

Ground Source Heat Pump Association Webinar Series 2020

New Programme for November and December!

Open loop design and construction series

Education and training

Regulations in the drilling industry

And more.....

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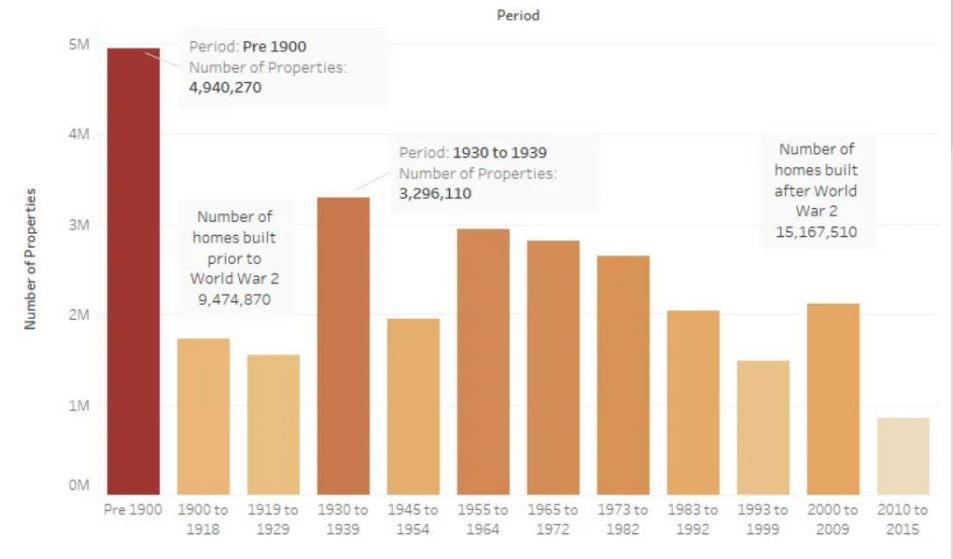
# Heat Pumps in Retrofit Situations

22<sup>nd</sup> October 2020

# Background

- ▶ A long history of building in the UK, 1,000s years +
- ▶ Many existing buildings will be with us for years to come
- ▶ New builds have improved building regs
  - ▶ Commercial & domestic
- ▶ Do we ignore existing buildings?
  - ▶ Or say they cannot use heat pumps?

Homes in England and Wales by construction period



# Background

- ▶ New builds - built to modern building regs, high standards of fabric and air tightness
- ▶ New new builds - future homes standard, maximum flow temperature 55° C, super low heat demand
- ▶ Cooling may be required
- ▶ Old buildings - not so!
  - ▶ 82/71° C flow/return
  - ▶ Small rads
  - ▶ Leaky windows and roofs
  - ▶ Small diameter pipework
  - ▶ Uninsulated pipework
  - ▶ Pumps
  - ▶ Hot water storage

# But....it is happening!

- ▶ Leisure centres, council offices, schools, colleges, offices, universities, hospitals, etc
- ▶ Individual homes
- ▶ Social housing

# Got an Old Building?? The Best Approach

- ▶ Is a holistic one
- ▶ Keeps an open mind
- ▶ Treat the building or site as a whole
- ▶ Treat each building individually
- ▶ Ask the occupants
- ▶ Change the operating regime



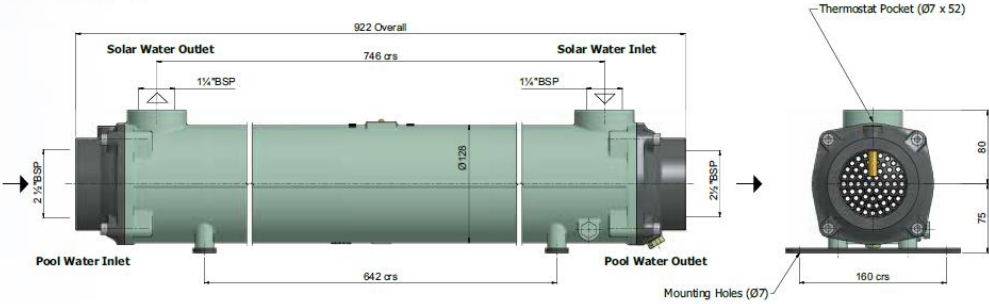
# Examples - radiators



# Examples – Pool Water Heat Exchanger



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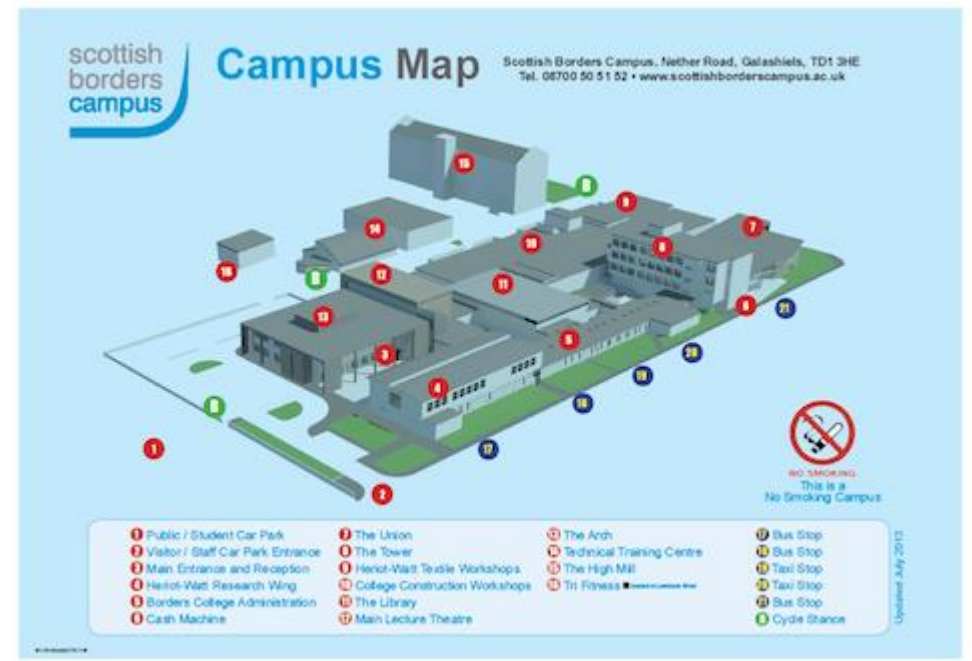




# Examples – Air Handlers and Hot Water



# Case Study Scottish Borders College



- ▶ 800kW WSHP
- ▶ New DHN
- ▶ 5 buildings connected
- ▶ Few emitters changed
- ▶ Gas boiler back up

## Other Considerations

- ▶ Space - replace in plant room or separate energy centre?
- ▶ Back up plant
- ▶ Low or high temperatures?
- ▶ Metering is a good idea
  - ▶ To monitor performance, temperatures, etc
- ▶ Baseline the occupant comfort and review afterwards

# Questions.....

and thank you  
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