



Department  
for Transport

ADEPT **LIVELABS2**  
Decarbonising Local Roads



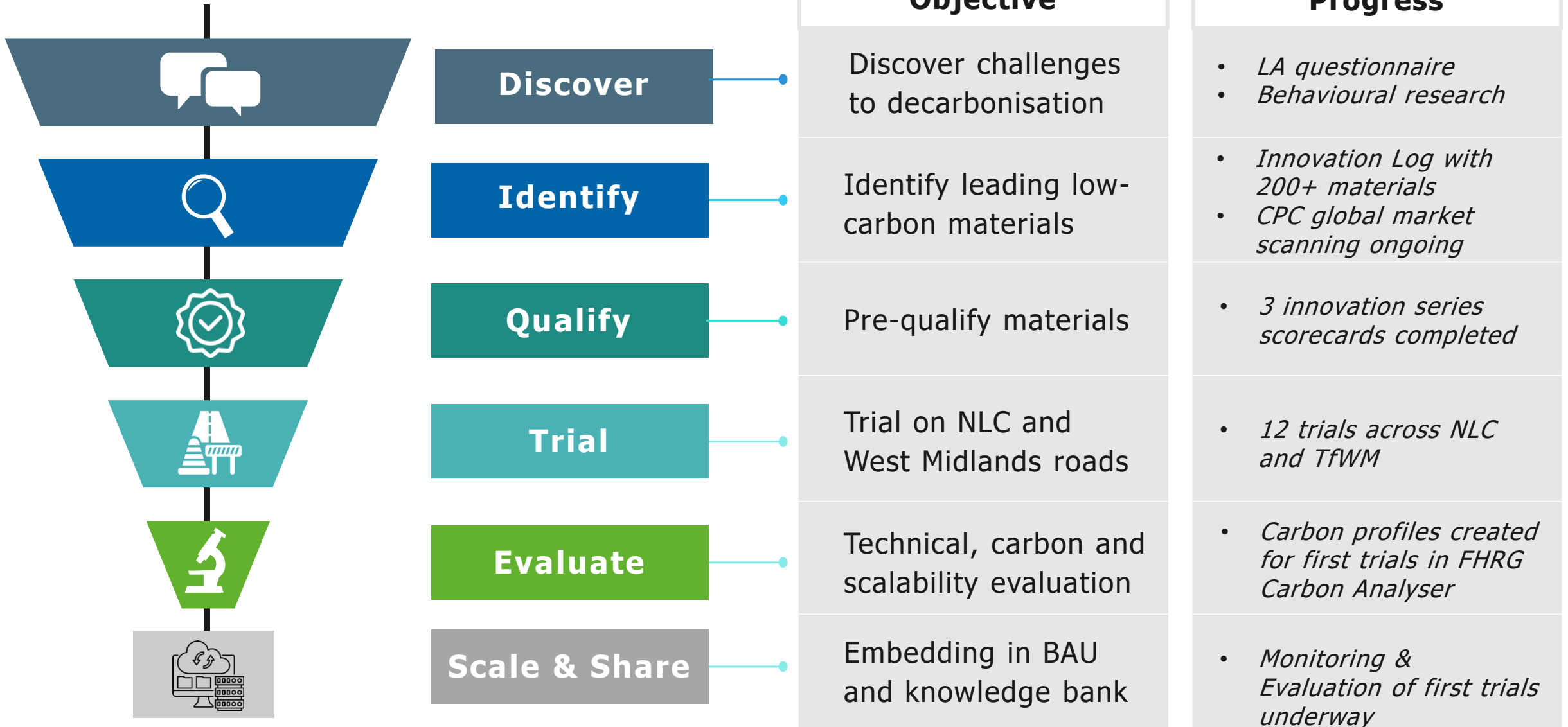
# Centre of Excellence for Decarbonising Roads

An ADEPT Live Labs 2 theme



## Recap of the Centre, its structure & objectives

# The Innovation Funnel



# Our First Step:

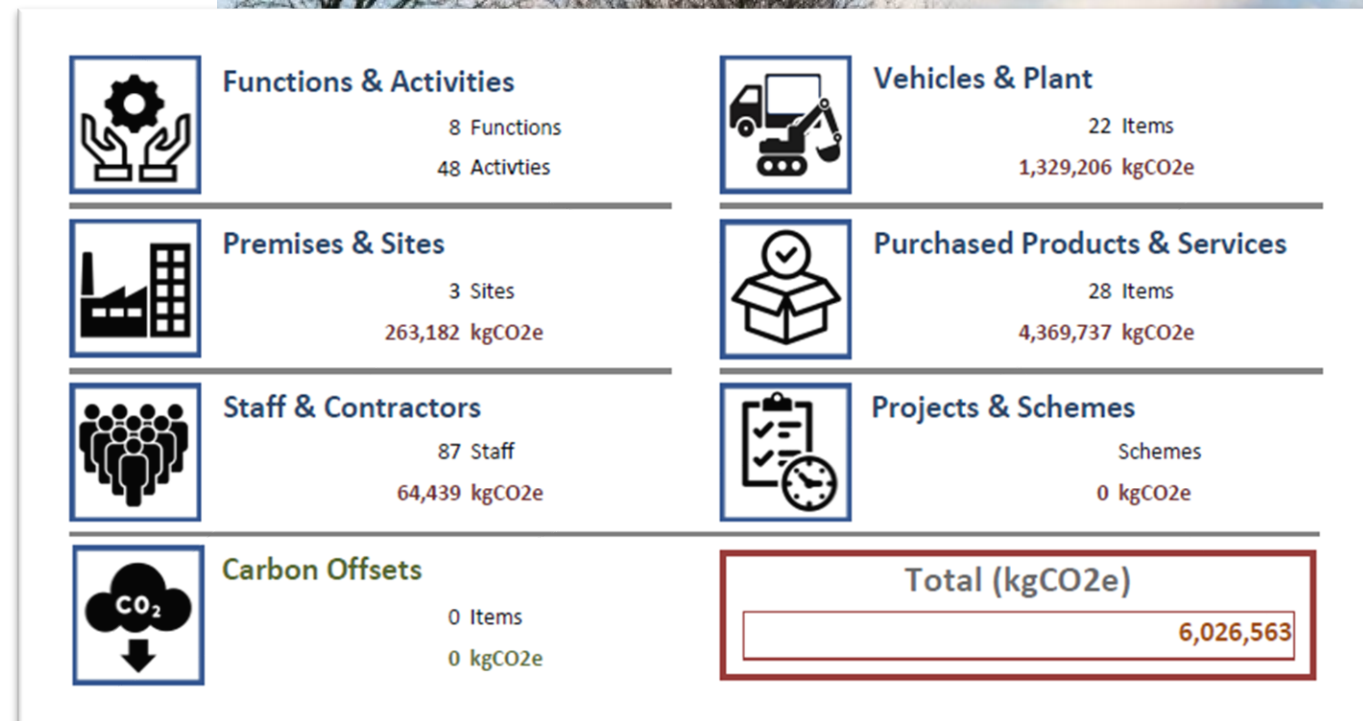
## Carbon Baseline of NLC

Calculated for financial year 2022-2023 for all NLC local road services to baseline future carbon savings of the project and identify carbon hotspots

Accounting for carbon emissions across Scopes 1, 2 and 3 for sites & premises, staff & contractors, vehicles & plant, and purchased products & services

### Key insights:

Although material carbon is significant, energy transition will be necessary to significantly decarbonise



# Key Results

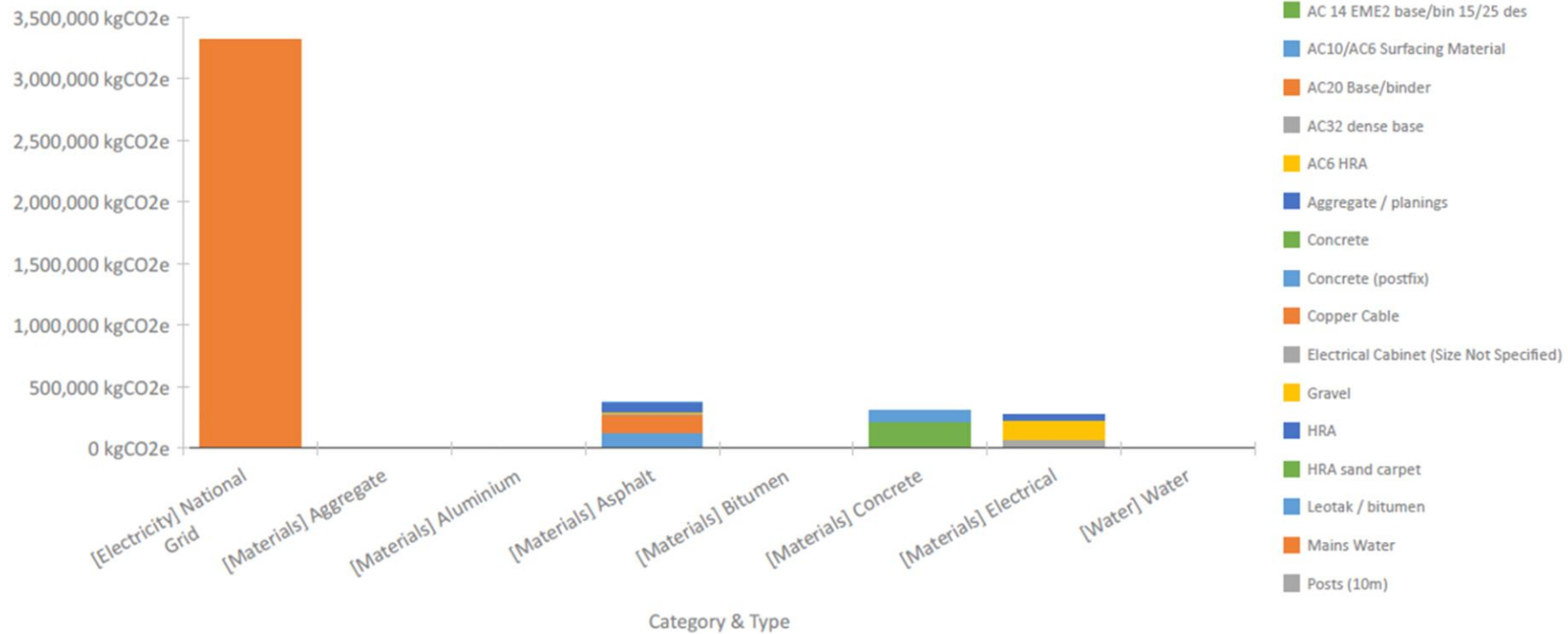
Dashboard Charts  
North Lanarkshire Council

Service  
Highways [2022]

Future Highways  
Research Group



Emissions By Category & Type



# Our First Step:

## Carbon Baseline of TfWM

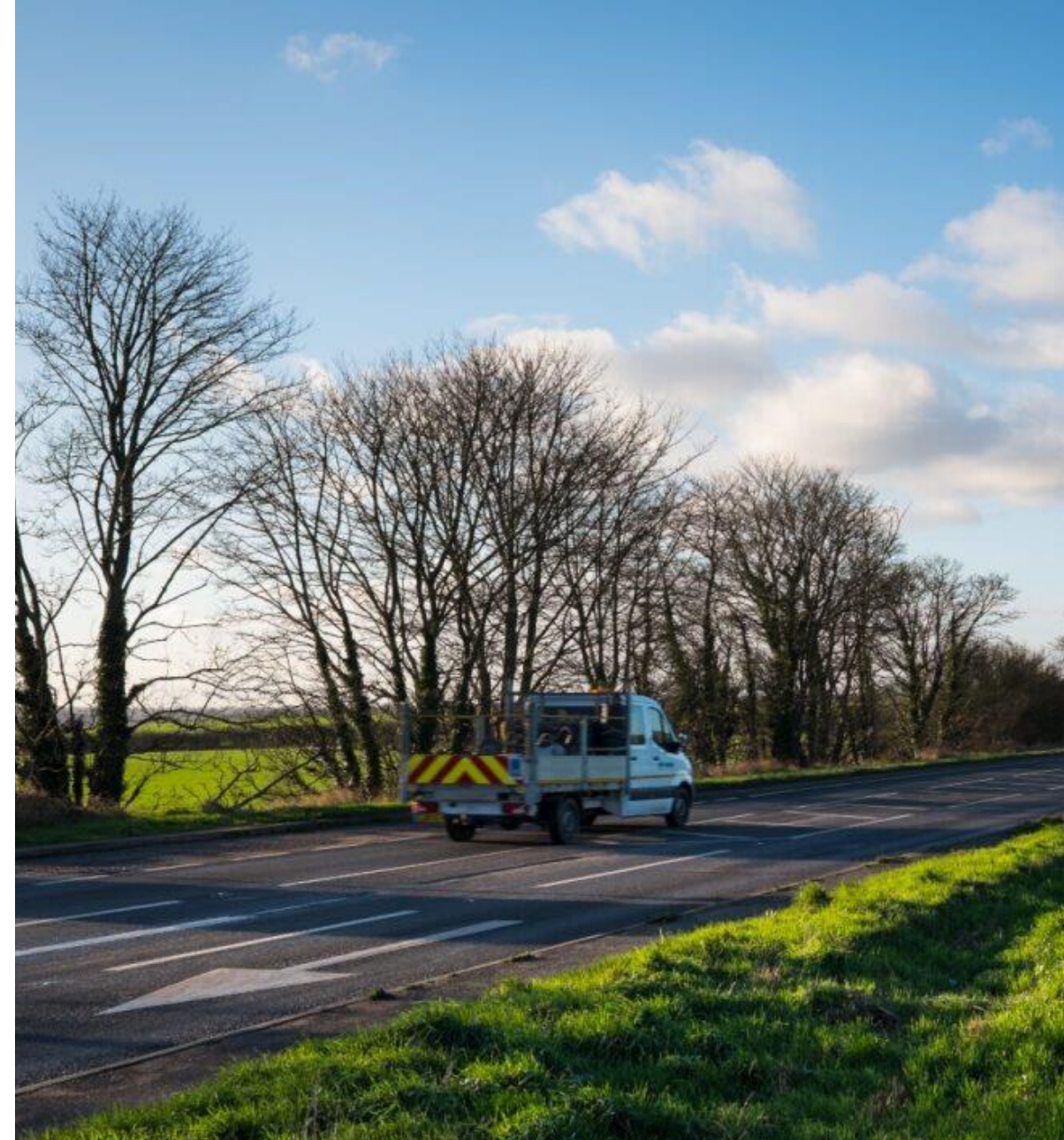
### Process & Progress



### Key Challenge



### Lesson Learned





# Case Study

## NLC Pothole Trials

### Initial Results

**Carbon:** est. 37.5% saving for GreenPatch

**Technical:** expected increased longevity from 3 out of 4 materials

### Next Steps

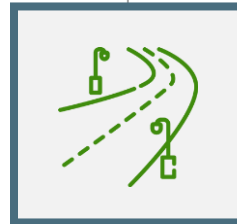
- Monitoring and evaluation of repair performance over the next 7 years
- Full carbon profiles in Carbon Analyser
- Transition to best performing materials as BAU in NLC

## Approach



### Materials Trialled

- Degafloor Degafill (MMA-based cold-mix)
- Roadmender Elastomac (mastic asphalt)
- FM Conway GreenPatch (cold-mix with RAP)
- Meon Permafyx (MMA-based cold-mix)



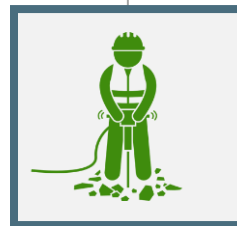
### Trial Methods

- A, B, and C road sites in NLC
- 27-28<sup>th</sup> February and 11<sup>th</sup> – 12<sup>th</sup> April 2024
- Creation of 18 simulated potholes and 18 patches 2m apart on 'Amber' roads



### Control and Benchmark

- Benchmark solutions: HRA and standard cold-mix material
- Applied on the same road, same size potholes, same operatives, and same weather



### Operative Feedback

- Health & safety implications of hot-mix mastic asphalt
- Openness and interest in MMA solutions
- GreenPatch is a simple switch from BAU

# Approach



## Materials Trialled

- 13 materials and methods demonstrated, including the same materials as the North Campus, as well as Colpatch, Roadpatch, and Velocity Patching



## Trial Methods

- A, B, C and old/new residential road sites across 6 combined authorities in West Midlands
- March – April 2024
- Tested on 'normal' potholes



## Control and Benchmark

- Applied on similar road types, in similar weather, and with oversight from core team



## Operative Feedback

- Difficulty with operational ease with some materials due to narrower conditions of use



## Next Steps

- Monitoring and evaluation of repair performance over the next 7 years
- Full carbon profiles in Carbon Analyser
- Transition to best performing materials as BAU in TfWM LAs

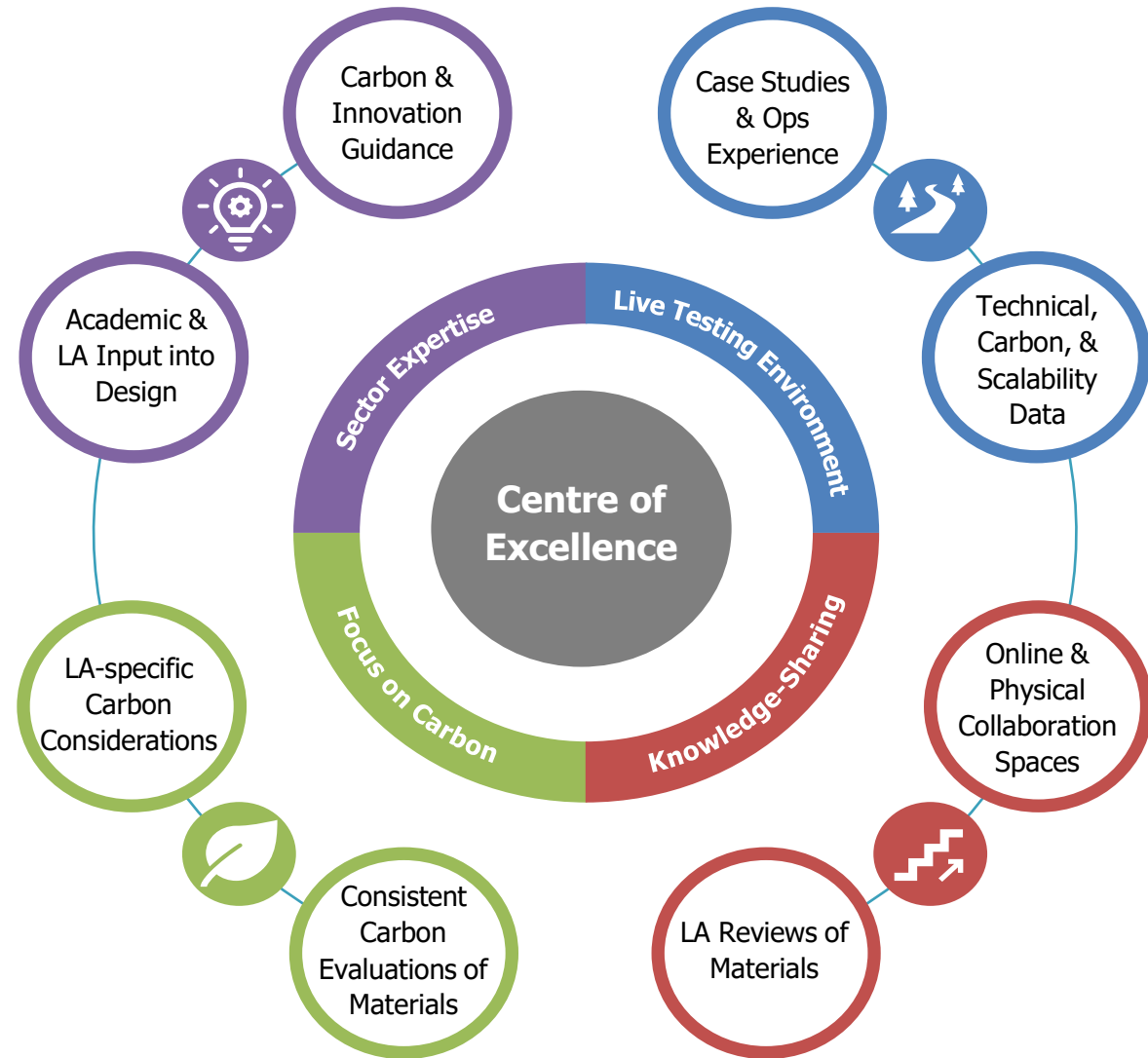
## Initial Results

**Carbon: est. 37.5% saving for GreenPatch**





# The Knowledge Bank



# Next Steps

Key milestones in 2024

## Market Scanning & Trials

- Signage – signposts and signfaces
- Resurfacing & Surface treatments
- Concrete solutions

## Material Evaluations

Full carbon and technical evaluations of materials, with support from University of Nottingham, Aston University and FHRG

## Industry Playbook

Creation of best practice and guidance for LAs to identify, trial and evaluate low-carbon materials, with support from Connected Places Catapult

## Knowledge Bank

Launch of the knowledge bank at the end of 2024, ready for LAs to use

# How Can You Get Involved?

Join the UK-wide movement to decarbonise road materials

▶ **Get in touch to partner with us**, share your innovation experiences and get first access to the knowledge bank

▶ **Share innovations for materials testing**, gaining access to sector leaders and live trial sites

▶ **Complete our survey for local authorities** so we can provide the most value for the sector through our live trials

 [info@decarbonisingroads.co.uk](mailto:info@decarbonisingroads.co.uk)

 [www.decarbonisingroads.co.uk](http://www.decarbonisingroads.co.uk)