APSE Housing, Construction and Building Maintenance Advisory Group – Southern Region

19th November 2019

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BigChange – Corporate Account Director

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Introducing BigChange…

- UK Company based in Leeds
- Established in 2012
- 20+ years experience in Mobile Workforce Management
- 25,000+ Subscribers
- Multi-Award winning technology

KPMG Best British Mobile Startup Mobile World Congress 2017

FUTURE FIFTY From TECH CITY

50 Technology Fast 50 2017 UK WINNER Deloitte.

CEO & Founder

BigChange

Managing a Paperless Environment Requires

- Good visual of Workload
- Live status of all jobs
- Automatically recurring jobs
- Easy to use software for Trades
  - Fool proof processes
  - Wide choice of Hardware
- Automated processes e.g.
  - Alerting
  - Production of Paperwork e.g. Landlord Gas safety record

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KPMG Best British Mobile Startup Mobile World Congress 2017

FUTURE FIFTY From TECH CITY

50 Technology Fast 50 2017 UK WINNER Deloitte.

Ensuring Compliance and Health & Safety

- Mandatory work Processes
- Automatically enforced completion of risk assessments Before starting the job
- Automatic instant alerting of any risks identified
- Mandatory questions that must be answered.
- Clear and precise questions ensure clear and precise answers

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Delivering Consistently and First Time

- No choice in not completing the process in full
- Keep the Customer well informed (automatically)
- Recurring Jobs ensure compliance to routine jobs
- The power of Photos – draw on, date/time/location stamped (a picture paints a thousand words!)
- Stock Management to ensure sufficient parts to complete the job first time

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Cost Control and Productivity

- Automatic alerting for anything that doesn't go to plan (no searching for the needle in the haystack)
- Live management and efficiency of Trades
- Automation in back office including job creation.
- No Filing! Scanning or Storing with Instant Retrieval of job details with relating worksheets and photos etc.
- Stock Accountability on jobs

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Demonstration

- Live demonstration – Eli Sufrin

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1 BILLION MILES
8 MILLION JOBS
60 SECTORS
JOBWATCH IS READY TO GO, WHATEVER BUSINESS YOU'RE IN
We're transforming businesses of all sizes throughout the UK and the rest of the world. We work with over 60 sectors using one product configured to create sector-specific versions of JobWatch, complete with instant customisation and experts who understand your industry.
And it's a difference that really does go a long way.
Jobs
BigChange

Using **Software** to improve **workforce productivity**

5 IN ONE

1. BACK OFFICE / CRM
2. JOB SCHEDULING
3. MOBILE WORKFORCE APP
4. VEHICLE AND ASSET TRACKING
5. ON-DEMAND BOOKING APP

BACK OFFICE CRM + JOB SCHEDULING + MOBILE WORKFORCE APP + VEHICLE AND ASSET TRACKING + ON-DEMAND BOOKING APP

THANK YOU.
ANY QUESTIONS?

APSE
Housing, Construction & Building Maintenance Group

MANAGING MONEY BETTER

19th November 2019

Cliff Duff – Durham County Council

Altogether better

Durham County Council

1 2 5 4

£1, 2 5 4

Ofgem (May 2019)

Local Context

National	Estimated number of households	Estimated number of fuel poor households	Estimated % of households in fuel poverty
England	22,657,000	2,492,270	11.1%

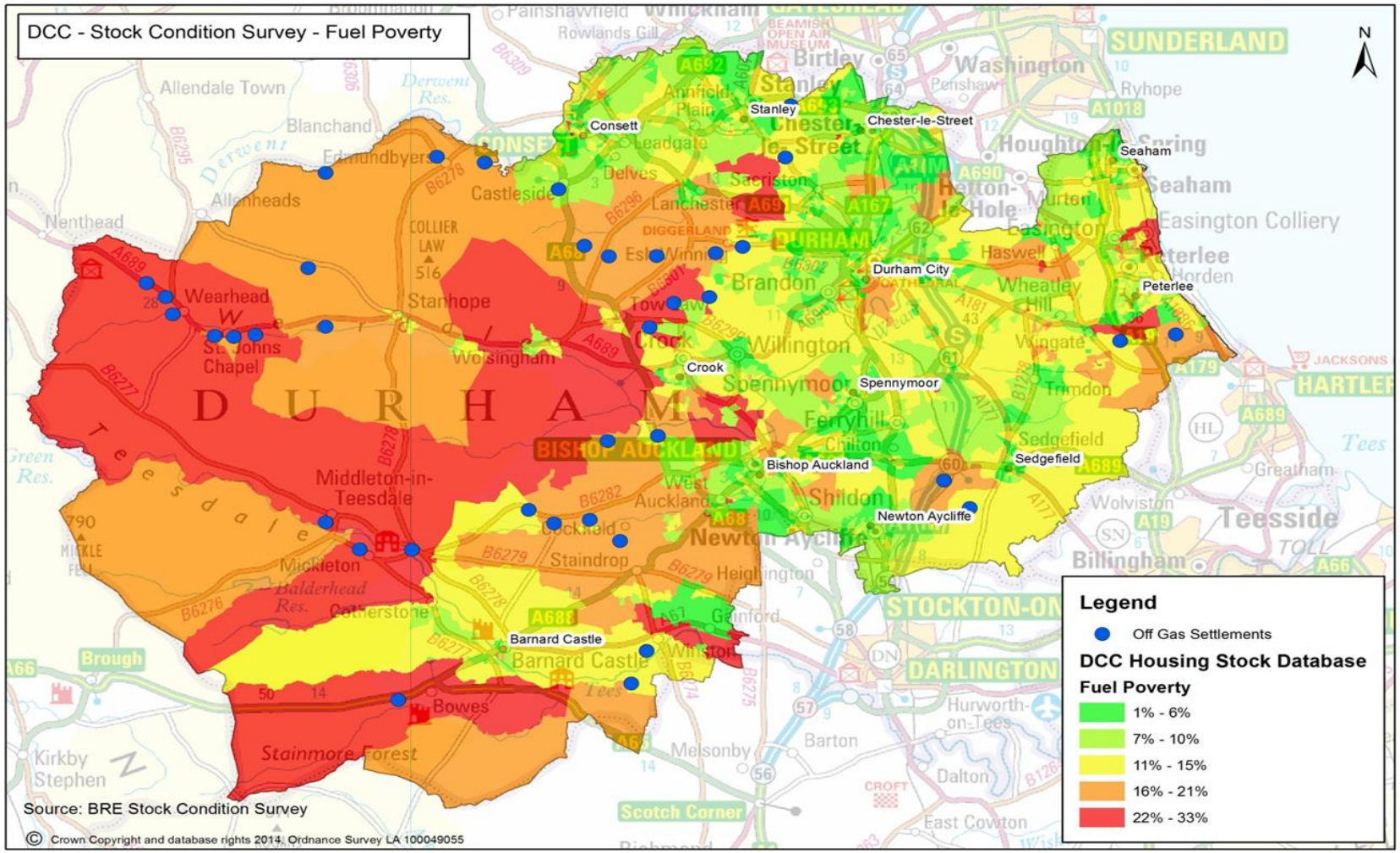
Region	Estimated number of households	Estimated number of fuel poor households	Estimated % of households in fuel poverty
North East	1,146,083	152,429	13.8%

Local Authority	Estimated number of households	Estimated number of fuel poor households	Estimated % of households in fuel poverty
County Durham	226,940	31,900	14.0%

Altogether better

Durham County Council

County Durham Fuel Poverty



Altogether better

Durham County Council

What Help is Available?

- Energy Company Obligation (ECO)
- Funding from Energy Supply Companies
- £1.9b until 2022
- Levy on all electricity bills
- Fuel Poverty grant programmes
- DCC Warm Homes Campaign

Uptake in County Durham

- ECO - households in receipt of qualifying benefits
- 2,822 households in County Durham received grants for heating / insulation
- ECO Flex – qualifying criteria extended
- Income less that £26,000 OR ill health
- 484 households assisted

Altogether better

Durham County Council

Managing Money Better

- Energy Market – confusing, many tariffs
- Fuel debts, fuel poverty and high bills
- MMB provides free & impartial help and advice
- MMB home visit to:
    - Find the most competitive energy tariff
    - Switch energy supplier
    - Fuel debt assistance and fuel debt write off
- Over £105,000 saved on energy bills from 919 home visits

Altogether better

Durham County Council

Case Study

- MMB promoted in County News
- Very high electricity bills - £4,300 fuel debts
- MMB home visit - electric meter 126% inaccurate
- New meter installed - bill reduced to £1,300
- MMB requested reworked bill using consumption history from new meter
- Energy company wrote off the £4,300 energy debt
- Client was in credit by over £1,000 due to previous payments

Altogether better

Durham County Council

London Borough of Croydon

Sprinkler Installation Programme 2017-2019

CROYDON
www.croydon.gov.uk

The Tragedy of Grenfell

- Immediate Review of all taller blocks – fire safety and cladding
- 1,101 blocks visited in week 1 – checks and advice
- Cladding – checked buildings against specs, surveys of construction type, testing
- Early information and advice for residents – letter drop, leaflets
- Established Fire Safety Board to provide governance
  - To coordinate wider corporate assets as well as borough wide response

Our Council homes in Croydon

- 16,237 properties – including leaseholders and other tenures
- 25 blocks 10 storeys or over – 1222 properties
- 11 blocks between 8 and 10 storeys – 430 properties
- 1065 number of building at 7 storeys or under – 9095 properties

Early decision to fit sprinklers in 10+ storey blocks and in one 8 storey sheltered block

Programme Summary

- Programme Commencement – Sept 2017
- Programme Completion September 2019
- 26 Tower Blocks (9 Sheltered and 17 General Needs)
  25 at 10 storeys and above and 1 at 9 storeys
- 1252 individual properties
- 44 leaseholders
- Installation costs £4,200 per unit
- Installation with on costs £4,700 per unit
- Decision not to charge leaseholders

Resident engagement and communications crucial

Resident Engagement & Communications

- Resident information sessions
- Time-lapse video
- Sprinkler system FAQ sheet
- Show flat available for residents to visit
- Leaseholders – consent form
- Do’s and Don’ts Fridge Magnets
- Access to properties for installation – Resident liaison team

Technical workstream

Technical Workstream

- Engagement with and input from LFB
- BS9521 (Fire Sprinkler Systems for Domestic and Residential Occupancies) Code of Practice
- Category 2 system (for residential blocks greater than 18m height and for sheltered & extra care housing)
- Structural Surveys and water tank capacity
- Commissioning of Alarm Receiving Centre for live and false activation
- Pilot block and show flats
- Programme – blocks divided into three batches

Delivering on our Estates

- Existing Planned Maintenance works
- Agreed HRA Budget – campaign for funding
- Contractor appointment - Consultant/ Technical Advisor appointment
- No access issues addressed via Tenancy Team
- Insurance issues

Customer satisfaction has increased

Looking back – what would we do differently…..

- Don’t try this at speed!!
- Plan plan plan – be clear what you are working with
- Clearly map stakeholders – internal/external
- Different solutions in different places
- Early wrap around support for vulnerable residents and quicker intervention where access isn’t given


Kensa Group
Kensa Heat Pumps
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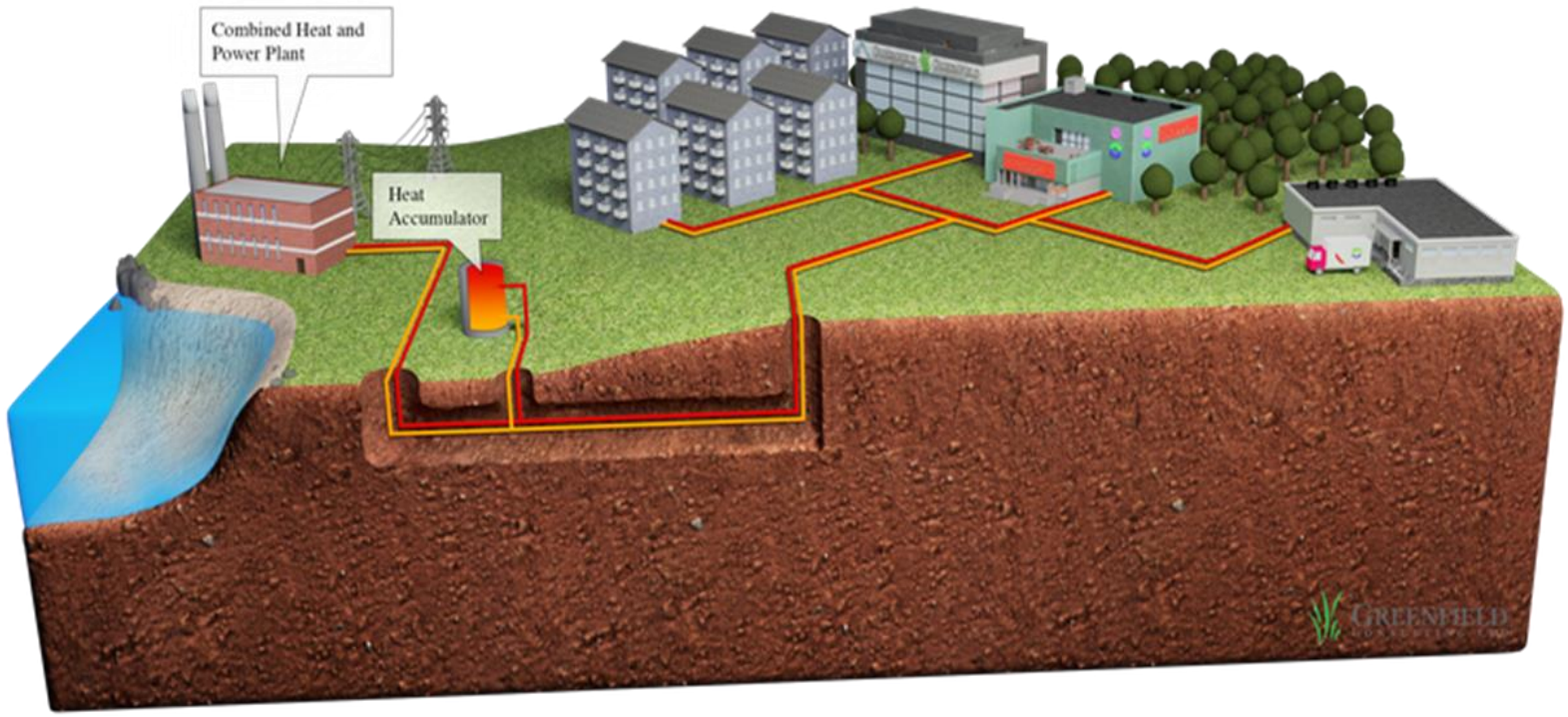
TRADITIONAL DISTRICT HEATING

Drawbacks:

- Heat loss through network
- Overheating in risers & corridors
- Networked heat metering
- Requires split-billing
- Highly specialised servicing
- Back up system required

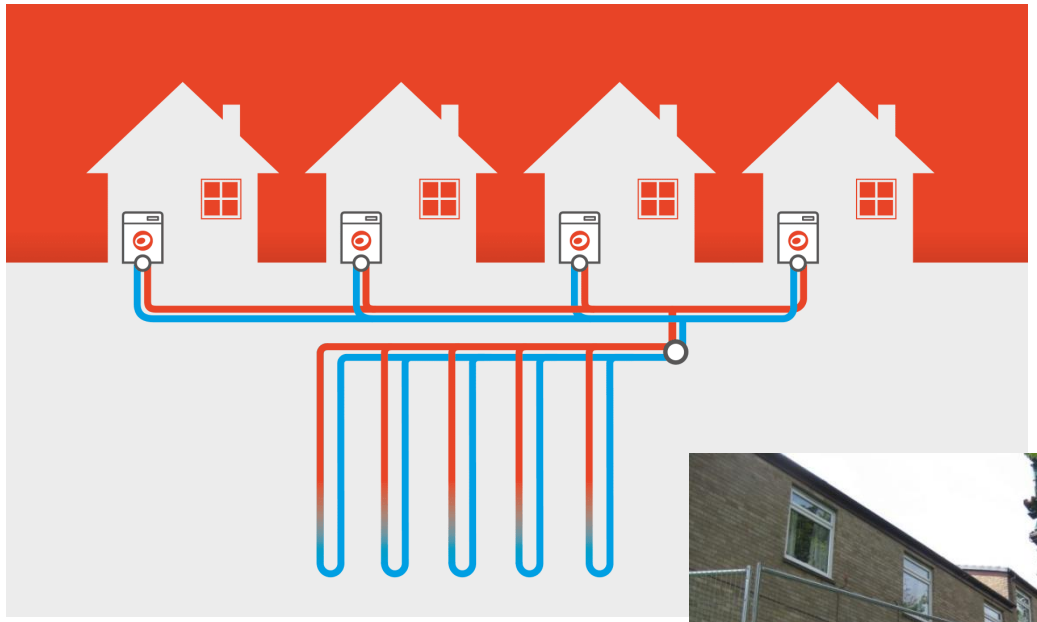


SHARED GROUND LOOP ARRAYS

Shared ground loop arrays are a form of ultra-low temperature heat networks connecting Kensa ground source heat pumps inside individual dwellings.

A different approach:

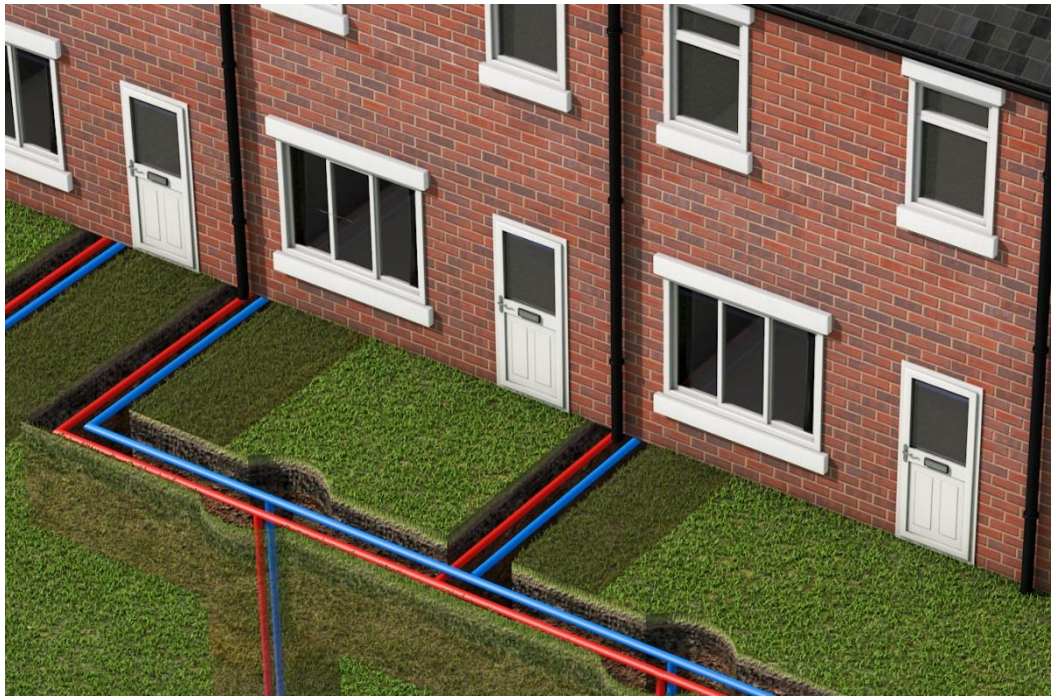
- Link as few as two properties
- Infinitely scalable for large developments
- Suitable for single and multiple occupancy dwellings
- Communal ground array pipework
- Individual heat pump in each dwelling
- Mimics a traditional gas framework



https://www.kensaheatpumps.com/the-technology/heat-sources-collectors/shared-ground-loop-arrays/

SGLA BENEFITS

- Ambient temperature distribution
- No district heat losses and no overheating
- Potential for free summer cooling
- Powered from occupants own electricity supply
- Householders able to switch energy suppliers
- Lowest running costs
- Independent billing and independent heat
- Eligible for 20 years payback from the Non Domestic RHI
- Split ownership permitted
- Ground arrays 100+ year lifetime
- Planning exempt



KENSA'S SHOEBOX HEAT PUMP

A perfect fit for Shared Ground Loop Arrays:

- 3kW and 6kW models
- Quiet operation: 47 dBA and 52 dBA
- Compact design: 530mm x 475mm x 370mm
- or 560mm x 605mm x 565mm (H x W x D)
- Integrated ground side circulation pump
- Heating and hot water (above 60°C)
- Fits in a cupboard or under a sink
- Compatible with all control systems

https://www.kensaheatpumps.com/ground-source-heat-pump-products-services/shoebox-ground-source-heat-pump/

BOREHOLE INSTALLATION

For developments with multiple properties, vertical boreholes are typically used to extract heat energy and are linked together to form the shared ground array.

- Closed loop pipework in vertical hole
- Dependant on site geology
- Requires specialist installation
- Typically 100-150m deep
- Gives 30-60 Watts per metre
- Space efficient and quick
- >100 year borehole life expectancy

https://www.kensaheatpumps.com/district-ground-source-heat-pumps-installation-in-tower-blocks

ENFIELD PROJECT – STEP BY STEP

In brief:

- Client: Enfield Council
- Principal Contractor: **ENGIE**
- Specialist subcontractor: **Kensa**
- England's largest shared loop district GHSP system
- Eight tower blocks – up to 402 individual flats
- Expected 50%+ savings on residents' heating bills
- Significant CO_2 emissions reductions
- Generates 20 year RHI income for Enfield
- Enfield Council benefits from ECO funding
- Commenced: **November 2017**
- Completed: **October 2018**
- Total contract value: **£7.3m**

25th ANNIVERSARY H&V news AWARDS 2019 — HEADLINE SPONSOR WOLSELEY — WINNER

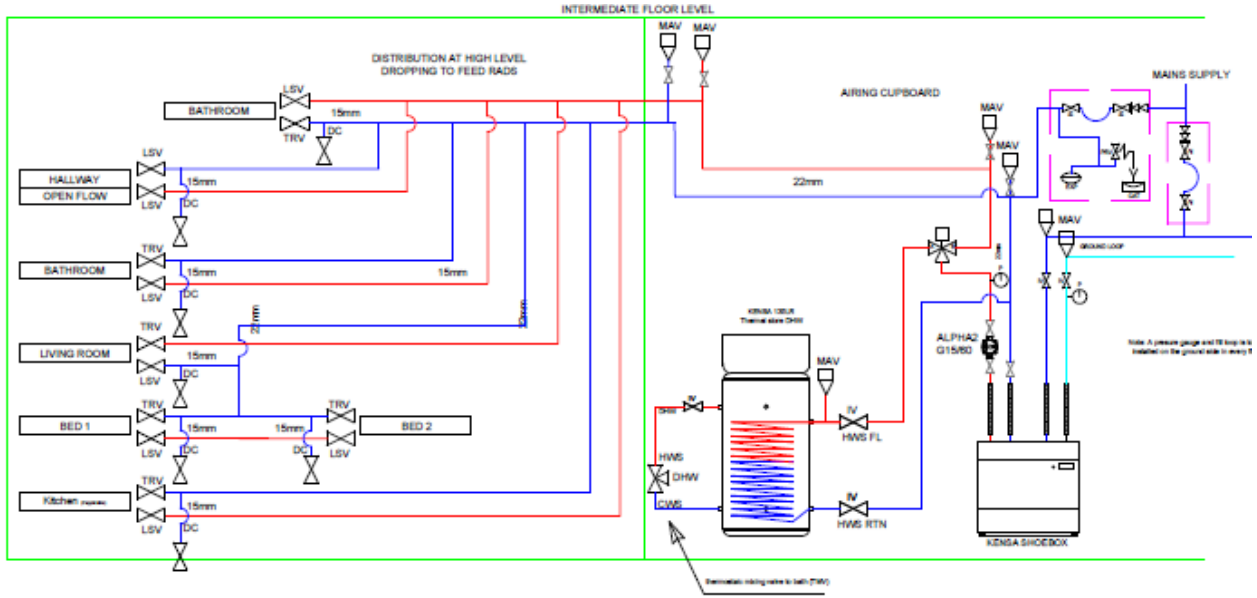
GREATER LONDON ENERGY EFFICIENCY REGIONAL AWARDS 2018 — LARGE SCALE PROJECT — WINNER

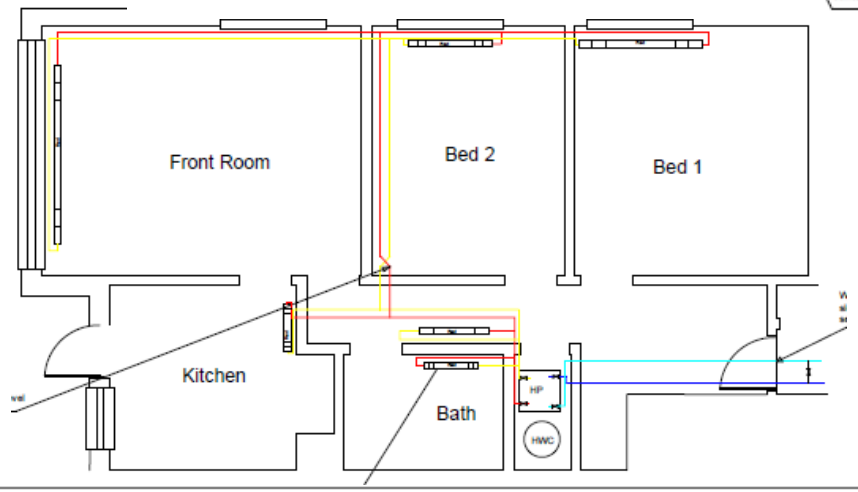
1. Tenant liaison

- Resident remained in occupation throughout the works
- Resident Liaison Officers consulted each family before, during and after works
- Communal meetings held for each block prior to works
- Individual plans agreed to ensure safe delivery of works
- Access to respite area for residents
- Ability to view mock-up for typical flat installation
- Opportunity to ask technical/general questions

2. Survey and Design

- Detailed property surveys to establish heat loads for accurate heat pump sizing and radiator sizing
- Borehole design was a combination of desktop analysis and on-site Thermal Response Test
- Risers designed to ensure no requirement for central circulation pumps
- Surveys carried out to locate all buried services – both externally and internally



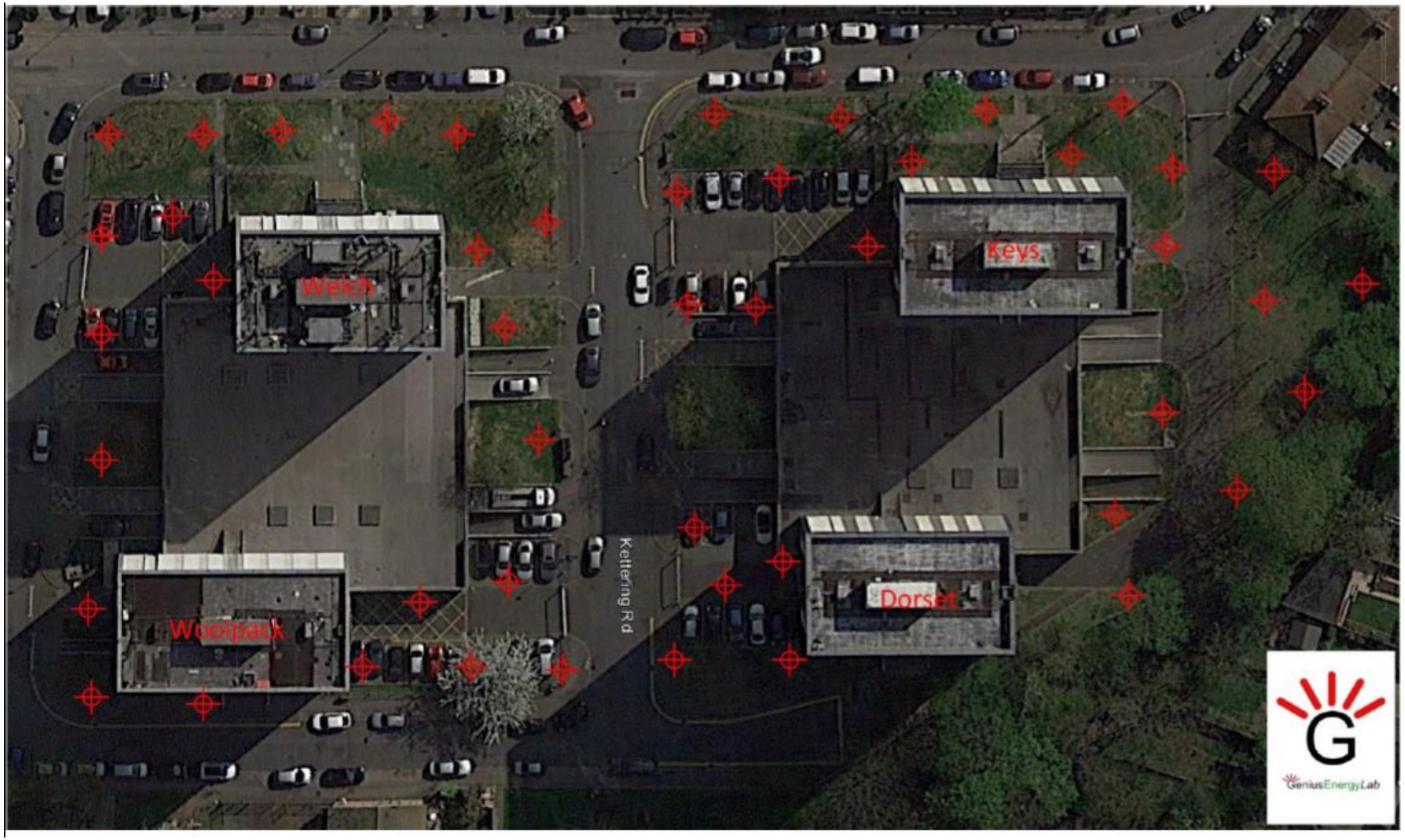


3. Borehole drilling

- Specialist pre-drilling at BH locations to rule out UXO
- 96 boreholes; 20,700 metres; 32 arrays
- Each array serves half a tower block

4. Trenching and headering

- Trenches are dug from each BH
- Pipework installed in trench
- Manifolds group the boreholes together
- Two pairs of pipes run into each basement
- All ground reinstated at the end


Welch
Keys
Woolpack
Dorset
Kettering Rd
GeniusEnergyLab

5. Riser installation

- Risers installed in stairwells from basement to top floor
- Core drilling on each floor
- Four pipes from basement to 6th floor
- Two pipes from 7th to 13th floor
- Branches taken off at each floor to serve the four flats
- Pipework insulated to prevent condensation
- All boxed in once completed
- All work approved by Enfield Council's fire safety team

6. Flat installation

- Existing hot water cylinder and storage heaters removed (where fitted)
- New radiators and distribution pipework installed
- Heat pump installed in airing cupboard
- Shelf fitted and hot water tank installed above heat pump
- New controls – dial thermostat and twin channel programmer
- Ground array flushed and filled with anti-freeze
- Heat pump system switched on
- Existing electric UFH system de-commissioned
- Making good and pipework painted
- System handed over to resident

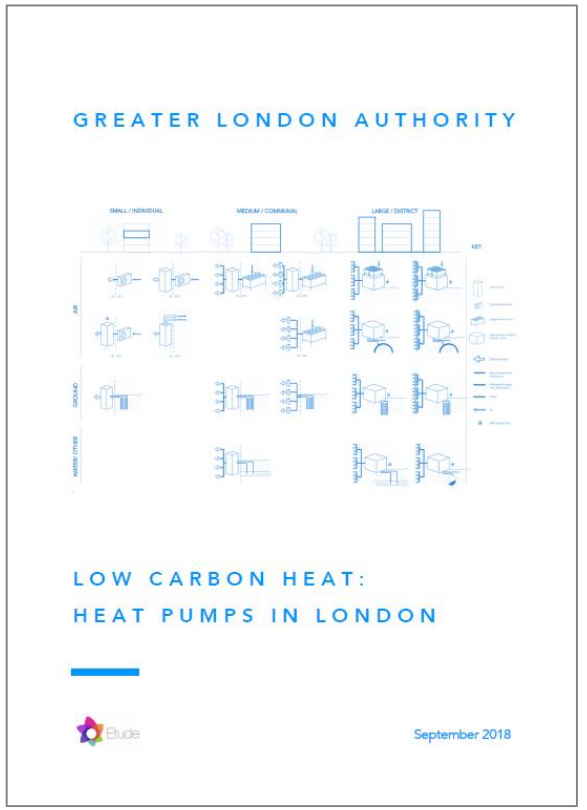
7. Key outcomes

- £4.3 million RHI return
- ECO funding obtained for client
- 773 tCO_2 saving/yr
- Running costs for residents reduced from £900/yr to £350/yr
- Significant reduction in maintenance costs for Enfield Council

GREATER LONDON AUTHORITY

GSHP's & GOVERNMENT

- London aims to be a zero-carbon city by 2050
- GLA commissioned major report on viability of heat pumps for London: Enfield project featured
- The report concludes that efficient heat pumps offer a cost competitive form of low carbon heating
- Heat pumps are very likely to play a growing role for the delivery of low carbon heat in the capital
- Staging seminars to support the roll-out of heat pumps in new builds



> **Heat pump systems** provide the lowest carbon heat for all case studies, though significant differences exist between the various types of heat pump. The lowest carbon heat is achieved by the residential block using ground source heat pumps coupled to a communal ground loop. This system benefits from very small distribution losses due to the ambient flow temperature and relatively high efficiencies of 380% for space heating at 35°C and 290% for DHW at 60°C offered by ground source heat pumps.

Kensa Contracting
A KENSA GROUP COMPANY

GROUND SOURCE HEAT PUMPS AND SHARED GROUND LOOP ARRAYS

Conclusions

- The technology is well developed and has been deployed at scale
- Government funding for shared ground loop heat pumps is in place to stimulate significant growth
- Investment returns on shared ground loops are attractive both in return rates and potential volumes
- Kensa has the knowledge and expertise to deploy this technology at significantly increased scale
- GSHP are a sustainable heating solution for both new build and retrofit projects
- **GSHP offer a solution to the Climate Emergency we are facing**