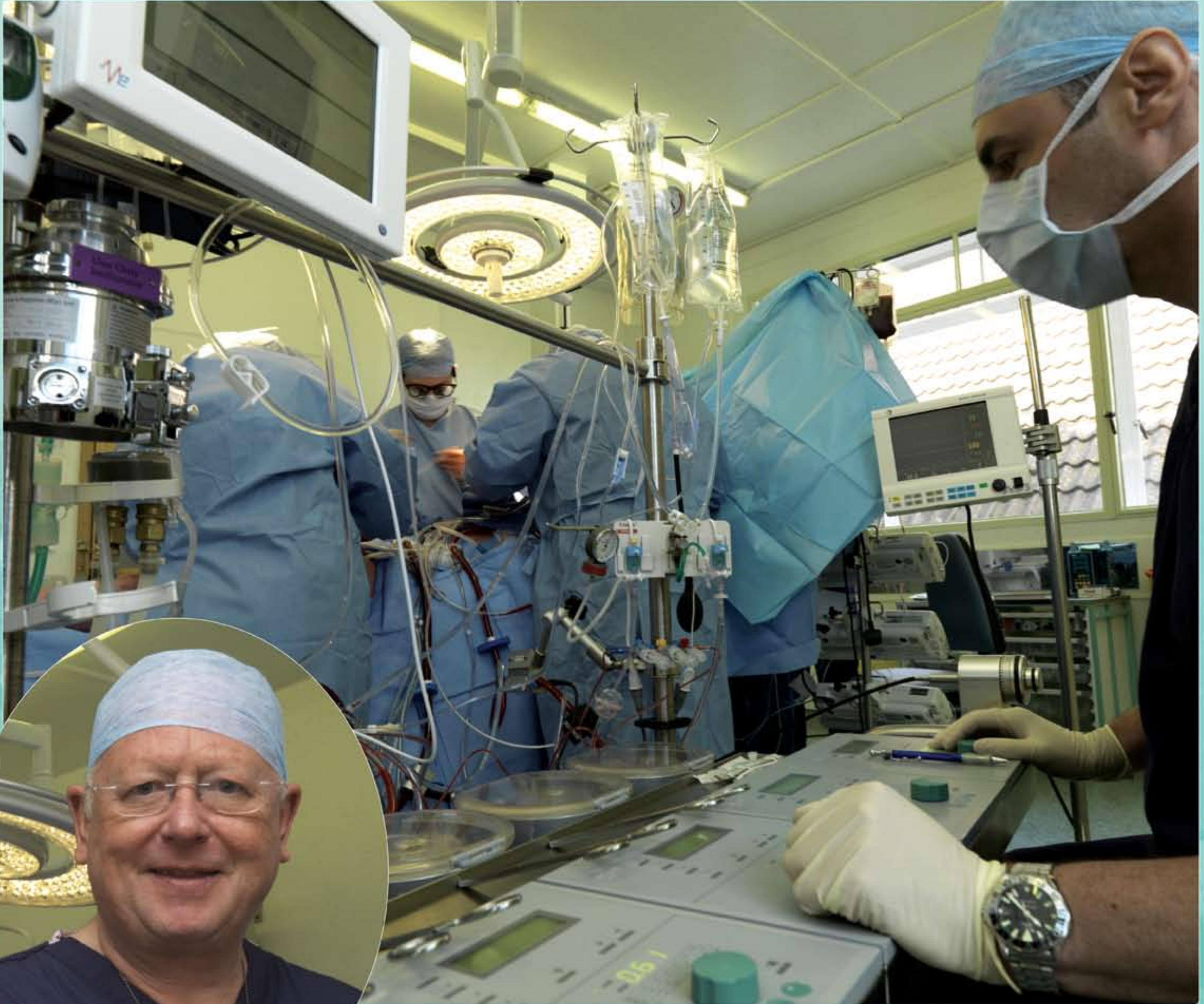


# Cardiac

SURGERY



**PROFESSOR JOHN WALLWORK**  
CARDIAC SURGEON  
PAPWORTH HOSPITAL

At the start of the NHS there was very little a surgeon could do for heart conditions. The issue was time – no patient could survive for more than a few minutes without a working blood supply and surgeons did what they could working around and in a beating heart.

Dealing with bullet and shrapnel injuries to the heart during World War II had given surgeons greater experience of working with the heart.

Surgeons learnt that cooling the body extends the time a patient can survive without blood supply before they

suffer brain damage. Cooling to 30C offered a short four-minute window to stop the heart and close defects – so surgeons had to be extremely skilled under pressure and only a limited range of conditions could be treated.

In the 1950s, the development of artificial circulation machines in the UK and US allowed the heart to be stopped and blood could be oxygenated and pumped separately. This meant longer operations were possible and led to developments like heart bypass and transplant.