



2024

INTRODUCTION

15/02/24



WHAT IS THE NATIONAL RETROFIT HUB?

The National Retrofit Hub is a **nonprofit collaborative organisation** that brings together all those involved in the retrofit sector to share their expertise and work together to **enable the local delivery of retrofit at scale in line with a National Retrofit Strategy.**

THE PURPOSE OF THE HUB



THE HUB HAS BEEN ESTABLISHED TO:



Collaborate

Engage with all retrofit stakeholders to gather information and identify gaps in activity.



Empower

Provide access to, and share, knowledge to boost industry efforts and enable application of best practice.



Facilitate

Enable collective leadership, good governance and policy engagement.

THE CHALLENGE... AND OPPORTUNITY



THE HUB HAS BEEN ESTABLISHED TO HELP CONVENE THE INDUSTRY

- There are **28 million homes** that need upgrading to achieve net-zero carbon emissions for the UK by 2050.
- In 2021, the Construction Leadership Council (CLC) published the **National Retrofit Strategy**, identifying the need for greater industry collaboration, coordination and leadership.
- All corners of industry need support to understand their role and how to build around the **8 core components** identified in the strategy.

THE 8 CORE COMPONENTS OF THE NATIONAL RETROFIT STRATEGY:

1. Leadership and
communications

2. Supported
transition and a
**research &
innovation culture**

3. Performance
standards

4. Finance and
grants

5. Training and
accreditation

6. Materials and
equipment

7. Creating
customer demand

8. Compliance and
quality regime



THE HUB'S ROLE

THE CHANGES WE MAKE WILL BRING MEANINGFUL BENEFITS:



REDUCED GRID LOAD
+ ENERGY SECURITY



INNOVATION
AND GROWTH



NEW JOBS



REDUCED
ENERGY BILLS



COMFORTABLE,
HEALTHY HOMES



REDUCED
EMISSIONS

By working together across the **whole retrofit community** and bringing our shared expertise together, we can start to enable the delivery of **housing retrofit at scale.**



THE HUB'S ACTIVITIES



INDUSTRY COLLABORATION WILL SUPPORT OUR ENABLERS:



WORKING GROUPS

Six thematic working groups focused on **leveraging existing resources** to remove barriers and facilitate the delivery of retrofit.



ADVISORY PANEL

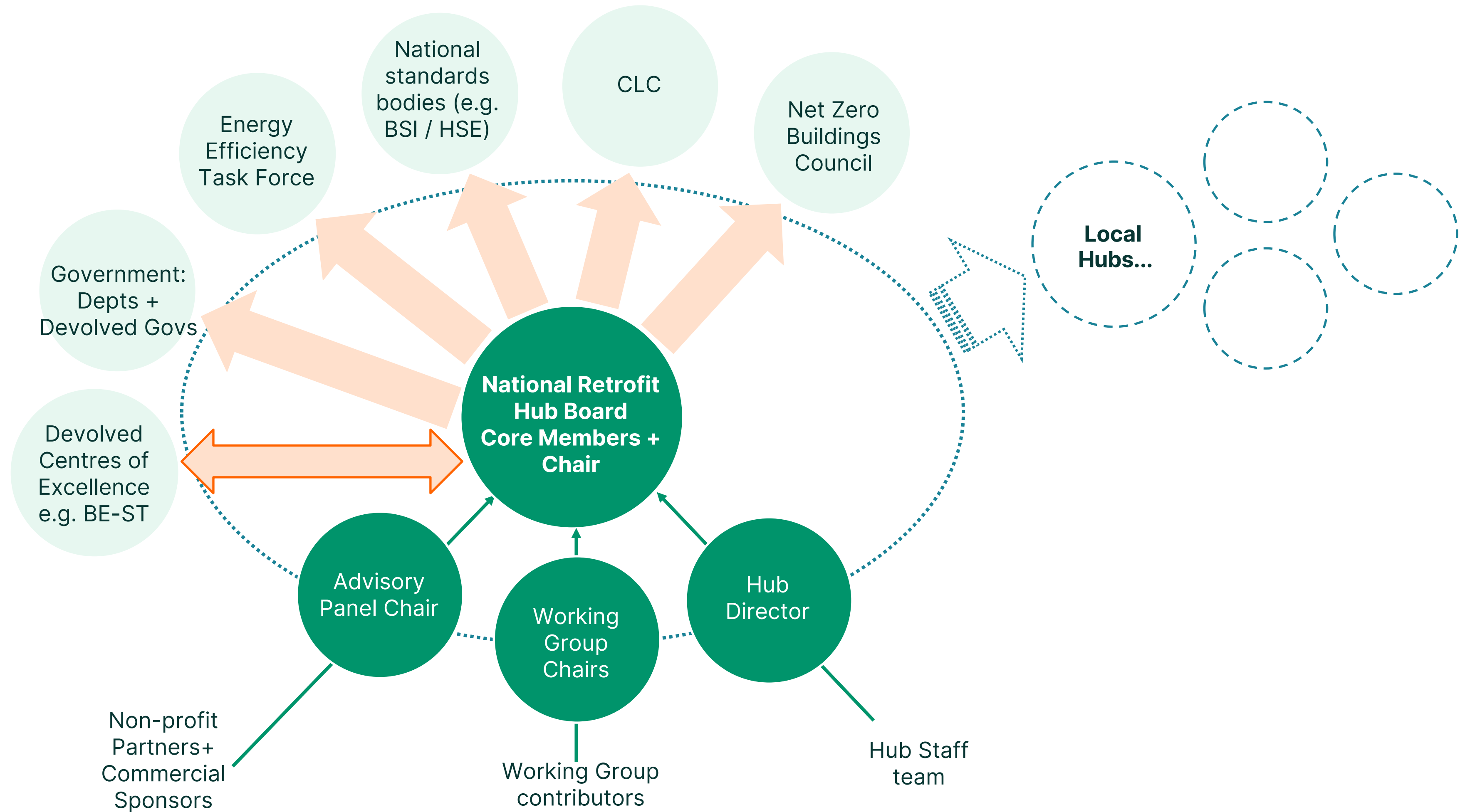
Independent panel involving the Hub's partners and sponsors to **advise on the activities and priorities** of for Hub.



KNOWLEDGE BASE

Sharing of relevant best practice guidance information and knowledge to **help organisations in the delivery of local retrofit**.

PROPOSED GOVERNANCE



THE HUB'S WORKING GROUPS



AN INDUSTRY WORKSHOP CONVENED IN JUNE 2022
IDENTIFIED SIZE CORE THEMES FOR WORKING GROUPS

WARM, HEALTHY, NET ZERO

WG1

- Standardised solutions for performance and technology
- Digital whole house plan
- Performance criteria, monitoring and data collection

SUPPLY CHAIN, PRODUCTS & SOLUTIONS

WG2

- Delivering a solution agnostic approach to products, technologies and services
- Overcoming barriers to supply chain and innovation

WORKFORCE GROWTH & SKILLS DEVELOPMENT

WG3

- Skills accreditation and competencies definitions
- Curriculum reform: links with broader climate change education and LA training

FINANCE

WG4

- Improved assessment process linked to whole house plan and carbon savings
- Funding through LA government initiatives

DELIVERY APPROACHES

WG5

- Demand aggregation
- Skills and requirements for LA retrofit programmes
- Local supply chain engagement/mobilisation

DRIVING UPTAKE

WG6

- Public awareness campaign
- Long-term policy drivers
- Overcoming planning barriers

Partners, sponsors and industry experts are welcome to **join a working group** by completing an expression of interest form on our website.

**WORKING GROUP 1
WARM, HEALTHY,
NET ZERO HOMES**



WG1 PROGRESS



This group will enable the **exponential increase in good quality retrofit** across the UK, for and appropriate to all housing types and tenures, by:

- Developing essential tools, guidance, and resources for large-scale retrofit projects.
- Enabling access to open-source data for informed decision-making.
- Fostering industry collaboration for data exchange.
- Exploring diverse strategies for mass housing retrofit, considering various building types and ownerships.



Working Group: 1. Warm, Healthy, Net Zero Homes
Board Member: Lynne Sullivan
Group Chair: Dr. Ahsan Khan
Technical Lead: Toby Cambray

Core Mandate (Mission statement, purpose)

To enable the exponential increase in good quality retrofit across the UK, for and appropriate to all housing types and tenures. The group will enable this change by facilitating the production of the tools, guidance and resources needed to identify, design, fund and plan measures, suitable for delivery at scale and meeting required performance improvements.

The UK's housing stock is made up of different types that vary by: form, construction type, location, age, condition, heritage value, tenure and more. All types have different opportunities and constraints with respect to retrofit. Current standards (such as EnerPHit or MEES) expect similar levels of performance from all retrofitted homes regardless of typology or setting, however the extent to which you can improve different types varies.

The work of this group will enable everyone involved in retrofit to access open-source data, tools and guidance that will allow them to make coherent decisions about each building, quickly and effectively. The group will work with others to develop the structures necessary for the industry to create and exchange this information.

The group will explore diverse approaches to the challenge of retrofitting housing stock en-masse, maximising opportunities for demand reduction and decarbonisation, while understanding and responding to the varying constraints of a range of building types and ownerships.

Working Group Approach

The group will form small teams on an ad-hoc basis to take on tightly defined Tasks.

The group has identified four key themes:

- What is the home and what is the target? National data-sets, Archetypes, & access to detail pattern books
- How can I map or decide what is needed and how to go about getting it, how intrusive, and how to get the finance. HSP/Building passport based, with data process underpinning
- How can I be confident the work will be done well? QA scheme resolution, with data process underpinning. Avoiding unintended consequences
- How will I know that it performs as promised? Handover and Aftercare, SPE route map / Redress process, with data process underpinning

The group should identify collaborative partnerships, where collective works can be undertaken, or information shared eg: where top-down stock modelling is taking place. This will include deciding when formalised channels for collaboration are required, eg: this group could identify work packages and subcontract these to consultants / sponsors.

Key considerations that the group may choose to embed within their work include:

- The role of up-front and embodied carbon
- The relevant metrics (targets) for different building types

Key Outputs Required to Achieve Mandate

Standard Framework for Clustering (open-data): working with CDI and other external organisations the group will explore what data is currently available, what is missing, and develop proposals for interfaces to this data which would allow a retrofit actor to identify clusters of homes, or archetypes, for at-scale retrofit work packages. This will include identifying what digital tools exist and which organisations play a role in developing these further to enable different types of at-scale delivery, such as by community groups, mortgage providers, local authorities etc.

Building Log-Books: consider the role of building passports or log-books, developed from and interfaced to the open-data work described above. These could allow a building user to access specific information for their home on the current

Briefing Note



The group has identified four key questions for retrofit stakeholders:

- **What is the home and what is the target?**

Considering: National data-sets, Archetypes, & access to detail pattern book

- **How can I map or decide what is needed?**

Considering: Building passports, finance compatibility, disruption

- **How can I be confident the work will be done well?**

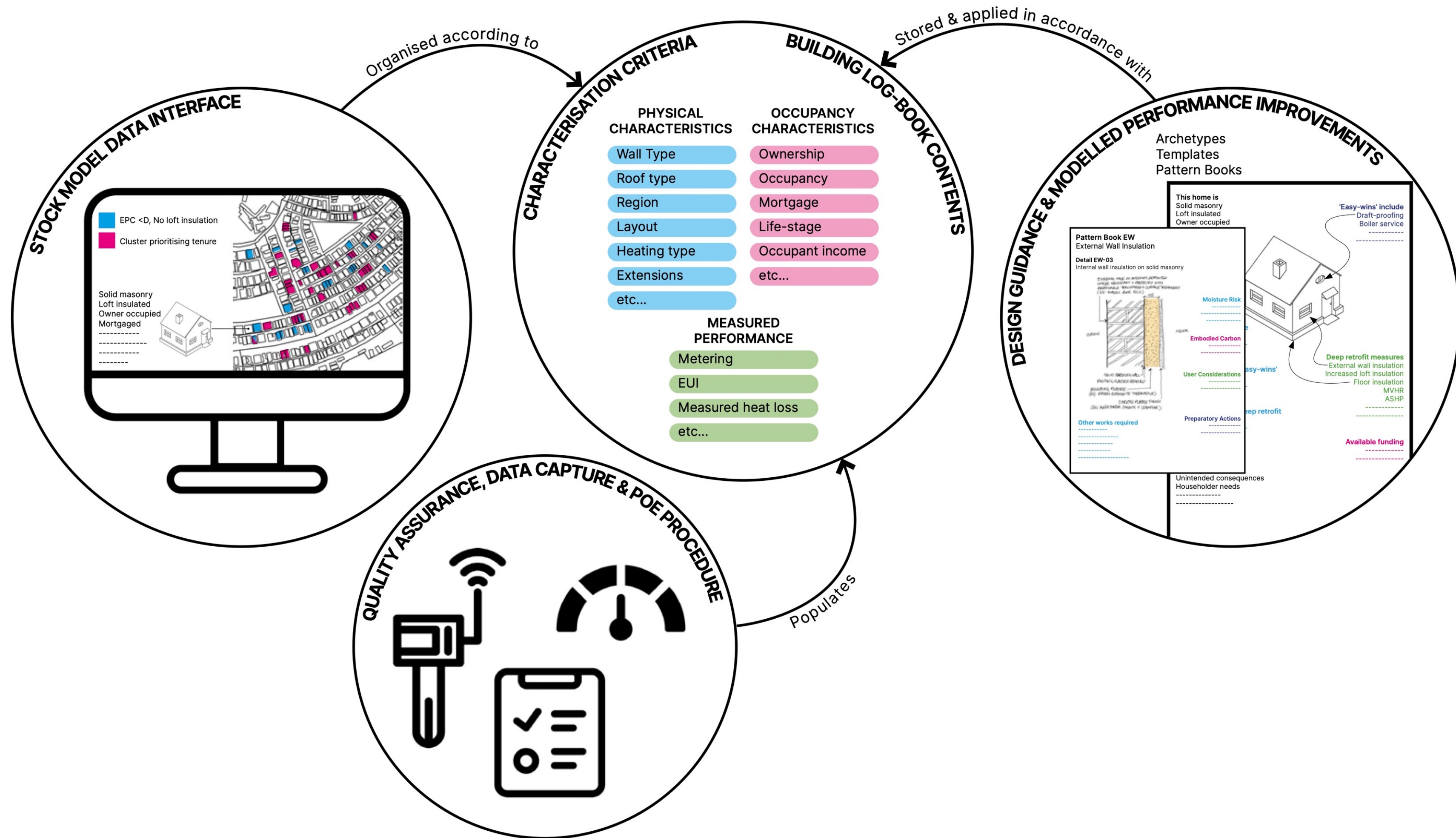
Considering: QA scheme resolution, unintended consequences

- **How will I know that it performs as promised?**

Considering: Handover and Aftercare, BPE route map

The solutions to these questions will be built off an underpinning data process.

WG1 PROGRESS



WORKING GROUP 2
**TECHNOLOGY &
TECHNIQUES**





WG2 PROGRESS

CORE THEMES

Delivering a solution agnostic approach to products, technologies and services

- Energy efficiency, building fabric and ancilliary measures
- Decarbonised heating systems
- Smart controls and performance improvement
- Climate change adaptation, health and wellbeing

Overcoming barriers to supply chain and innovation

KEY OBJECTIVES

Ensure that a solution agnostic approach to retrofit is taken by the NRH

Showcase the range of products, solutions and innovations available for retrofit

Identify and overcome barriers to supply chain for delivery of retrofit

Identify and overcome barriers to market uptake of innovative solutions for retrofit

**WORKING GROUP 3
WORKFORCE GROWTH &
SKILLS DEVELOPMENT**



WG3 PROGRESS



A research phase with a call for evidence was completed in the Summer. This was used to map the training and skills available or in-progress and to identify any gaps. Task and finish groups are producing Theories of Change for each of these themes.



1: Roles / qualifications / pathway

Appraisal & development of the entire breadth of roles, skills and critical attributes required to support the retrofit supply chain; mapping career pathways & developing appropriate accreditation and qualifications including non-traditional training routes

Background / current status
 Requirement for PAS 2035 and 2030 on government funded work has driven training in these roles
 Rapid growth in new qualifications
 New occupational standards being developed such as retrofit co-ordinator
 Qualifications landscape evolving with move to T-Levels
 Focus on accreditation
 Directory of qualifications in development

Key gaps / issues and impacts
 Some roles such as resident engagement and care not yet defined
 Missing qualifications like retrofit design, offsite/MMC
 Retrofit underrepresented in construction training including T-Levels, new multi-trade builder apprenticeship
 New apprenticeships slow to develop and approve

Goal
 Clearly defined retrofit roles that underpin retrofit-aligned occupational standards & qualifications. Construction training to foreground retrofit skills on par with new build; well publicised retrofit career pathways

2: Training providers / infrastructure

Ensure that training providers across FE, HE and private sector are systematically equipped, staffed and funded to meet rapidly evolving retrofit and training needs

Background / current status
 Stop/start nature of retrofit funding has left colleges unwilling to invest
 Many colleges and provide training providers using bootcamp funding to offer a limited range of retrofit courses
 Development of 'informal training' eg Supply Chain Sustainability School
 Novel methods such as 'Heat Geek'
 Development of training rigs

Key gaps / issues and impacts
 Patchy provision across the country
 Lack of trainers and assessors
 Not enough onsite training, too much online so learners not ready to work
 Too much focus on single skill training which reduces efficiency and whole house understanding
 Many construction learners don't go on to work in construction sector
 Lack of co-ordination between different education providers in a region

Goal
 Training across the country that equips school leavers & workers of all ages & backgrounds to enter retrofit workforce; backed by strong teacher support network & nationwide training rigs to support classroom / online learning

3: Private purchase / SMEs

Provision of retrofit upskilling for SME general builders and heating engineers servicing the privately-purchased market

Background / current status
 Shortage of construction workers
 General builders have big pipelines, don't need retrofit work
 Over last 2 years 60% of builders have been asked about energy efficiency (Travis Perkins)
 Heat Training Grant for heat pump training for gas heating installers

Key gaps / issues and impacts
 Perceived uncertainty of demand for retrofit/heat pumps (hydrogen etc) reduces incentive to retrain
 Full pipelines mean builders lack incentive to upskill
 Bureaucratic and costly to take on apprentices
 Lack of training and support to set up new building businesses
 No certification scheme for privately purchased retrofit

Goal
 General builders & heating engineers equipped with sufficient knowledge / experience of energy & building physics to offer & deliver high quality retrofit & heating upgrades without unintended consequences

4: Procurement / project practice

Leverage power of public-sector procurement to a) drive best training practice across direct market force, increasing incentives to invest in workforce skills and b) challenge & change flaws in current practices (contracts/ KPIS / trade silos /skills gaps)

Background / current status
 Project practice has evolved from construction; market in early development / low growth / pre-scale but not fit for purpose
 Retrofit is not like other areas of construction - complex, relational, needs integrated approach / different skill set / metrics
 Attempts to scale showing gaps in practice - whole of house knowledge, trades working in silos, misplaced contractual focus, no incentive to invest in direct workforce training.
 Ever-declining cycle, not thriving as it should be given demand and need for scale.

Key gaps / issues and impacts
 Low incentive to invest in training plus 'biz as usual' practices reinforce systemic errors
 Contracts predicated on cost /time rather than quality /efficacy; trade silos reinforced.
 Squeeze on workforce during funding tranches show capacity issues & risk slicing, BUT poor incentive for employers to offer worker training / job security
 Scope to shake up programme design & drive best practice / shift contract focus & transform skills approach throughout supply chain

Goal
 A shake up of procurement & project practice, defining new contractual standards to be demanded by funders; rewarding 'good' clients who invest in workforce skills & measure outcomes on quality, not cost.

5: Workforce growth / strengthening

Addressing systemic weaknesses in current retrofit workforce makeup including low pay, uncertainty, trainer shortage & culture that inhibits diversity & gender inclusion; strengthen pipeline to drive recruitment & retention of a resilient workforce in 'fair jobs'

Background / current status
 Growing awareness of complex / integrated skills needed for retrofit in construction
 Low awareness of retrofit as a viable, valuable job within careers sector;
 Years of inertia & underinvestment = inadequate people to fill growing supply chain
 System & practices inherited from construction - including macho culture; makes sector unattractive to valuable segments (gender/ ethnicity)

Key gaps / issues and impacts
 Lack of people in pool due to ageing construction, Brexit, other demographics
 Low awareness of retrofit as a viable career at all life stages including switchers / returners
 Recruiters don't know understand or promote
 Big shortage of skilled workers for scale of task
 Insufficient trainers / mentors
 Complex, technical, demands practical experience, not just theory
 Not enough bodies, time, training capacity
 Shocking lack of diversity

Goal
 National awareness of retrofit as a high value career choice, attracting a strong pipeline of diverse recruits to qualify & stay in secure, fair retrofit careers; resilient, organised workforce, embracing diversity, professional pride & job security

6: Finance / policy

Influencing the structure of retrofit funding initiatives to foster workforce resilience, engender best practice & drive fair jobs & skills; securing funding for training & skills development initiatives. All other policy and funding asks deriving from T&F groups 1-5

Background / current status
 Historically low investment in skills with no incentive for stakeholders to build resilience into sector / retrofit workforce
 Stop-start project funding with high deliverables & impossible deadlines exacerbating; no time to build a pipeline
 Sub standards skills 'have to do' in face of immediate pressures / shortages
 Current fiscal environment not fit for purpose; the UK risks failing to deliver on legally mandated national decarbonisation targets

Key gaps / issues and impacts
 Funding and strategic support for skills patchy
 Good initiatives / skills building at regional level, but often forced to be tactical / reactive
 Distinct lack of a top-down national strategy and woefully inadequate funding
 Signals to market, educators and would-be recruits weak / inconsistent
 Nation is not geared up to deliver the low carbon future it needs

Goal
 Adequate funding and policy support to enable systemic change & re-organisation of the contractual and cultural landscape in which retrofit skills are developed and delivered. Policy & funding asks for initiatives in T&F groups 1-5 met & delivered



WORKING GROUP 4

FINANCE



WG4 PROGRESS



Working Group 4 is jointly hosted by **Bankers for Net Zero (B4NZ)**, **Green Finance Institute (GFI)**, and **Grantham Institute LSE**.

The aim of this working group is to:

- Share information regarding the mobilisation of finance towards retrofit at scale.
- Develop a shared understanding of the issues and challenges and of the solutions to address them.
- Facilitate collective leadership by the sector.

The first working group meeting identified some key areas of focus:

- Current financial products and levers that will enable these to scale
- Policy changes required for the financial sector
- Incentives for consumers and landlords
- Innovative financial models that are emerging
- The role of banks as a trusted high-street presence, and how banks can support customers on their retrofit journey

WG4 PROGRESS

The second meeting, chaired by the **Green Finance Institute** was a closed roundtable, exploring the perceived and real barriers to retrofitting and uptake of green finance, with the ambition to ‘myth bust’ and foster greater collaboration. Insights paper available online.

Next steps: engage with Integrated Financial Delivery models, including projects receiving Green Homes Finance Accelerator funding



Attendees	
Emma Harvey-Smith	Green Finance Initiative (Chair)
Rachael Owens	Co-Director National Retrofit Hub (Co-director)
Sara Edmonds	Co-Director National Retrofit Hub (Co-director)
Jonathan Atkinson	People Powered Retrofit, Great Manchester
Rafe Bertram	Enfield Council, London
Chris Brown	Climatise
Heather Buchanan	Bankers for Net Zero
Tonia Clark	Birmingham City Council
Elliot Cyriax	Bankers for Net Zero
Matt Faretti	Green Finance Initiative
Dan Godsall	Barclays, Sustainable Finance Team (Delivery Director)
Steph Landymore	Ecology Building Society
Tim Lunel	Low Carbon Hub, Cosy Home Oxfordshire, Low-interest loan scheme
Chris Obrian	Nationwide
Ian Preston	Centre for Sustainable Energy (Director)
Amelia Williams	Nationwide
Cerys Williams	Sero

WORKING GROUP 5 DELIVERY APPROACHES

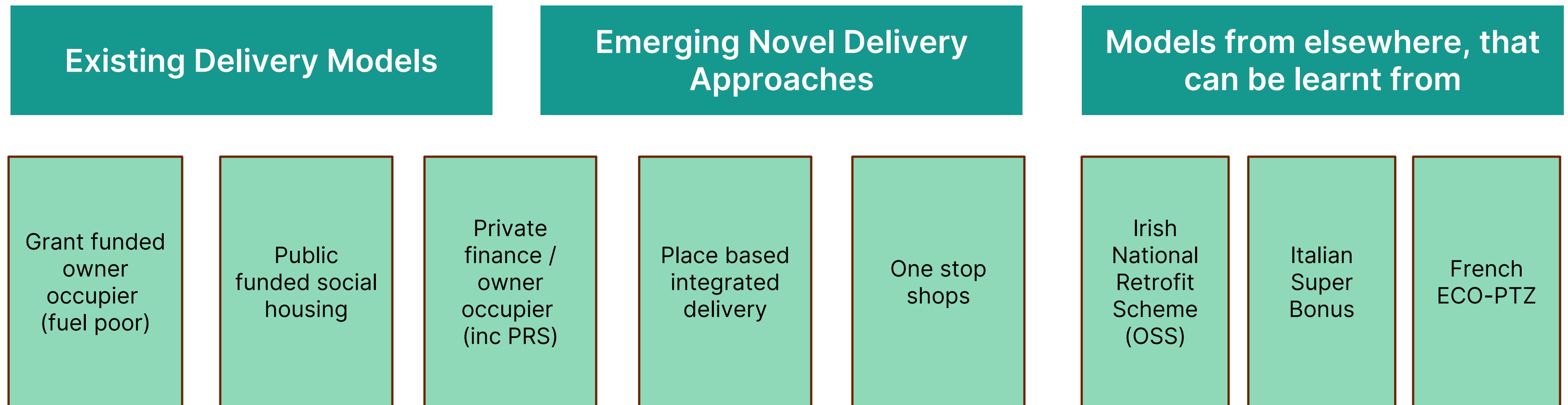


WG5 PROGRESS

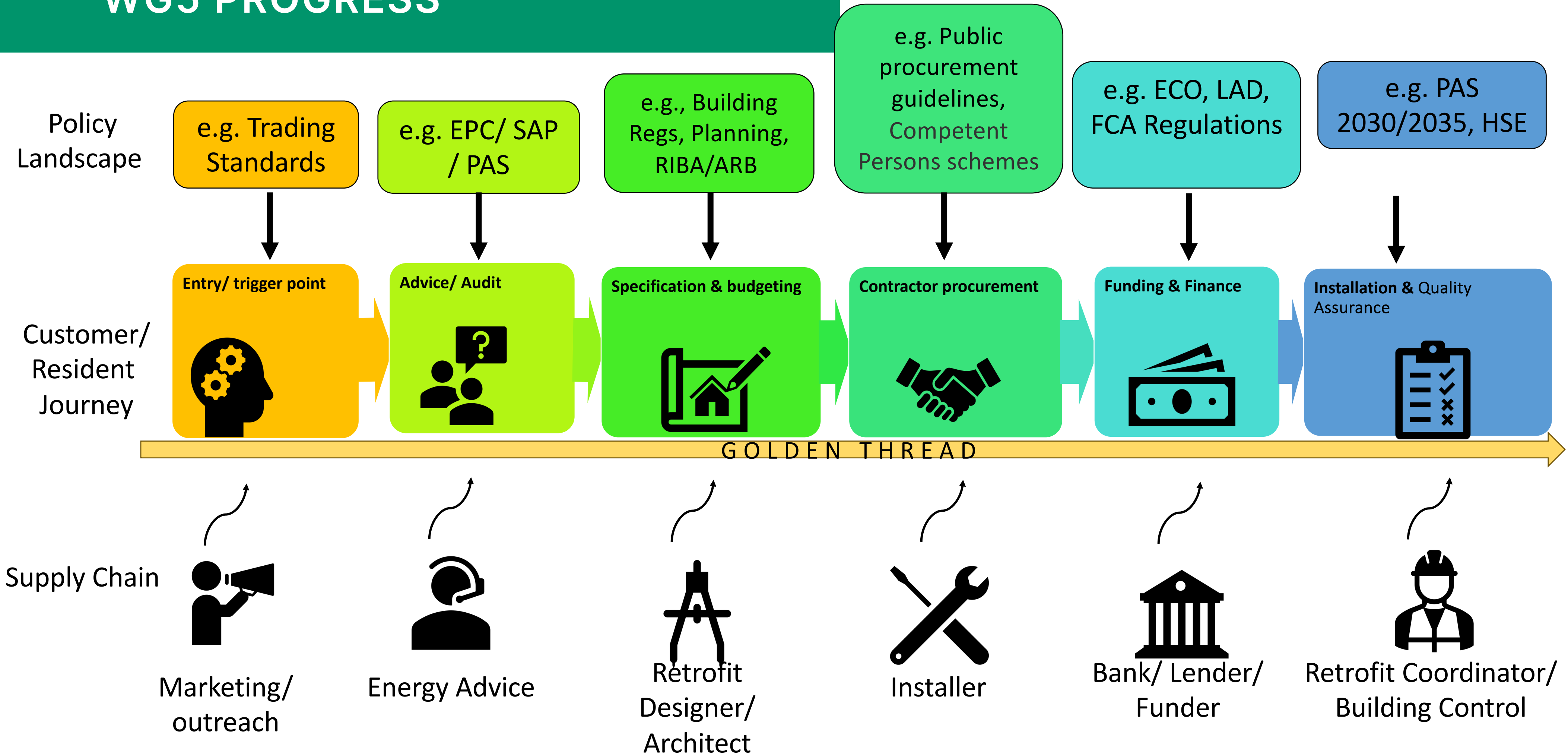


This group was created with a mandate to identify opportunities to enhance, improve, and escalate existing models of delivery to meet our national targets and investigate new models of delivery to enable the delivery of retrofit at scale.

Currently investigating the scale, scope and effectiveness of:



WG5 PROGRESS



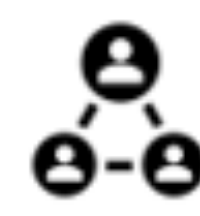
WG5 PROGRESS



Example of delivery analysis / feedback gathering

ECO

Workshop Analysis



Challenges Faced

- Lack of understanding combined with not knowing managing agents/installers hampers take up
- Potential falsification of EPCs and the low quality of them means subsequent designs and works not correct
- Lack of supply chain in general and qualified contractors means works can be slow to be delivered and with solutions being put on homeowners means people aren't championing the scheme
- Funding often doesn't cover cost of compliant ventilation systems or repairs/enabling works (which can sometimes be considerable)

Policy Environment

- Lack of trust from homeowners and the supply chain due, in part, by an unstable, short-termist policy environment
- Not delivering low carbon systems, due to focus on 'upgrading boilers' as simplest way to meet EPC target and reflecting current supply chain capacity
- Methodology behind EPC must be updated regularly to ensure measures do deliver on benefits.
- Potential holding back of ECO potential by energy companies due to a lack of incentives and enforcement by government
- Policy is increasing in complexity which could be increasing the cost of compliance and hampering take up

Best Practice

- Netherlands: EnergieLabel scheme offering €300 assessments with mortgage rates linked to building performance
- Germany: combination of grants, finance and support creating 'valued' services (€1,600 for retrofit assessment but 80% covered by grant)
- Ireland: offer grants and support with eligible contractors audited by a third-party who also carries out checks of works.
- Community groups delivering Retrofit Assessor and Coordinator services (such as Zero Carbon Harrogate).
- Although with its issues at least ECO4 exists and ECO LA Flex can help councils deliver initiatives more efficiently



WORKING GROUP 6 DRIVING UPTAKE



WG6 PROGRESS



First meeting held 1st December

Chair: Cara Holmes – Citizen's Advice (author of Demand: Net Zero)

Group mandate:

- Identify solutions to embed retrofit knowledge and understanding into all processes, interactions, decisions, communications relating to home improvement and upgrade
- Create a mindset shift within the general public to link the thermal / energy performance of their homes with their energy bills
- Promoting the value of a well performing home in terms of occupant health, wellbeing and comfort
- Promoting and working with others to create good quality information for householders on energy efficiency retrofit, suitable for their house type, local area and lifestyle
- Identifying what policy changes might incentivise residents to start the retrofit process
- Connecting people with funding and financing opportunities for retrofit

WG6 PROGRESS



Three initial 'Task and Finish' groups:

LITERATURE REVIEW & STAKEHOLDER MAPPING

- Literature review on retrofit demand research
- Mapping who is involved in driving uptake
- Mapping existing work and gathering best practice to understand insights on support, engagement, etc

UNCOVERING THE BRIEF & DEVELOPING A THEORY OF CHANGE

- With working group 5
- Theory of change for retrofit pathways with SMART targets
- Focus on resident journey
- Identifying policy change required

PERSONA MAPPING

- Identifying decision markers and key personal characteristics
- Considering people's priorities, agency, and appetite for risk
- Understanding existing power structures, who is excluded or is without agency

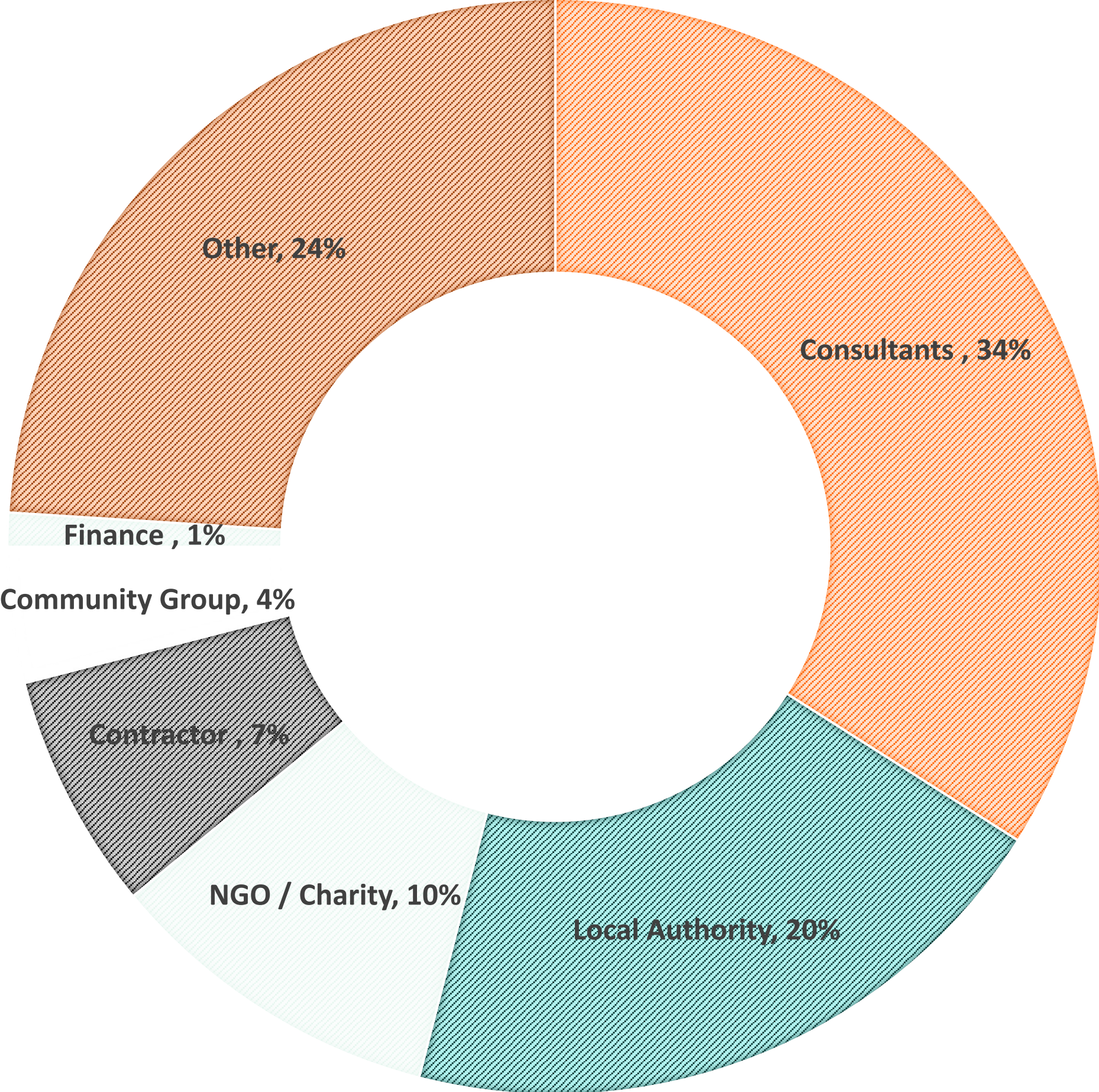


Knowledge Centre

User survey results

120 RESPONSES →

113 INFORMATION SOURCES REFERENCED



User survey results

TOP 3 MOST WANTED TYPES OF INFORMATION

#1 Example retrofit plans for Housing archetypes

#2 Guidance on best practice detailed design for designers, contractors and inspectors

#3 Project creation and development case studies

User survey results

ON THESE TOPICS MOST PEOPLE SAID
“NEW INFORMATION IS REQUIRED”

Guidance on available funding and leveraging collective purchase power

Advice on managing retrofit disruption to building users, and examples of how to communicate and overcome this

Signposting to regionally specific resources and training/skills pathways hosted by other partner organisations

User survey results

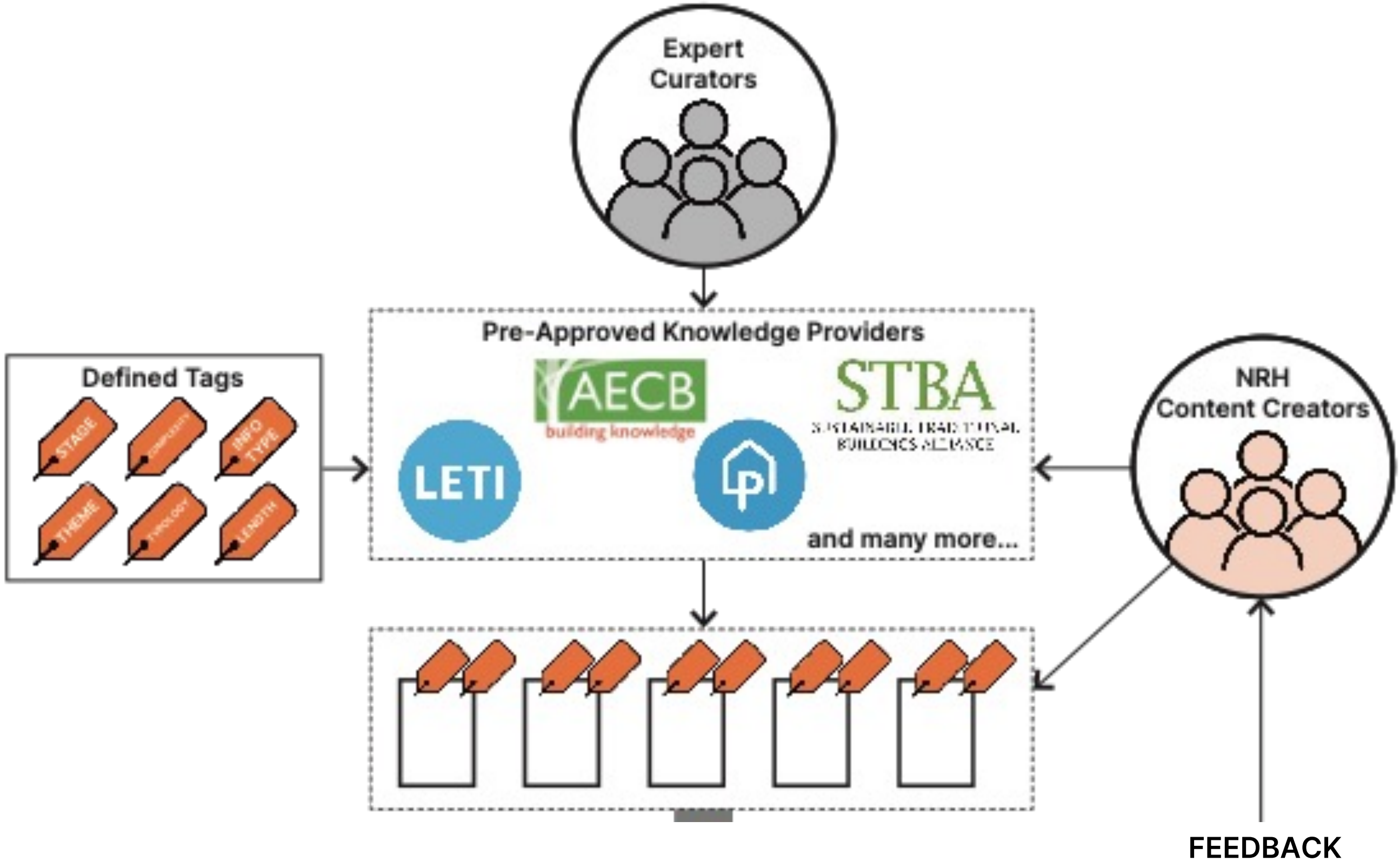
ON MOST TOPICS PEOPLE SAID

“Some information already exists on this, but there are gaps / inconsistencies”

8/10 average

How valuable on a scale of 1-10 would this resource be to your retrofit projects?

SIGNPOSTED RESOURCES



INTERNAL RESOURCES



Working Group 1

Retrofit Design Guidance

- Archetypes / templates
- Pattern books
 - Example specifications

Working Group 2

Techniques & technologies

- Supply chain
 - Installer information
- Technologies explained

Working Group 3

Workforce Growth & Skills

- Training best practice
- Training plan guidance

Working Group 4

Finance

- Types of finance
- Routes to access

Working Group 5

Retrofit Delivery Models

- Case studies
- Business models
 - Customer segments

Working Group 6

Engagement & Communication

- Toolkits
- Messaging advice
 - Community guidance

KNOWLEDGE CENTRE

AI Proof of Concept Process



NRH team identified and uploaded a series of existing resources on retrofit

NRH team asked AI bot questions covering each of the topics from the working groups

Refined language and types of answer working with BrightMinded

Tested long-form, short-form and signposting type answers

Judged quality of answers received.

GET INVOLVED

1. Sign-up to our newsletter
2. Join our working groups
3. Get in touch if you'd like to become a partner or sponsor

**OPEN MEETING!
21ST FEBRUARY 10AM**

nationalretrofit.org.uk

Dear Rachael


It's the start of a new year, and one that we hope is going to see **lots progress towards scaling housing retrofit in the UK**. We're very excited for what is planned next in our Working Groups, after the appointment of our new Technologies & Techniques Co-Chairs, as well as the big steps we've already taken.

We are delighted to share a **new 'Qualification and Training Map'**; one of the first outputs of our workforce Growth & Skills Development Working Group, which you can find out about below, as well as other important initiatives from our community.

Don't forget to take a look at the key dates of important retrofit events below, or take a look at our dedicated [events page](#) to find more throughout the year!

Kind regards
The National Retrofit Hub team

NATIONAL
RETROFIT
HUB



**NEW RESOURCES FROM WORKING GROUPS
AND MORE FROM OUR COMMUNITY**



NEW QUALIFICATIONS & TRAINING MAP OUTPUT FROM WORKING GROUP 3



THANK YOU