

# Designing, manufacturing and maintaining homes for a lower R&M cost

**Nigel Banks**

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HOMES

# ilke Homes.

- > Knaresborough factory currently manufacturing 2 homes/day, with capacity of 2000 homes/year
- > Circa 650 employees (95% roles not requiring a trades background)
- > Factory automation project completed in May 2020
- > Newly opened regional offices in London, Birmingham and Bristol
- > Homes England deal, first government backed investment directly to a modular housing factory
- > First volumetric housing system to gain NHBC Accepts & BOPAS 100 year durability & maintenance assessment



## Delivered sites.

### South East

- 1 Swanley, Kent
- 2 Robert Street, Greenwich
- 3 Gallions Reach, London

### South West

- 4 Cattlemarket, Bridgwater
- 5 Coed Darcy, Neath

### Midlands

- 6 Redwood Crescent, Beeston
- 7 Brookvale, Derbyshire
- 8 Williams Lane, Newark
- 9 Victoria Ground, Stoke
- 10 Gedling, Nottingham
- 11 Rosemary Avenue, Mansfield
- 12 Wellesborne, Warwickshire

### North

- 13 Askern, Doncaster
- 14 Heaton Court, Chesterfield
- 15 Victory Road, Bolton
- 16 Wykebeck, Leeds
- 17 Brooklands, Leeds
- 18 Milton Road, Wakefield
- 19 Carr Lodge, Doncaster
- 20 Rockfield Road, Anfield
- 21 Cawthorn Avenue, Harrogate
- 22 Greenway, Speke, Liverpool
- 23 Central Avenue, Newton Aycliffe
- 24 Central Park, Darlington
- 25 Gateshead Innovation Village, Gateshead
- 26 Somerset Place, Newcastle
- 27 Royal Drive, Egremont
- 28 Hawthorne Avenue, Hull
- 29 Granby, Doncaster
- 30 Newholm Court, Hartlepool
- 31 Shorrock Lane, Blackburn

## Pre-operational and operational sites.

### South East

- 32 Stanford-le-Hope, Essex
- 33 Tattenhoe Phase 3, Milton Keynes, Bucks
- 34 Station Road, Bordon, Hampshire
- 35 Burgess Hill, West Sussex
- 36 Southend-on-Sea, Essex
- 37 Hastings, East Sussex

### South West

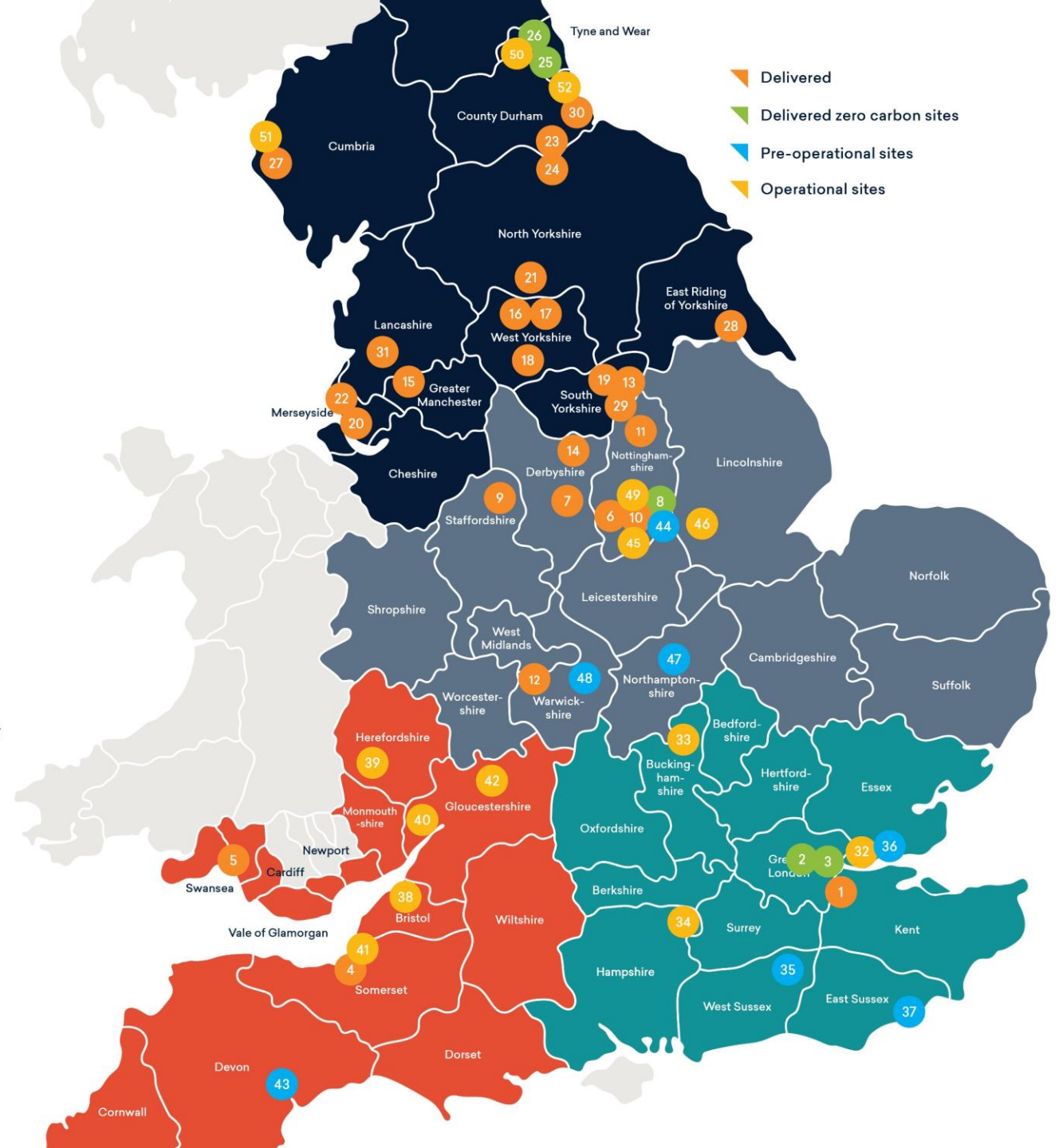
- 38 Blackberry Hill, Bristol
- 39 Holmer, Hereford
- 40 Drybrook, Forest of Dean
- 41 Brue Farm, Burnham-on-Sea
- 42 Green Gables, Evesham
- 43 Exeter, Devon

### Midlands

- 44 Thane Road, Nottingham (Boots)
- 45 Beeston Goods Yard, Nottingham
- 46 Dysart Road, Grantham
- 47 Shirley Road, Rushden
- 48 Southam, Warwickshire
- 49 Arnold, Nottingham

### North

- 50 St Anthony's Road, Newcastle
- 51 Meadow Road, Whitehaven
- 52 Prestbury Road, Sunderland, Tyne and Wear



# Continuous Improvement

## 2017: Gallions Reach, London.



# Designing & Manufacturing for lower maintenance

- Heat Pump MVHR (electronic filter) to dMEV
- Galvanised Steel Frame (S450, G600/275)
- All pipework joints & manifolds accessible
- Full BIM model (incl. all wiring and plumbing)
- Quality controlled manufacturing process



# Continuous Improvement

2018: Gateshead Innovation Village - Home Group/Engie.

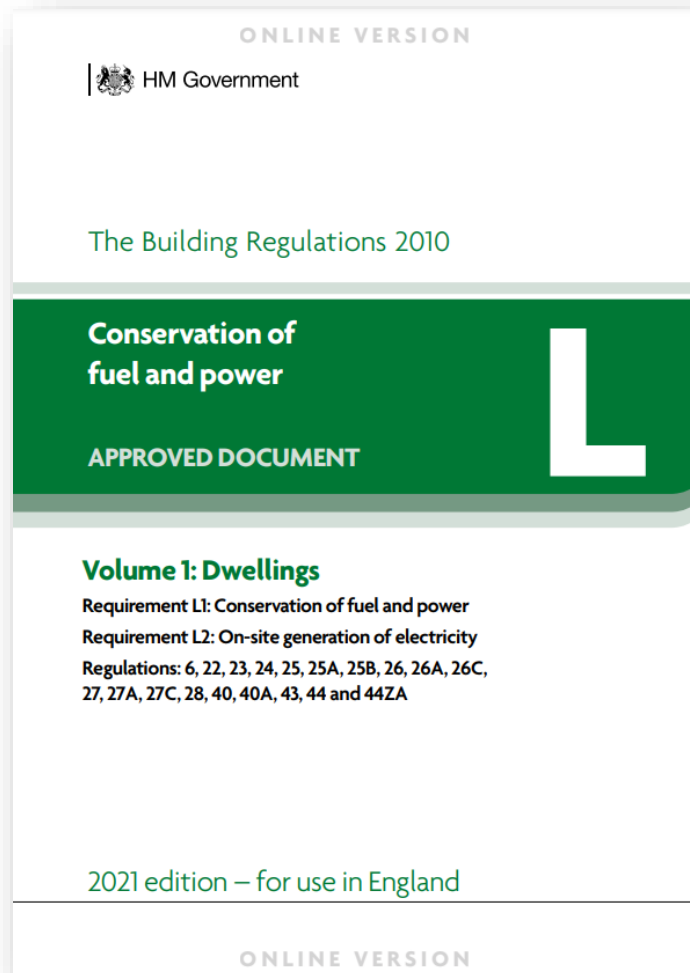


# Lower maintenance zero carbon homes

- > No gas boiler – Trialled both storage heaters with better insulation and Air Source Heat Pumps (ASHPs)
- > Aimed for no inverter on solar PV – DC direct into SunAmp store
- > dMEV – Single fan, no filters
- > Automation of external walls



# New Part L 2022/23 & Future Homes Standard 2025/26



- **Part L 2022:** *In effect 15 June 22 (with max 1 year, per plot, transition)*
  - **New Primary Energy Target**
  - **31% CO<sub>2</sub> target increase** (using SAP10.3 carbon factors)
  - **Updated Fabric (FEES) target**
  - **Minimum U-values/efficiencies**
  - **55° Flow temperatures**
  - **Overheating limits/modelling**
- **Future Homes Standard:** *Consult 2023, legislate 2024, into effect 2025*
  - **75-80% CO<sub>2</sub> target increase**
  - **Increased Fabric spec** (to be finalised)
  - **No fossil fuel heating** (such as gas boilers)
  - **No retrofit to become zero carbon** (as electricity grid fully decarbonises)



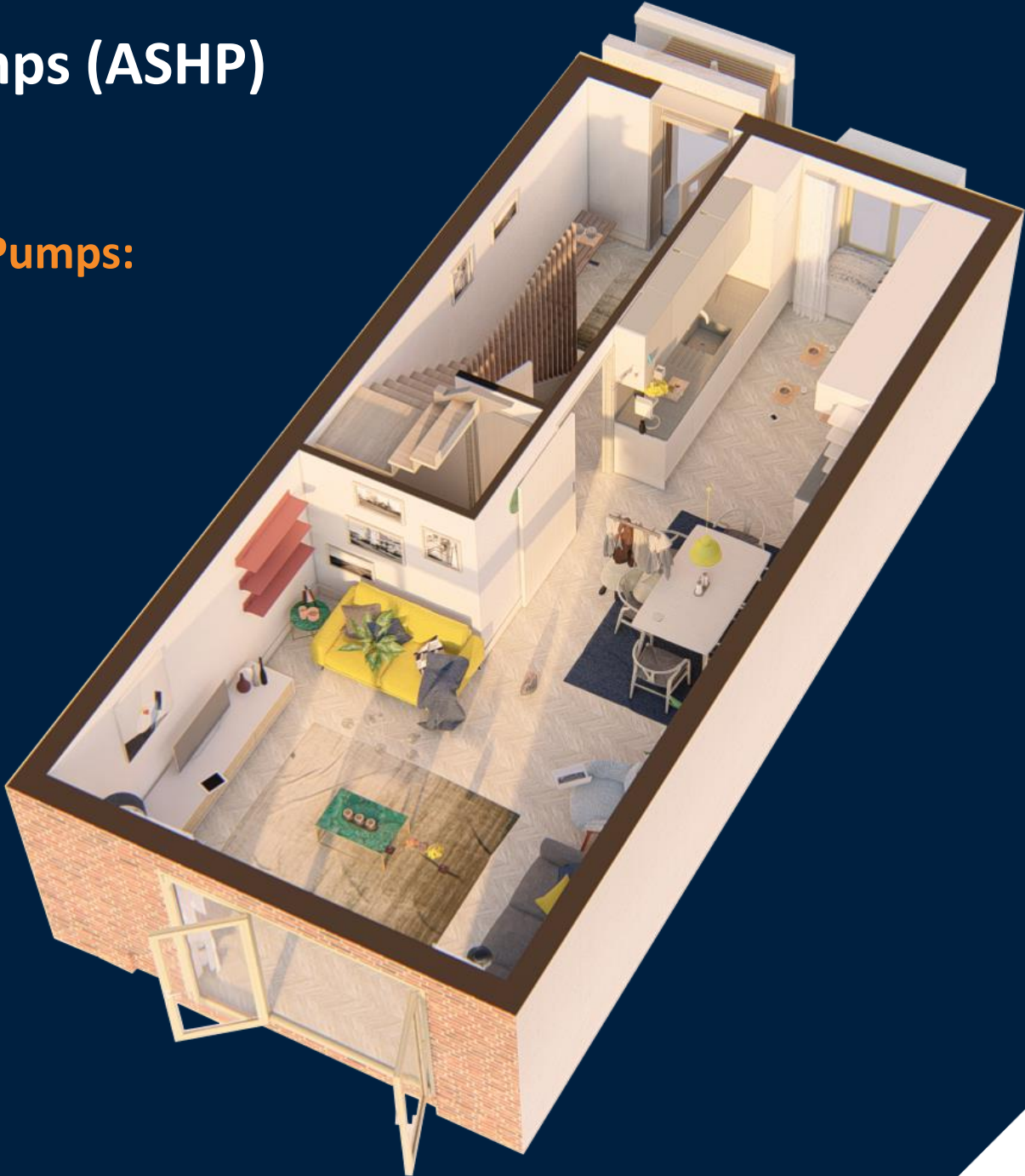
# Continuous Improvement

2020: Greenwich, London - Royal Borough Greenwich/Engie.



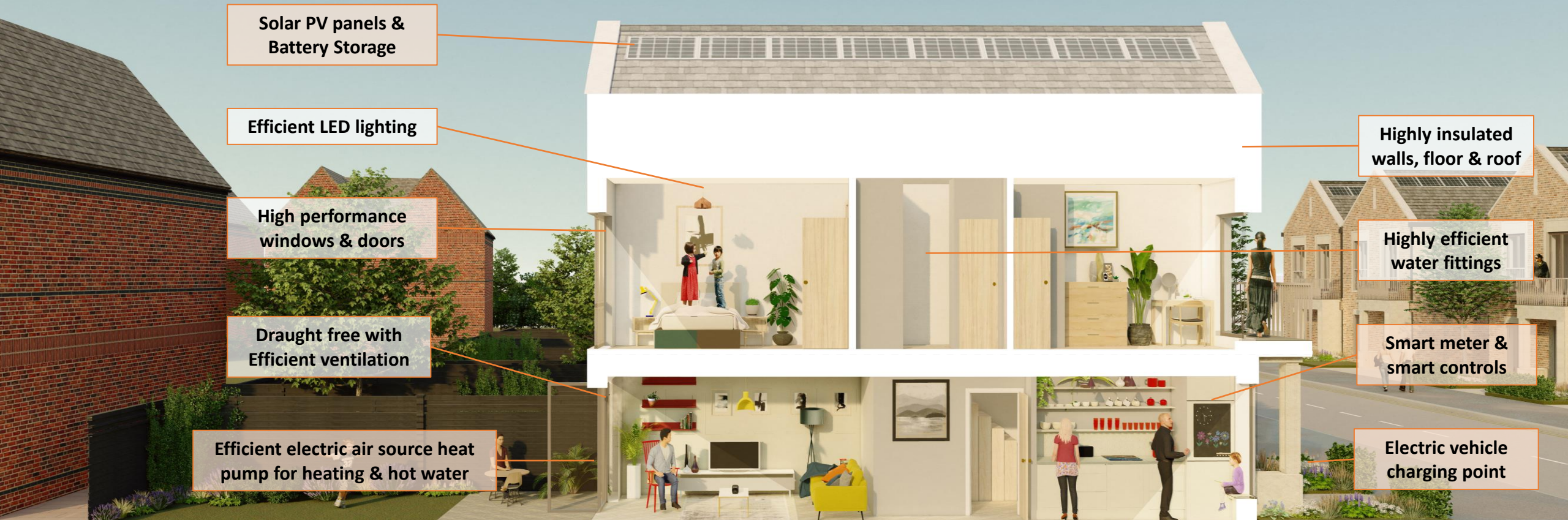
# Air Source Heat Pumps (ASHP)

Designing for Heat Pumps:



# Features of an *ilke ZERO* home:

ilke Homes can deliver net zero carbon living in our homes through the high performing external building fabric, water efficiency and LED lighting found in all our homes, in combination with, the introduction of a highly efficient air source heat pump and solar PV panels. Smart metering and controls can be used to better understand and optimise your comfort and energy use. Integrated electric vehicle charging points enable customers to complete their journey to an “all electric”, more sustainable lifestyle.



**Solar PV panels & Battery Storage**

**Efficient LED lighting**

**High performance windows & doors**

**Draught free with Efficient ventilation**

**Efficient electric air source heat pump for heating & hot water**

**Highly insulated walls, floor & roof**

**Highly efficient water fittings**

**Smart meter & smart controls**

**Electric vehicle charging point**

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