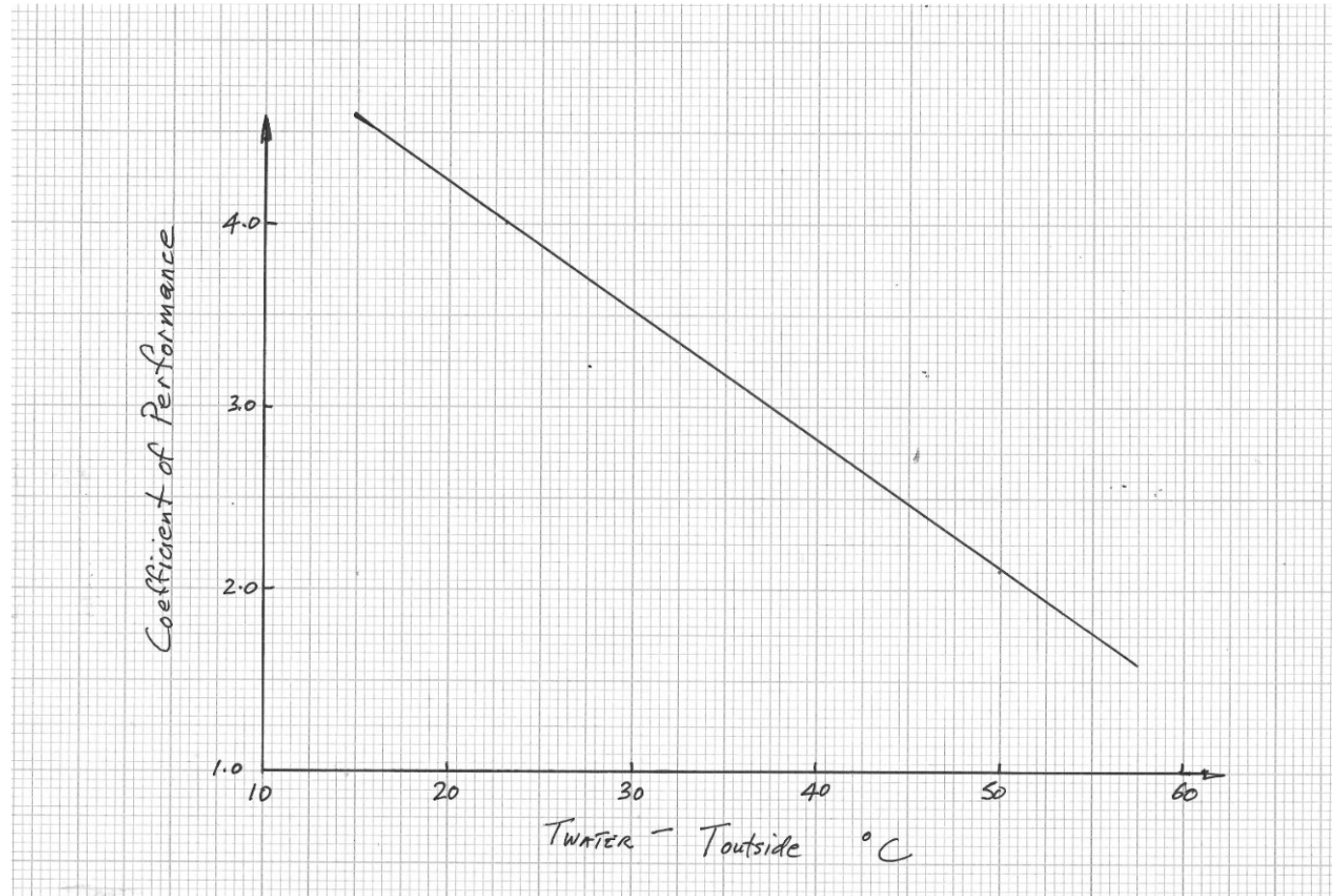
- A complex engineering device
- An established and reliable technology (in fridges, air-con, car heaters...)
- Pumps heat from cooler to hotter places – plenty of heat energy in the cool environments of air, water, ground
- Not just a simple energy converter, e.g., electric fire, gas boiler
- Needs some power to make it work
- The efficiency is huge, typically 300%, expressed as a Coefficient of Performance.



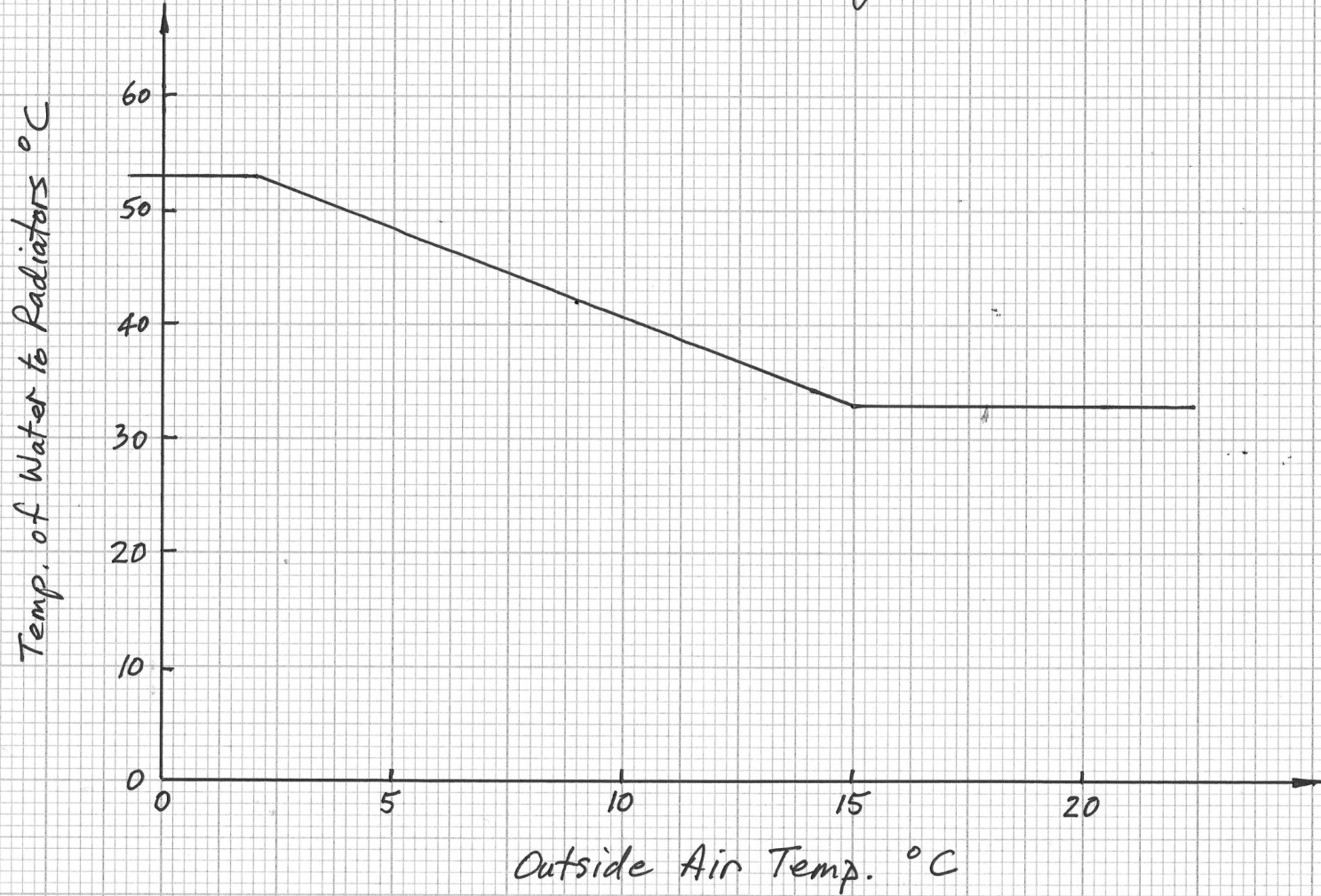
## My 14 years with an Air Source Heat Pump (ASHP)

- Not noisy - newer ones near silent
- Very reliable:
  - No routine maintenance - ours recently had its first fault after 13 years of continuous use
  - Service teams are good
- Cost: ours cost £12,000 in 2009

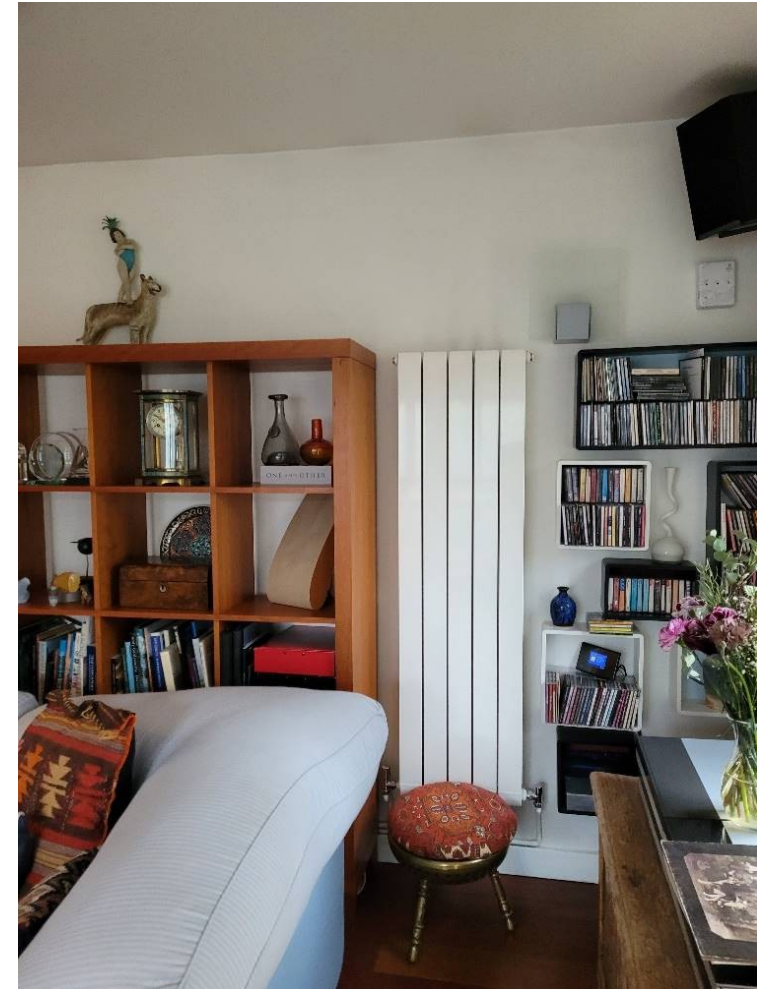
- Must run near continuously at lowest possible temperature, not in bursts, to be really efficient



Weather-Dependent Settings



- Needs generous radiators



- Good insulation and draught proofing even more important with a heat pump
- Over the year, our CoP is about 2.7, and our energy consumption is 52 kWh/m<sup>2</sup> - UK norm is 150 to 300 kWh/m<sup>2</sup>

## Why heat pumps are necessary:

- Climate change target – “net zero by 2050”
- Carbon Budget Delivery Plan
- Electrifying the energy system with wind, solar, nuclear, other... must happen
- Current energy use in UK: 40% in buildings; 30% in transport; 30% other – all these must go electric, and we need to use less
- 20 million houses already exist, most built to poor heat retention standards
- The simplest and cheapest way to solve this problem is to install ASHPs (the government gives grants of £5000 towards this)

**Any questions?**

