



WILLMOTT DIXON

SINCE 1852

# Part O / Overheating Risk Mitigation

## Contractor's Perspective

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# MEP services strategy options ...balancing NZC and future climate priorities

adverse heat gains

passive cooling

active cooling

capex cost

efficiency

technical risk

opex cost

market impact

refrigerant risk

carbon impact

user issues



# Ashton Rise Development

- + 133 new homes
- + Social rental / private sale mix
- + 2 storey homes / 3 storey apartments
- + Heat pump / home performance study





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# Shared Loop GSHP





## Scope of heat pump research study

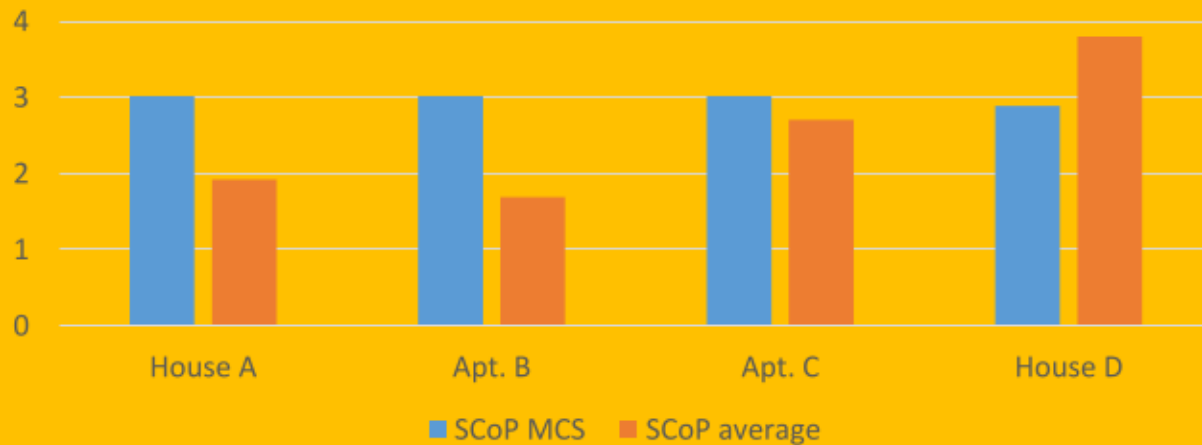
1. Evaluate the 'in use' (or real life) performance (CoP, carbon, cost) and compare against the design
2. Provide occupiers, the council and the manufacturer with useful feedback
3. Utilise the learning to support future applications of this system



**OVERALL GOAL: improved future performance & better project outcomes**



Design vs actual heat pump CoPs



12. How would you rate the thermal comfort of your home ?

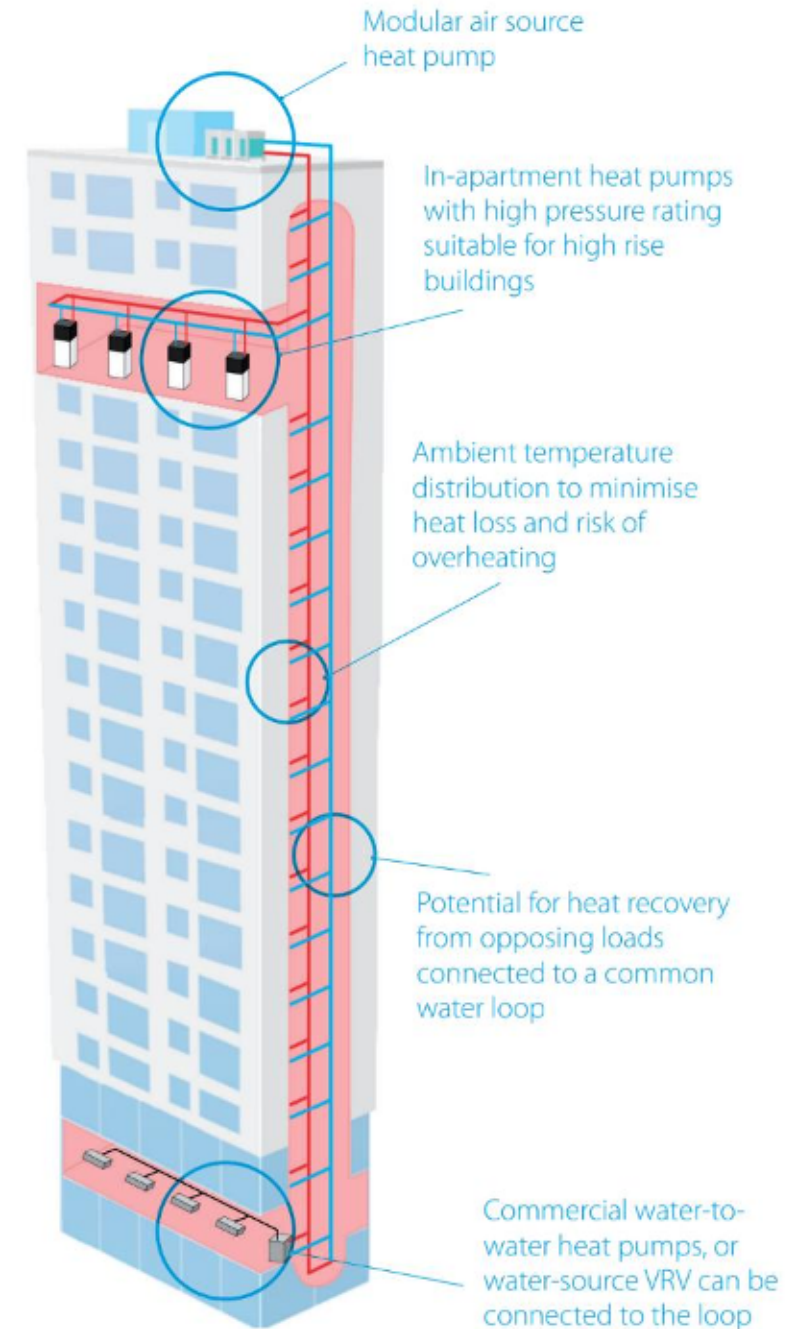


# London Project #1

- 112 new apartment homes
- Social rental / private sale mix
- Heat pump / home performance study planned



# Ambient Loop WSHP





## Original

- Communal plant - 40% Gas Boilers / 60% ASHP
- Ambient loop WSHP in apartments
- MVHR with cooling box
- Mix of rads / underfloor heating

## Revised

- Communal plant – 100% ASHP
- Ambient loop WSHP in apartments
- MVHR
- FCU heating / cooling delivery

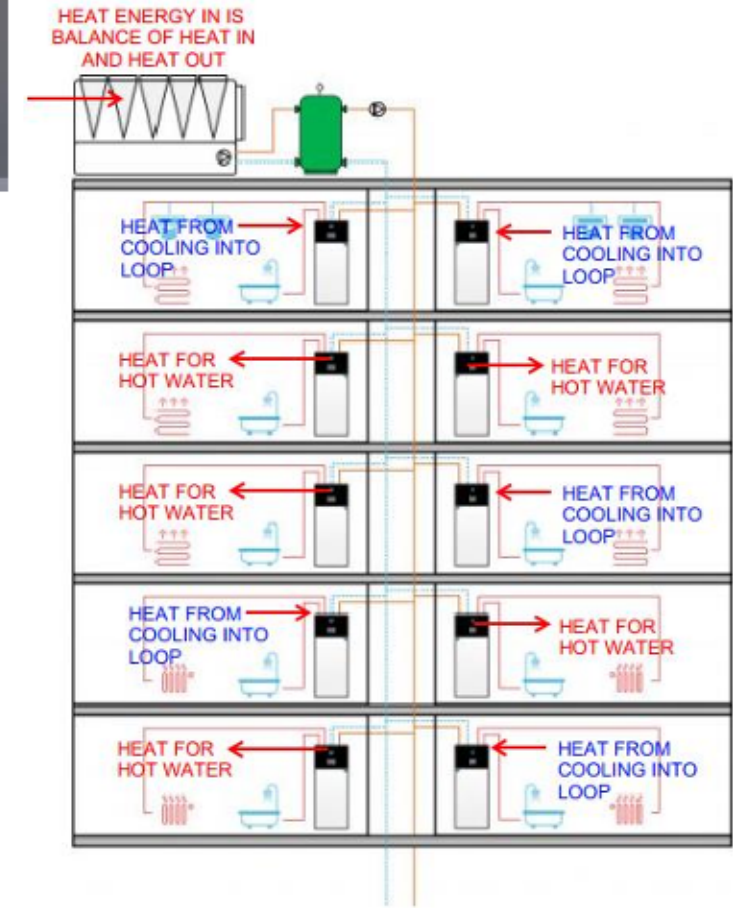


**Design  
evolution.....**



# Ambient Loop WSHP

- + Minimal adverse heat gains
- + Adapted to apartment spatial issues
- + Active cooling functionality
- Complexity and capex cost
- O&M / running costs unproven



## London Projects # 2 & 3

- **37 / 20 new apartment homes**
- **Social rental properties**
- **2 alternative heat pump / services strategies**
- **Heat pump / home performance study planned**





**Project #2 - Central ASHP  
+ ambient loop WSHP**

**Project #3 – Central ASHP  
+ high temp. loop / HIUs**



+ heat gains / cooling

- cost /complexity

- heat gains / no cooling

+ cost /complexity

**Actual performance ?**

**O&M cost comparison ?**



# Balancing NZC and future climate priorities

capex cost

adverse heat gains

efficiency

refrigerant risk

passive cooling

technical risk

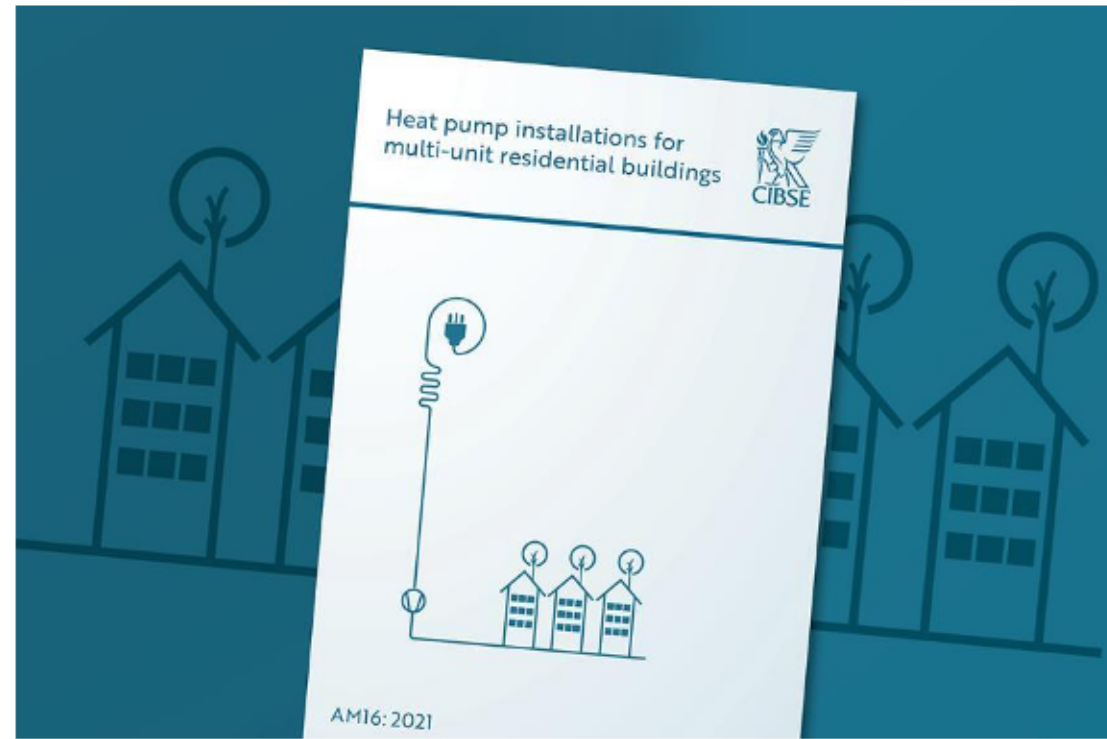
carbon impact

active cooling

opex cost

user issues

market impact





# Questions ?

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