Future Homes Hub

The home of the future

HBF Technical Conference

Richard Lankshear, Programme Director

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Agenda

1. Working with the new government
2. The home of the future
3. Project update
    - Biodiversity net gain
    - Whole life carbon
    - Low carbon homes demonstrator projects
    - Net zero roadmap
    - Future homes standard

Plans from the new government

We will build sustainable homes at scale

- Build **1.5 million new homes over the next parliament**...restoring mandatory housing targets
- Take a brownfield first approach... and release of lower quality ‘grey belt’ land with ‘golden rules’ to ensure development benefits communities and nature.
- build a new generation of new towns... alongside urban extensions and regeneration projects
- ensure **new development provides more affordable homes**
- [make] **exemplary development the norm not the exception**, building more high-quality, well-designed, and sustainable homes and creating places that increase climate resilience and promote nature recovery.
- implement solutions to **unlock the building of homes affected by nutrient neutrality** without weakening environmental protections.

One Plan

The Challenge

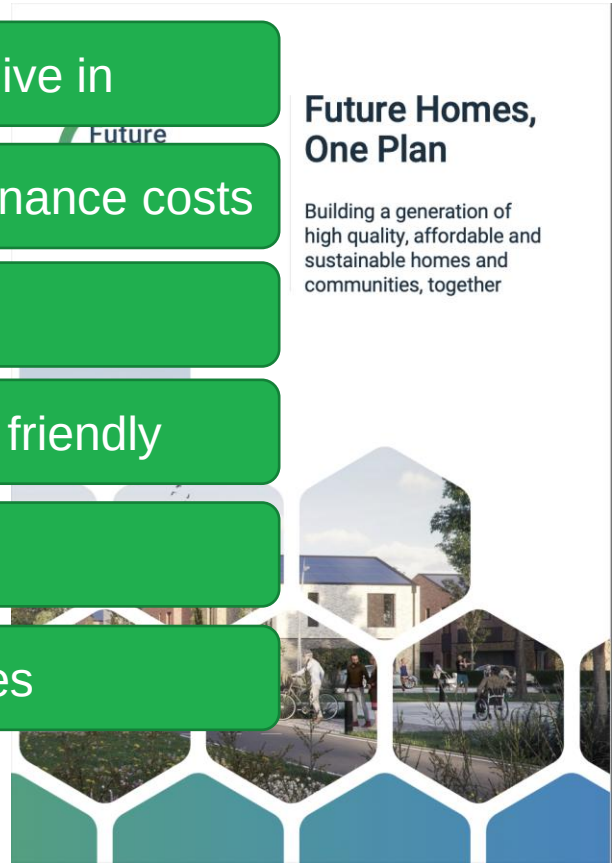
Delivering 6 million new homes while fully decarbonising our economy, helping lead the world in preventing catastrophic climate change, improving the natural environment against a backdrop of decline and adapting to a rapidly changing climate.

1. **A severe shortage of homes**
   - Population of UK set to increase by 4m by 2050
   - Shortfall of 4.3m new homes built between 1955 and 2015
2. **Facing catastrophic climate change**
   - Hottest 10 years in UK have occurred since 2010
   - 17 % of carbon emissions from homes
3. **Natural environment decline**
   - 43% decline in bird species since 1970
   - 15% increase in water demand by 2050 coupled with 15% reduction in water availability

The Opportunity

To plan and innovate to create a generation of new homes and places that benefit customers

- Comfortable and healthy to live in
- Low energy bills and maintenance costs
- Smart to manage
- Planet friendly and planning friendly
- Fit for the future
- Designed for changing values



Delivering 1,500,000 homes

Opportunities to support required structural change

- Identify the **skills** required to deliver sustainable homes at scale and work with sector partners to forecast need
- Explore development of **placemaking guidance/standards** to simplify planning approval, creating places and developments that are low-carbon, nature-rich, resilient, healthy and well-designed.
- Develop **long-term transition plans** for carbon and the environment to provide certainty for investment and innovation.
- Reduce inconsistency in standards or requirements by **defining consistent metrics** and help reduce divergence of local standards

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The home of the Future

The long-term roadmap

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Applies now

Policy outline announced

Future roadmap

	Up to 2025	2025-2030	2030-2035
Homes in use carbon emissions	Reduction of 31% (Part L)	Reduction of 75-80% Future Homes Standard 2025 (Part L)	Future Regulatory change 2030
Embodied carbon emissions (and resources)	Consistent measurement	Reduction of 15-35% by 2030	Reduction of 40-60% By 2035
Onsite construction carbon emissions		Phaseout of directly purchased diesel and for groundworks	Phaseout of all onsite diesel including contractors
Health, safety and comfort	Improved ventilation (Part F); Avoiding overheating (Part O) Fire safety, Grenfell report	Air quality Daylighting	
Water	110 litres per person per day	100 litres pppd SUDs Solutions to water and nutrient neutrality	90 litres pppd Water re-use and recycling
Nature	Biodiversity Net Gain	Environmental Net Gain	
Sustainable placemaking	Part S, electric charging	Design of sites for active travel	Location and design to reduce transport emissions

Cleantech homes

	2025-2030	2030-2035
TARGET:	Future Homes Standard 2025: 75% reduction in operational emissions	Future Regulatory change 2030: a possible next step
POSSIBLE METHODS OF DELIVERY:	• Heat pumps • PV • Increased use of heat networks	• Reduce peak loads with SMART controls and battery storage • Enable lower bills • Target building performance

Healthy, safe and comfortable

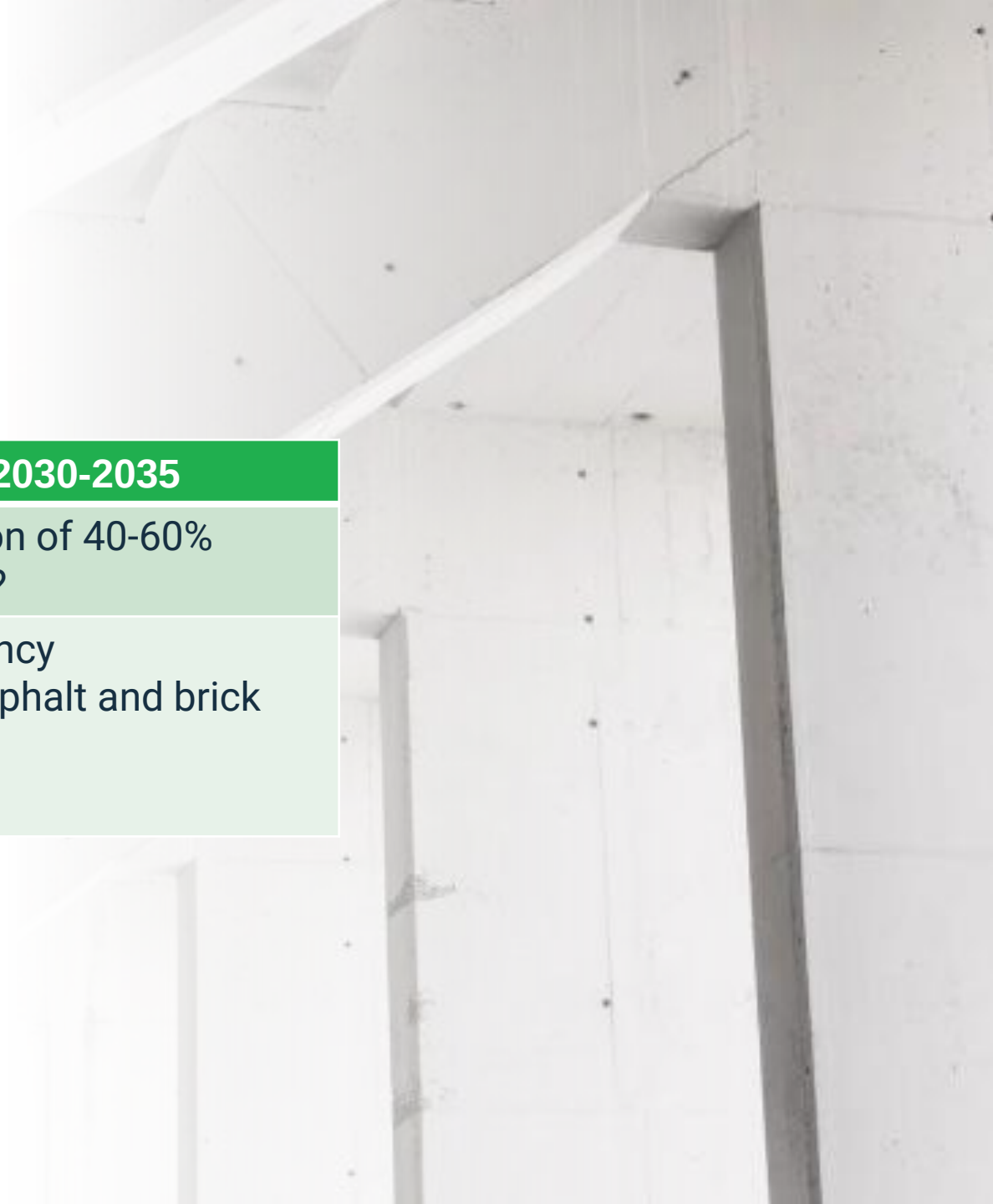
	Up to 2025	From 2025 to 2030
TARGET:	Better human experience	
POSSIBLE METHOD OF DELIVERY:	• Part F • Part O • Building safety	• Daylight • Air quality

Water

	From 2025	From 2030
TARGET:	100 litres (per person per day) SUDs	90 litres
POSSIBLE METHOD OF DELIVERY:	• Product innovation e.g. air boost showers • Solutions to water and nutrient neutrality in water	• Elements of water recycling and reuse • Solutions to water and nutrient neutrality in water

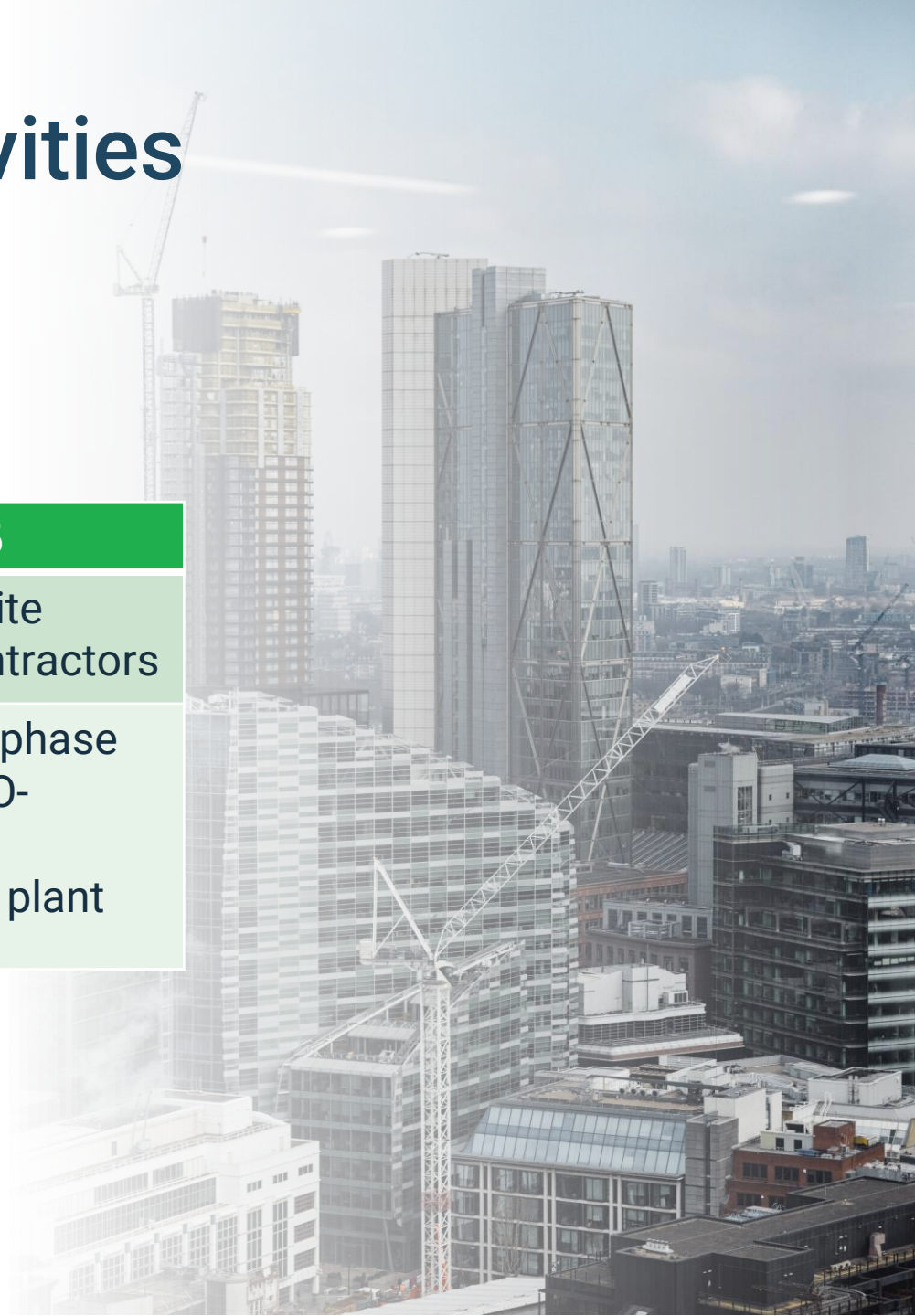
Embodied carbon

	2025-2030	2030-2035
TARGET:	Reduction of 15-35% by 2030?	Reduction of 40-60% by 2035?
POSSIBLE METHODS OF DELIVERY:	• Timber frame and design efficiency • Lower carbon concrete, steel, asphalt and brick • Reduction in waste on sites • More local purchasing	



On-site construction activities

	From 2030	From 2035
TARGET:	Phaseout of purchased diesel	Phaseout of all onsite diesel including contractors
POSSIBLE METHODS TO DELIVERY:	• Early move to HVO, focus on groundworks, phase out of diesel generators and switch to REGO-backed site electricity supplies • Longer term move to hydrogen and electric plant	



Nature

	From 2025	From 2030
Target	Bedding in of 10% Biodiversity Net Gain Onsite nature measures including swift bricks and hedgehog highways	• Review 10% BNG • Environmental net gain - ***expand the net gain approaches used for biodiversity to include wider natural capital benefits***, *such as flood protection, recreation and improved water and air quality.*

Sustainable places

From 2025	From 2030
Design of sites for active travel	Location and design of sites to reduce transport emissions and create more local living

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Project update

Biodiversity net gain

- BNG mandatory for new applications for major developments in February and small sites from April.
- Widely supported in principle, but notable issues remain

Issues

- Clarity around guidance
- Concern with offsite market
- Responsibilities of Local Authorities to police via S106
- Difficult to deliver on small sites
- Quality assurance of offsite providers
- Rules around phased developments

Tools and outcomes

- Guidance and signposting
- Process flow
- BNG Unit finder
- Offsets checklist
- Coordinated communications
- BNG Implementation Board

Whole life carbon

Preparing the sector for mainstream measurement

- Sector needs to coalesce around consistent reporting of whole life carbon to define the reduction pathway and measure progress
- Possibility of regulation, but important step either way.

Workstreams

1. Development of conventions and simple tool
2. Measurement and disclosure – pilot programme
3. Comparative study – low carbon options
4. Support EPD data being available and easily comparable.

Low carbon homes demonstrator projects

- 6 site visits in last 6 months
- 19 case studies published
- Lessons learned published in demonstrators digest

Overview of Project and Specification | Key learnings | Performance evaluation | The numbers

Location: Land North of A4130 Mersey Way, Didcot, Oxfordshire, OX11 7AD
Developer: Croudace Homes
Number of units: 6 flats and 4 houses

Aim(s) of Project: This Project is a Trial project to meet Future Homes Standards. Croudace is committed to building new homes that are future-proofed with low-carbon heating and world-leading levels of energy efficiency.
Construction method: Masonry with 100mm (houses) or 125mm (apartments) of insulation & a 50mm cavity
Energy Compliance method: SAP 2012
Overheating compliance method: NA

Construction start: September 2021
Construction finish: July 2023

croudacehomes

Future Homes Standard Implementation Board

- Develop **a shared timeline** for Future Homes Standard implementation, anticipating what needs to be done, by whom and when
- **Monitor progress** against that timeline and maintaining a dashboard of issues
- **Recommend how critical enablers** should deployed by whom
- **Identify gaps and interdependencies** and facilitate or commission work where needed
- Provide a mechanism for **feedback between industry and government**
- **Anticipate risks** that may prevent successful implementation and recommend mitigating actions
- Establish **implementation or expert groups** as required.
- **Identify communications gaps** including sharing of best practice across the industry, especially with SMEs

Future Homes Standard Implementation Groups

Heat pumps

- Forecast numbers (supply and skills)
- Guidance for site managers, designers, assessors, installers

Consumer

- Consumer journey best practice
- Guidance for sales teams and buyers

Fabric

- Identified information transfer (SAP-Designer-onsite)
- To create best practice guide to ensure onsite compliance and sensible design assumptions
- To determine how to develop and share viable details for microbuilders.

Building performance evaluation

- To be convened

Grid and demand flexibility

- Assessing ADMD calculation to recognise low carbon technologies
- To explore loadshifting/battery storage

Home Energy Model

- Initial meeting: raising key concerns and expectations

Heat Networks

- To provide clarification on regulation and clear guidancePo

Ventilation

- Programme to be developed

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www.futurehomes.org.uk

richard@futurehomes.org.uk