# Local Energy Advice Demonstrator (LEAD) project

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# Agenda

- LEAD Background and Hypothesis
- SCC's LEAD project components
- LEAD stats to date
- Challenges and successes
- Broader Programme next steps
- Retrofit Guide and Supplementary Study
- LARA

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# Local Energy Advice Demonstrator (LEAD)

**Project Hypothesis**

***IF*** via an innovative public-private-third sector partnership, we provide community-led, high quality **in-person energy advice**, incorporating home thermal imaging surveys; a **one-stop shop** for home energy improvements that enables residents to take the next tangible step; and a low-interest green home finance offer.

***THEN*** we will generate stronger action among the 'hard-to-reach consumers' and 'hard-to-treat properties' audience segments in respect of energy efficiency improvements.

***BECAUSE*** these audiences will be provided with streamlined and personalised support that breaks down barriers and blockers.

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# LEAD components

Department for Energy Security & Net Zero

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LEAD

Home Energy Advice Taskforce ('HEAT')

ZERO carbon guildford

One-Stop Shop (Furbnow)


Home Decarbonisation Loan

*TBC…*

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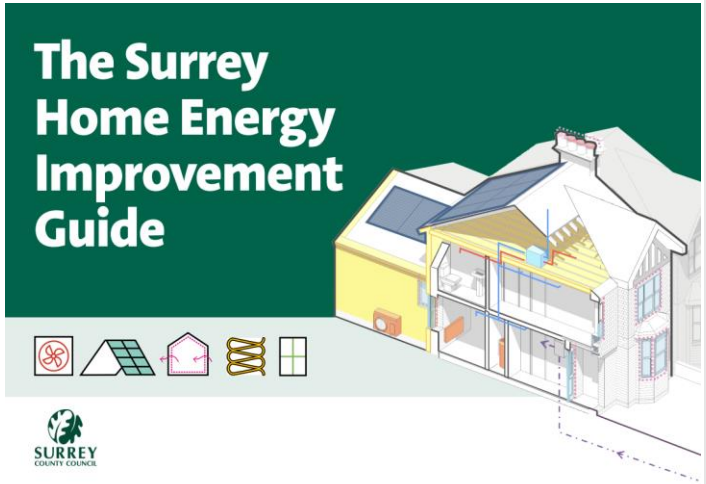
# LEAD components continued…

Surrey Climate Commission

- **Focus groups with key LEAD resident types**
- **HEAT Plus**


[Facilitating Retrofit | UKGBC]





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# Timeline

**May 2023:** LEAD Bid success

**Jun 2023:** Original LEAD start date

**Oct 2023:** Delayed LEAD start date

**Dec 2023:** HEAT service starts

**Jan 2024:** MCSF /UKGBC consult support

**Nov 2023 – May 2024:** Focus groups

**Sep 2024:** Furbnow OSS pilot goes live

**Oct 2024:** 2nd Winter HEAT resumes; 'HEAT Plus' launches

**Dec 2024:** Retrofit guide and retrofit study

**Feb 2025:** Launch of Green home finance pilot (TBC)

**Apr 2025:** End of project

# LEAD Stats

**£334,000**

LEAD FUNDING LEVERAGED

**£85,000**

MATCH FUNDING

**5**

PROJECT CHANGE REQUESTS

**924**

HOUSEHOLDS HELPED BY HEAT AND HEAT PLUS

**107**

ENERGY CHAMPIONS TRAINED

**72**

FURBNOW HOME ENERGY PLANS

**6**

HEAT → HEP HOUSEHOLDS

**10**

RETROFIT PROJECTS COMMITTED

**C. 200**

HOUSEHOLDS W. REMEDIAL MEASURES

**98%**

'SATISFIED' OR 'VERY SATISFIED' WITH HEAT

**73%**

'MORE LIKELY' TO INSTALL MEASURE(S)

**5**

FOCUS GROUPS HOSTED

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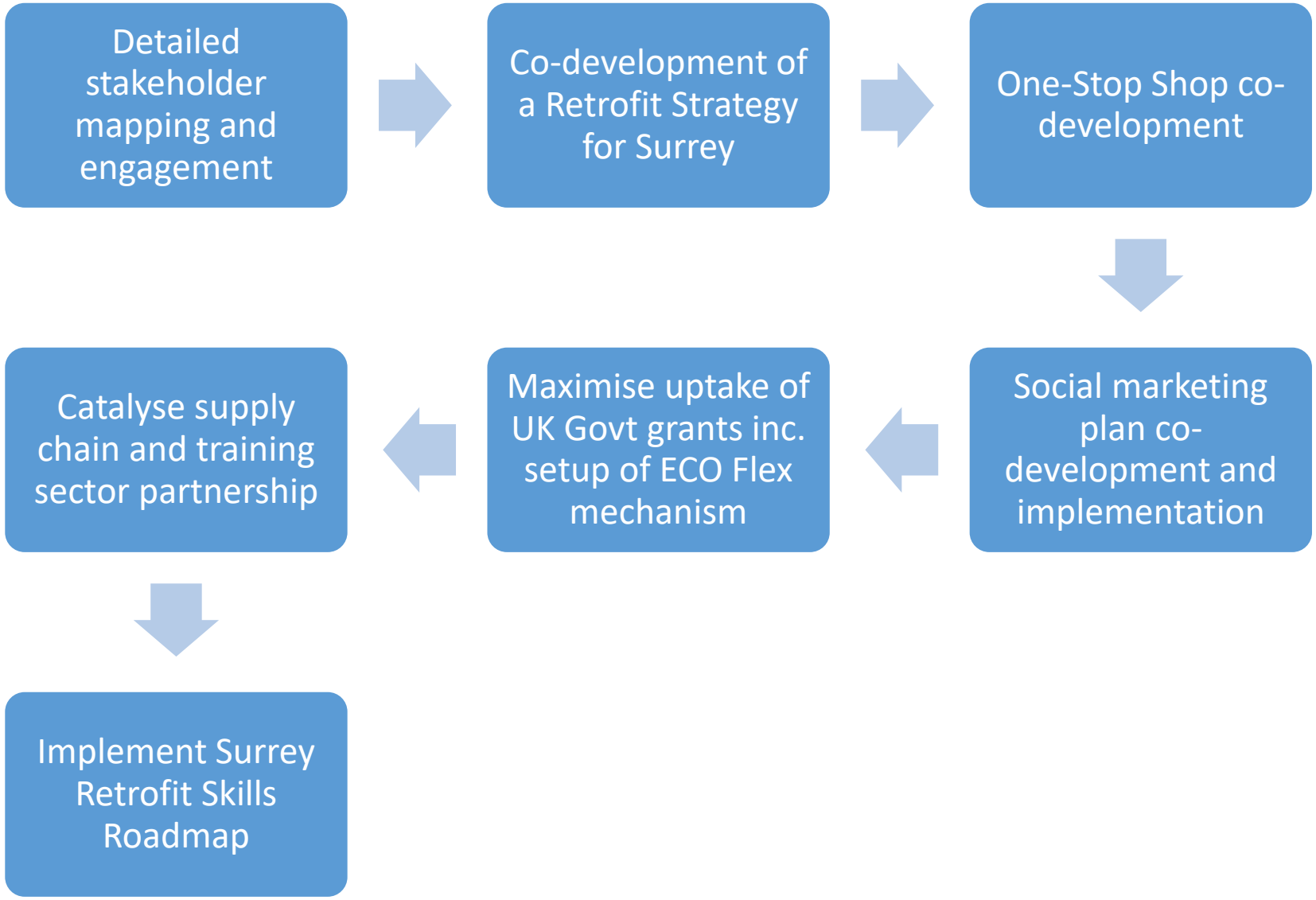
# Challenges

- Project start delay
- Spending the grant money
- LEAD change control and reporting process
- One-Stop Shop options
- Green finance offer
- Reaching (and helping) the hard to reach
- Scams
- Consumer knowledge
- Intensity of advice provision

# Broader programme next steps

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# Surrey Home Energy Improvement Guide



## Medium semi-detached house

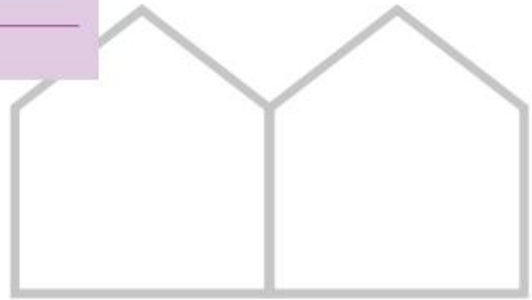
This house type covers a wide range of different types of houses which may not look identical. Their size, construction age and condition will also be different and will have a significant impact on how much work might be needed and what measures are appropriate.

However, a variety of characteristics and constraints are common to semi-detached houses.

This guide aims to communicate clearly solutions likely to be suitable for one 'typical' version of a semi-detached house, a '**medium terraced house**':

Do not worry if your house does not exactly fit into this description though. For example, you might leave in a larger semi-detached house built in the 1950's. This guide will still be useful to you, but you will have to consider the advice with caution and consider it as a starting point. A building professional can help you identify specific recommendations for your house.

| |
|---|
| Built in 1900-1920 |
| Approximate floor 120m$^2$ |
| Solid walls |
| Suspended floors |
| Presence of loft |




Runnymede


Woking


Tadworth


Chertsey


Sunbury-on-Thames


Egham


Camberley


Ashford

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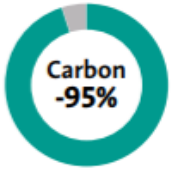
# Medium semi-detached house

## Heat pump ready ✔

If your home is '**heat pump ready**' it is likely you could install a heat pump without doing anything else. However, if you do not already have the features highlighted on this page, we recommend implementing them as they are cost effective and will improve your home, increase the performance of the heat pump and reduce your energy bills.

### Savings




### Estimated costs

**Heat Pump**
from £500* to £15,000

**Solar Panels**
from £3,000 to £9,000

**Draughtproofing**
from £300 to £500

**Loft insulation**
from £2,000 to £4,000

**Solar panels**
They work on south, east or west facing roofs and can significantly reduce your electricity bills.

**Insulate loft**
The loft is generally the easiest place to install insulation and can even be done as a DIY project. 300mm depth is best.

**Install a heat pump and hot water cylinder**
You will need a hot water cylinder inside and a heat pump unit outside. The back garden is likely to be the best option, but other locations may be possible too.

**Improve ventilation**
Fans extracting air from your kitchen and bathrooms will improve air quality in your home and reduce condensation.

**Electricity supply**
You will need to check your electricity supply is 80A – suitable for your heat pump installation.

**Minimise draughts**
Air leaks around the house (e.g. around windows and doors, through the chimney) waste a lot of energy (and money). Fixing them is possible and cost effective.

* Lower range assumes the contribution of funding and/or financing. Not all households will be eligible, see pages 41–42 for more information.

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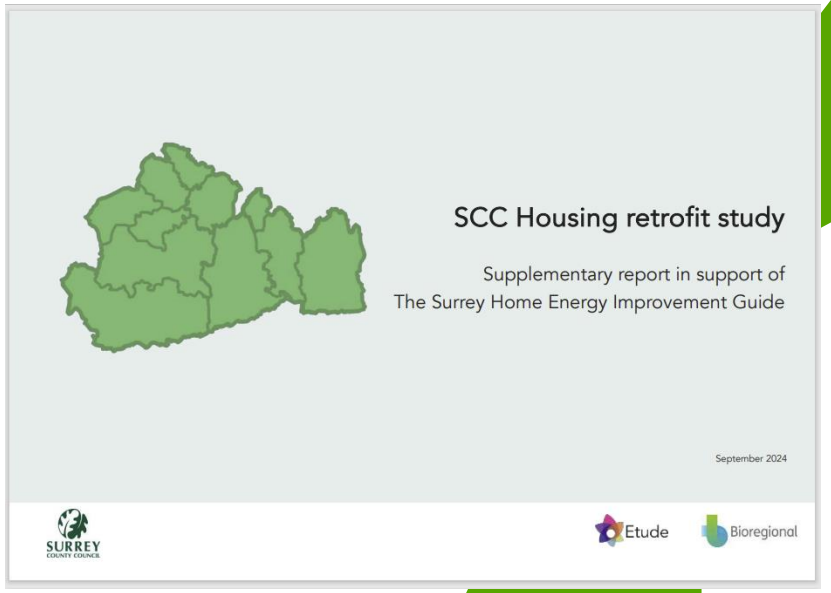
# Supplementary housing retrofit study




## Retrofit planning for affordable heat decarbonisation

**The importance of heating load and flow temperature**

When planning housing retrofits that are prioritised to deliver affordable decarbonisation of heat, two key technical considerations are the **peak heating load** and the **flow temperature for the heat emitters** (radiators).

**Peak heating load**

The peak heating load is the maximum instantaneous power output of the heating system that is expected to be required to maintain a comfortable internal temperature (18-21˚C, depending on room type) at a minimum outdoor temperature. Heating load increases with dwelling size, air leakage of a building, and as insulation reduces. An accredited heat pump installer would be able to carry out a calculation to assess what is required for a typical house.

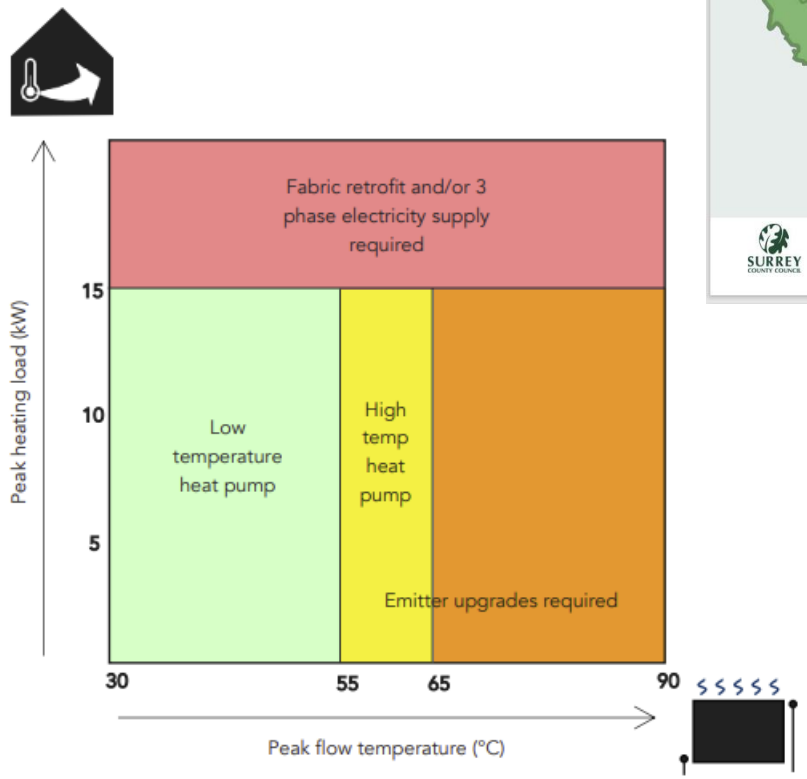
Most heat pumps can provide up to around 15kW of heat output on an 80A single phase supply, so if a dwelling's peak heat load exceeds this, fabric efficiency improvements are required to reduce peak heat load, or a potentially costly three phase electricity supply will be necessary to enable use of a more powerful heat pump.

**Emitter flow temperature**

Low flow temperatures are key to efficient heat pump operation and low running costs; however, the heat output of heat emitters reduces as flow temperature drops. This means that to use the low flow temperatures required to unlock the most efficient heat pump operation, either heat emitter sizes need to be increased to compensate, or a home's peak heat load needs to be reduced by improving the fabric efficiency (a combining both could be applied).

**Dwelling size and fabric efficiency are indicators of peak load**

The smaller the volume and more efficient a building's fabric, the lower the heating load. Heat pump installations in homes with lower heating loads will be simpler and less expensive than for large inefficient homes. There is a large range in the middle where minor fabric upgrades may be necessary or beneficial.




*Relationship between peak heating load and emitter flow temperature. If a dwelling's peak heat load is above 15kW, it is likely that the heat load will need to be reduced, otherwise a 3-phase electrical supply may be required. Flow temperatures above 65°C usually mean that heat emitter upgrades are required to enable use of a heat pump, however ideally peak flow temperatures should be kept below 45°C for the best efficiencies.*



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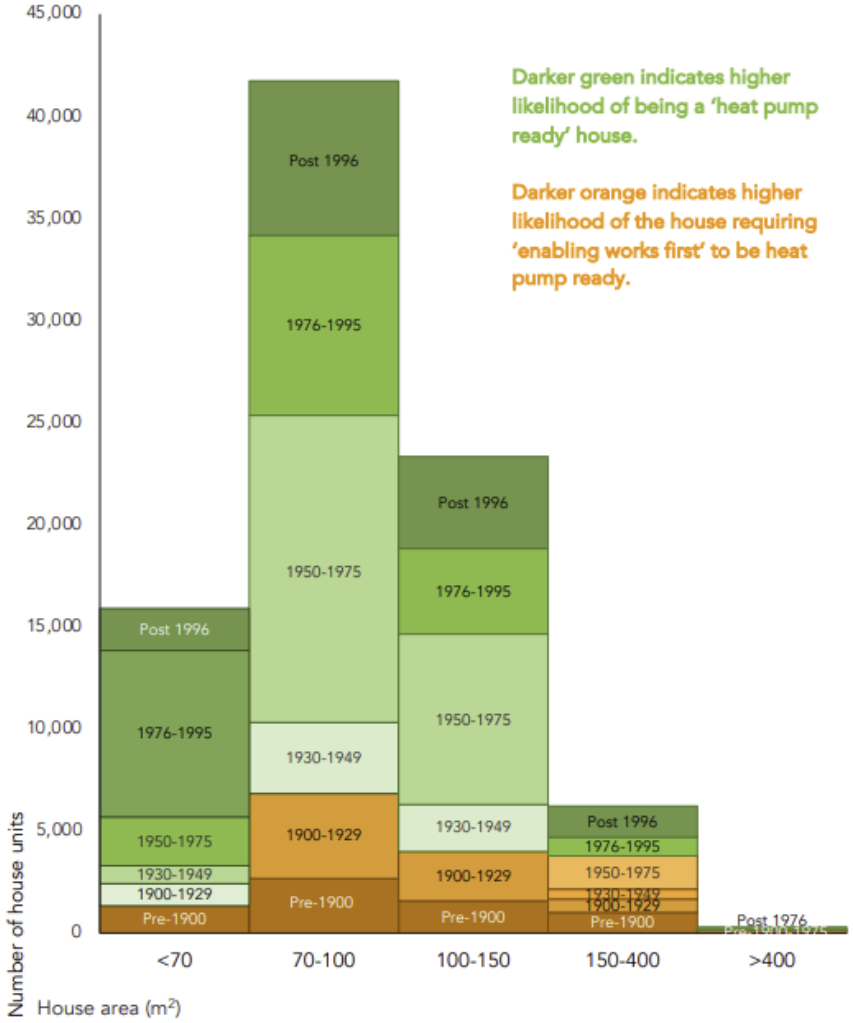
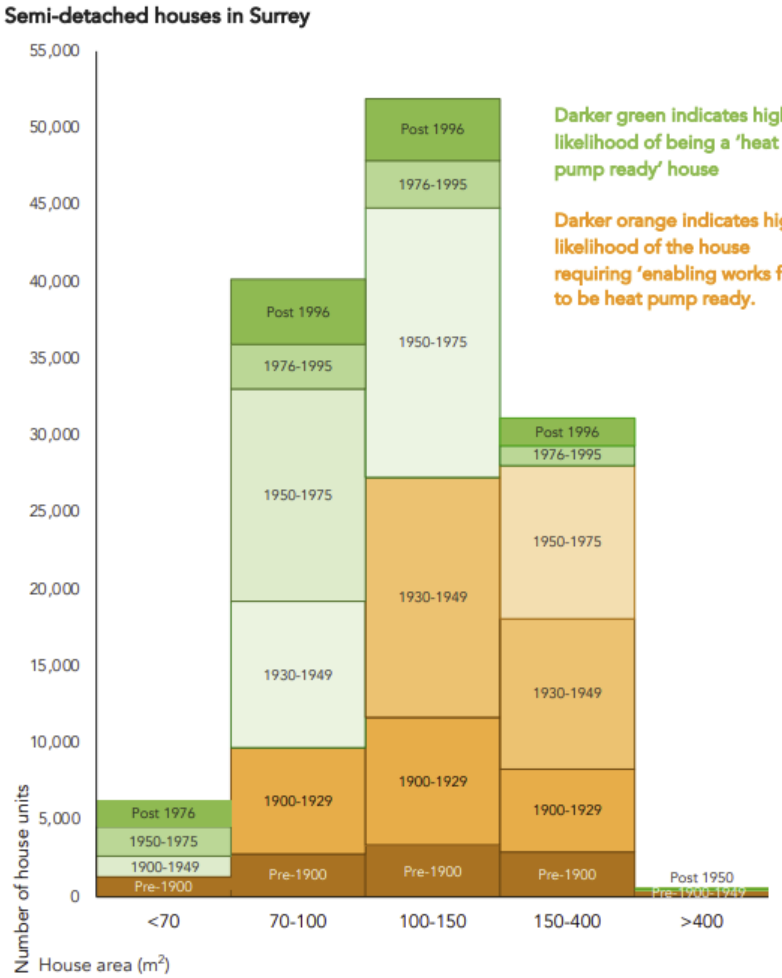
# Supplementary housing retrofit study

## Likelihood of a 'heat pump ready' housing stock (2/2)

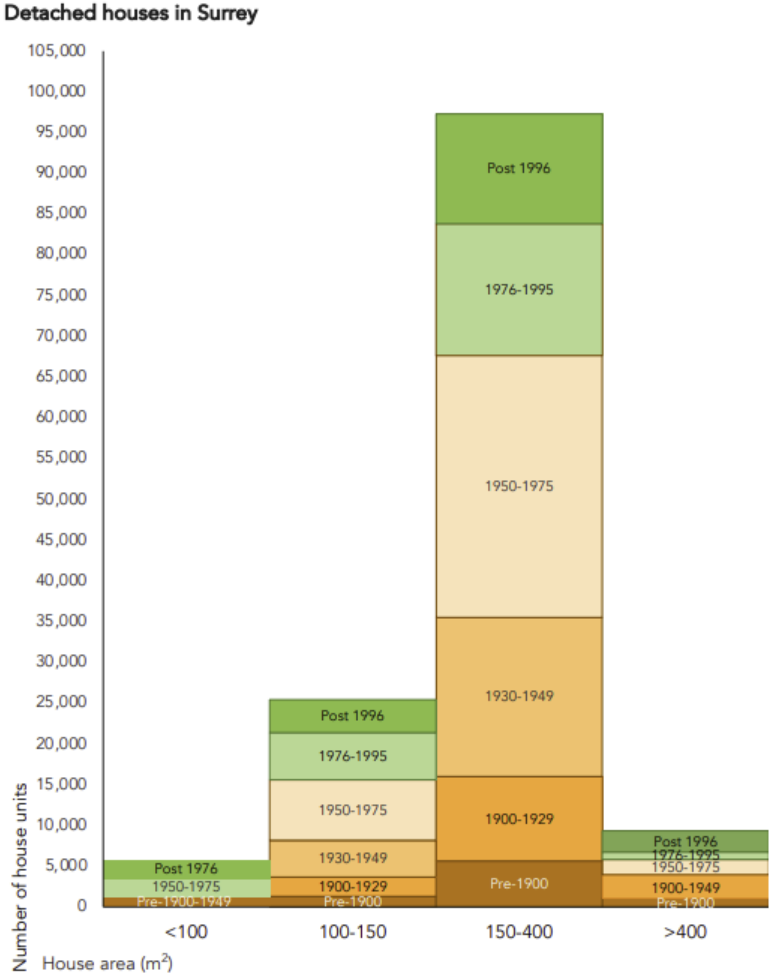
### Terraced houses in Surrey




### Semi-detached houses in Surrey




### Detached houses in Surrey

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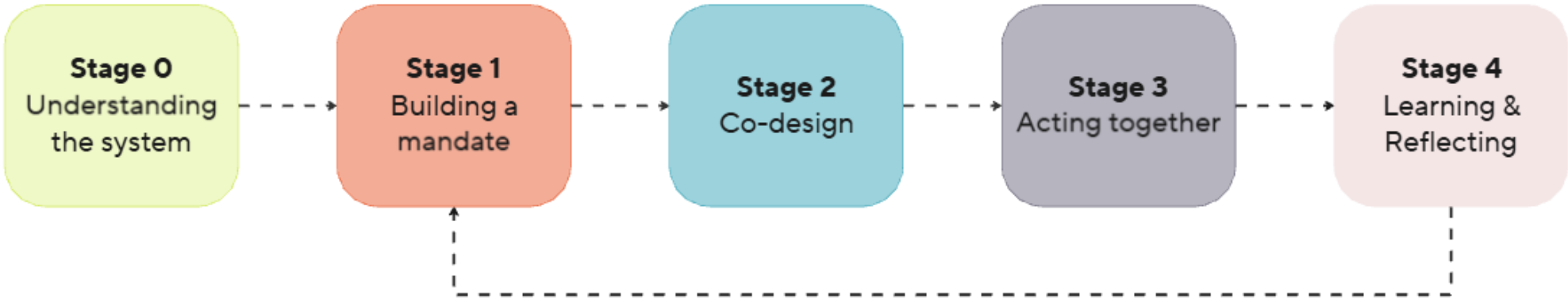
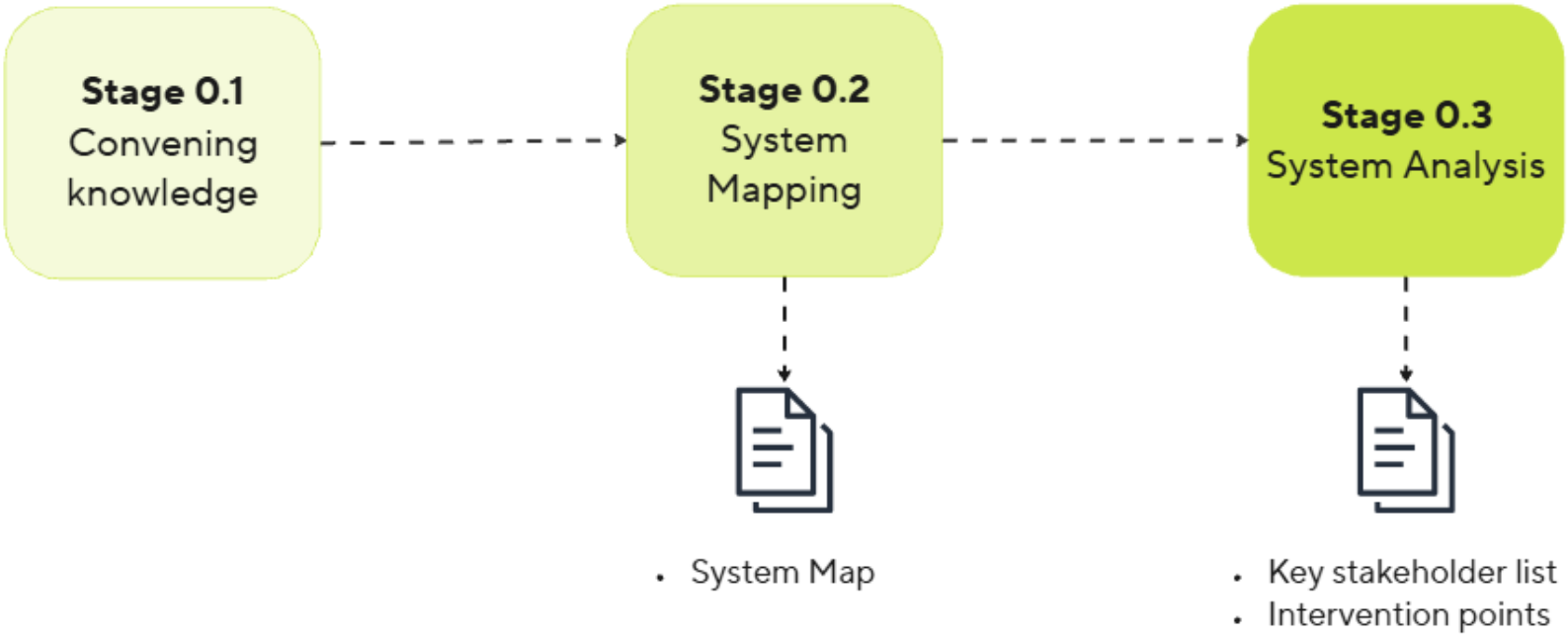
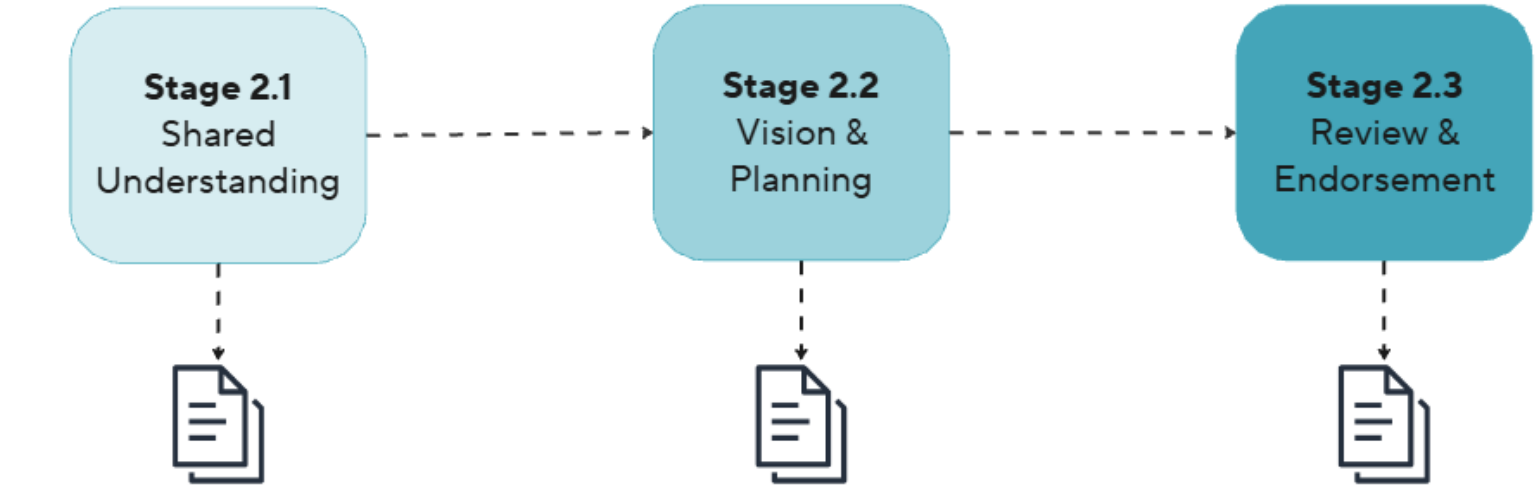
# LARA Pilot Process; Overview



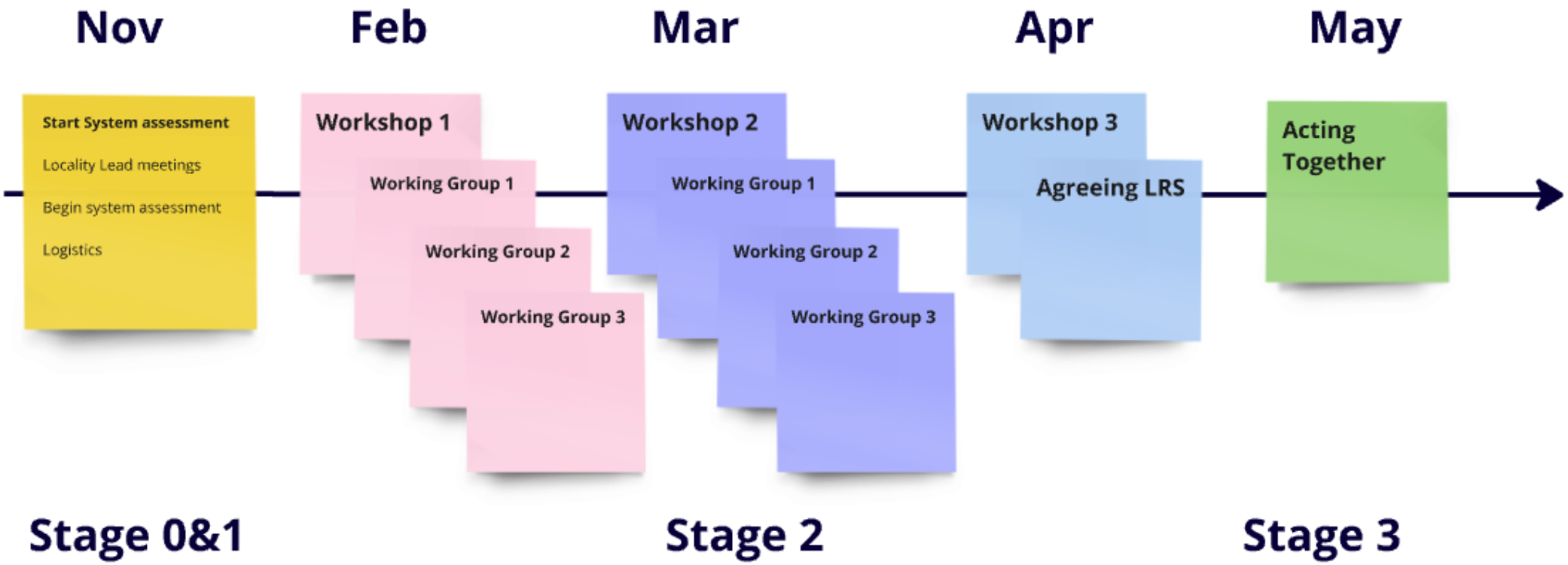
# LARA Pilot Process; Understanding the System



# LARA Pilot Process; Co-Design



# Timeline


Nov
Feb
Mar
Apr
May
Start System assessment
Locality Lead meetings
Begin system assessment
Logistics
Workshop 1
Working Group 1
Working Group 2
Working Group 3
Workshop 2
Working Group 1
Working Group 2
Working Group 3
Workshop 3
Agreeing LRS
Acting Together
Stage 0&1
Stage 2
Stage 3