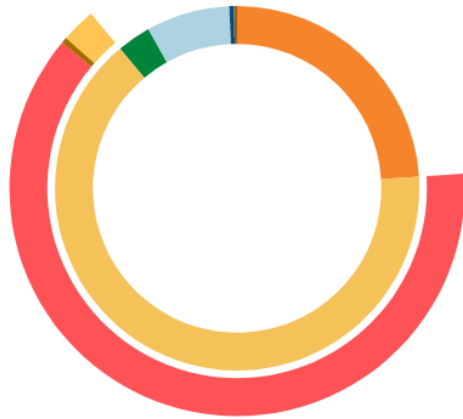




Chris Newman Parity Projects Domestic Retrofit

The scale



- Orange: Cavity
- Yellow: Solid Wall
- Green: Timber Frame
- Light Blue: System Built
- Dark Blue: Sandstone or Limestone
- Brown: Granite or Whin
- Dark Brown: Cob
- Red: Solid: As Built
- Dark Yellow: Solid: External
- Light Yellow: Solid: Internal

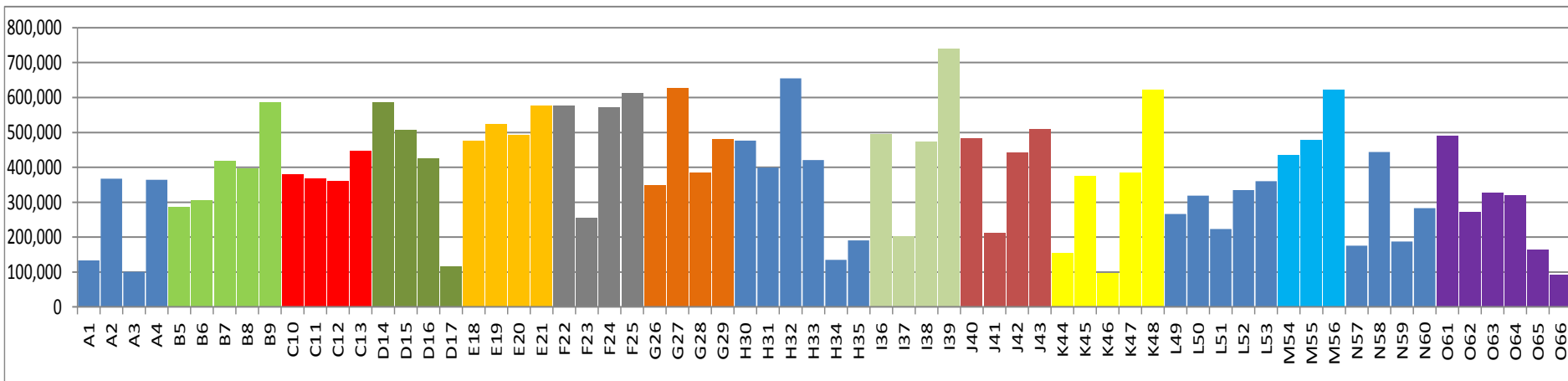
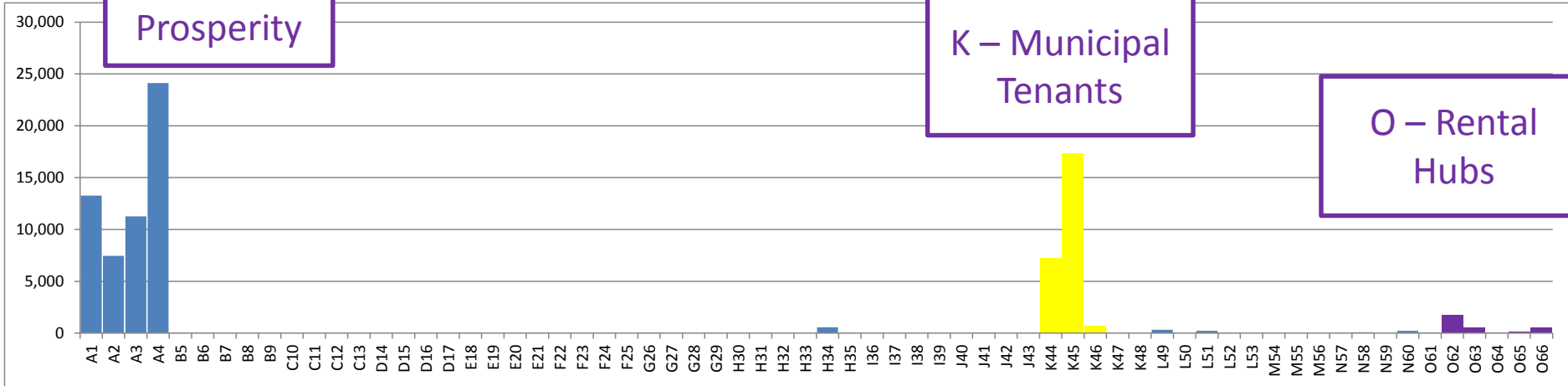


Who Lives Here?

A – City Prosperity

K – Municipal Tenants

O – Rental Hubs



Conservation Areas



Around 50% of domestic properties

Conservation Areas - considerations

- **Wall insulation (external)**
- **ASHP units**
- Boiler flues
- Extractor flues
- PV and Solar thermal panels
- Windows



What needs doing?

Category	Number	Cost	Per Property	Comment
Heating Systems	110,000	£606,000,000	£5,500.00	ASHPs, District Heat Networks
Walls	110,000	£374,000,000	£3,400.00	External and Internal
Roof	14,000	£6,000,000	£400.00	Not just loft but flat roofs etc
Glazing	38,000	£220,000,000	£6,000.00	
Floors	35,000	£58,000,000	£1,700.00	Suspended and Solid
Controls	53,000	£17,000,000	£300.00	Smart Controls
Secondary Heating	21,000	£3,500,000	£200.00	Mainly removal
Doors	12,000	£15,000,000	£1,300.00	
Lighting	19,000	£1,000,000	£50.00	

Total = £1.3 Billion

So average of £10,000+ per property (excluding redecoration etc)





Results

SAP

90.71 B

EI

91.64 A

3 Takeaways

1) Many things needs to change to allow for lots of good quality **solid wall insulation**:

- Planning permission changes
- Conservation area restriction relaxation
- Skills and available installers

2) To de-gas heating the main solutions will involve lots of **Air Source Heat Pumps** and **Heat Networks**

Heat networks installations will cause disruption

3) The scale of the problem needs lots of **carrots** and **sticks** to generate **desire**:

Carrots	Sticks
Council tax incentives	Planning permission changes
Grants	Building control changes
Low interest loans (subsidised?)	Higher rental standards
Stamp duty incentives	Sales standards
An easy trusted install process	Compulsory installations
Example homes and knowledge	
Heat network expansion	