

Decarbonisation Webinar # 2 Delivering for the Housing Sector Insight report

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Event: Decarbonisation Series Webinar # 2
Date: 5 May 2022
Location: Online

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This report covers the second webinar in The Housing Forum's 2022 series to prepare the housing industry for the major challenge of Decarbonisation. This webinar addressed the current challenges and progress being made by members as we move towards the goals.

Next Webinar in the Decarbonisation Series:
[Decarbonisation Webinar # 3: 'Affordability for the Customer'](#)
[12 July 2022 May 13:30 – 15:30hrs.](#)

Round Table Hosts

Richard Johnson – Platform Housing Group
Daniel Love – Commercial Manager, Polypipe Building Projects
Thomas Bugler – Head of Marketing, Bugler Group

Speakers

Allan Dunsmore – Director, conisbee
Caroline Compton-James – Public Sector Director, Osborne and Deputy Chair of The Housing Forum
Ed Lockhart – CEO, The Future Homes Hub
Dan Bridgewater – Partner, Baily Garner
Daniel Love – Commercial Manager, Polypipe Building Projects
John Milner – Partner, Baily Garner
Richard Johnson – Platform Housing Group
Shelagh Grant – Chief Executive, The Housing Forum
Thomas Bugler – Head of Marketing, Bugler Group

The Housing Forum is grateful for the input of all speakers and round table hosts.

Key Topics

- Energy and Future Homes
- Embodied Carbon
- Decarbonisation Survey

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Webinar Themes

Timing

- Concern / belief that some targets may not be achieved.
- Pressure is coming from a lack of skills and ability in the sector to deliver in time.
- It is the time to focus on greater citizen engagement and influence and education on the changes ahead.

Data Collection and Communication

- Databases are being compiled and actively used to great benefit.
- Active accumulating and sharing of databases and calculators is being used as a way to support partners, clients and members.

Decisions

- Strong pull for decisive and detailed strategy on implementation of high-level concepts from government.
- Confusion around the lack of clarity on specific actionable guidance at this crucial stage of the timeline.
- The Future Homes Hub has been launched with a comprehensive team and business plan, which presents support and guidance from government and homebuilders in response to these needs.

Collaboration

- Collaboration is being seen as a non-negotiable at this stage – with industry role players leaning on each other while testing and measuring their approaches.
- Members who are dealing with real decisions on the ground are turning to each other for support, to plug the perceived gaps in government action.

Chair's introduction: Delivery and Decarbonisation

Caroline Compton-James – Public Sector Director, Osborne and Deputy Chair of The Housing Forum

Welcome and a reminder about the value of the insight report from the first webinar. An introduction to the webinar with reference to policy and regulatory parameters:

The Future Homes Standard should ensure that all new homes built from 2025 will produce 75 to 80% less carbon emissions than homes delivered under the current regulations, and no new homes built under Future Homes Standard will be reliant upon fossil fuel. This is a substantial mind-shift.

The Future Buildings Standard is the second stage of the government's consultation on proposed changes to Part L and Part F – setting out energy and ventilation standards for non-domestic buildings, existing homes and proposals to mitigate against overheating in residential buildings.

With reference to these regulations, the RIBA 2030 Climate Challenge is a useful tool and set of targets for discussion with customers and designers on the new homes that we will be building. It sets out achievable, stepped deliverables towards how we reach Net Zero by 2030 and building compliant stock by 2050.

Within these regulations and targets, we have an imperative to find solutions to Decarbonisation that offer people well-built good quality homes and thriving communities. Design and placemaking does not need to suffer at the expense of targets. There are excellent solutions in the market, for example Osborne's Flexihomes solution that brings together construction expertise as main contractor and offsite expertise with the SIPs, designer, manufacturer and installer, adding windows and external wall cladding.

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RIBA 2030 Climate Challenge target metrics for non-domestic buildings

RIBA Sustainable Outcome Metrics	Current Benchmarks	2020 Targets	2025 Targets	2030 Targets	Notes
Operational Energy kWh/m ² /y 	225 kWh/m ² /y DEC D rated (CIBSE TM46 benchmark)	< 170 kWh/m ² /y DEC C rating	< 110 kWh/m ² /y DEC B rating	< 0 to 55 kWh/m ² /y DEC A rating	UKGBC Net Zero Framework 1. Fabric First 2. Efficient services, and low-carbon heat 3. Maximise onsite renewables 4. Minimum offsetting using UK schemes (CCC)
Embodied Carbon kgCO ₂ e/m ² 	1100 kgCO ₂ e/m ² (M4i benchmark)	< 800 kgCO ₂ e/m ²	< 650 kgCO ₂ e/m ²	< 500 kgCO ₂ e/m ²	RICS Whole Life Carbon (A-C) 1. Whole Life Carbon Analysis 2. Using circular economy Strategies 3. Minimum offsetting using UK schemes (CCC)
Potable Water Use Litres/person/day 	>16 l/p/day (CIRA W11 benchmark)	< 16 l/p/day	< 13 l/p/day	< 10 l/p/day	CIBSE Guide G

Using this Fabric First approach produces an energy efficient home, meeting all the requirements for an operational Net Zero Carbon development, (and often low embodied carbon and high levels of sequestered carbon that exceed the RIBA 2025 targets for embodied carbon). We are also developing solutions towards meeting the 2030 targets.

British Energy Security Strategy – what might this mean for housing?

John Milner – Partner, Baily Garner

The British Energy Security Strategy was published in April 2022, after delays, reportedly due to clashes between the Treasury and Number 10. What is not in it is more important than what is in it. There is a heavy focus on solving supplier-side problems and very little on existing demand-side problems.

If something is very expensive but needed, the first thing we would do is to try and use less of it – not come up with a strategy to produce more of it.

Energy options discussed in the strategy:

Nuclear

We currently have 8 nuclear power stations with one under construction at Hinkley Point and plans for 3

more: Wylfa, Suffolk and Essex, with a plan to treble output to 24 gigawatts by 2050, and deliver 25% of our total energy demand. A gigawatt is 1 million kilowatts – equivalent to 1000 1 kilowatt kettles boiling every hour. UK taxpayers currently subsidise about £400 million per annum – a large chunk. Nuclear is useful as a base-load for when wind or solar are unreliable, but it is going to take too long to solve the ecological and climate emergency.

There is a substantial amount of embodied carbon (concrete and embodied energy) in nuclear, compared to the cumulative effect of carbon savings as that power is used.

Offshore wind

This has been very effective, and the energy strategy proposes amending the Planning Act 2008, to make it easier for offshore wind, (related to the onshore connection facilities rather than the turbines themselves). The strategy is targeting 50 gigawatts by 2030. It states: “UK will be the Saudi Arabia of wind power.”

Solar

A very effective renewable, currently roof and farm solar provides 14 gigawatts of capacity – reduced by about 85% over the past 10 years. The strategy looks at a 5-fold increase, which planning rules will be changed to promote. Will it apply to retrofit in housing – where there can be contentions around period properties?

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Tidal

The fourth candidate unfortunately only briefly discussed is tidal, a very reliable renewable energy source.

Hydrogen

There are ambitious goals building on the recently published (Aug 2021) UK hydrogen strategy, which stated that a strategic decision about hydrogen would be taken by 2026. 1 gigawatt of electrolyte hydrogen is promised by 2025 and 10 gigawatts of electrolyte hydrogen by 2030. Previously referred to as green hydrogen, it is produced through the electrolysis of water using renewable energy. The process is, however, only 46% efficient.

Blue hydrogen has 58% efficiency – splitting gas, requiring carbon capture, a currently unproven technology at scale.

Pink hydrogen was introduced in this strategy – electrolyte hydrogen produced by nuclear electricity. My personal view is that hydrogen will be used as an energy storage medium in certain circumstances, for renewable energy, to decarbonise heavy industry, and we are unlikely to see much of it beyond specific new builds and new production facilities.

New Oil and Gas licences

There is much discussion on the supply side around energy strategy and security. One aspect is that new fields take 28 years to come to market, I am sure we could shorten that, but I do not think it is a good idea.

VAT in energy efficiency measures

A welcome VAT over a 5-year period on many measures, not including PV batteries, unfortunately. The problem is that we are in an inflationary climate where our cost base is going up significantly, so a VAT cut is not going to have a strong effect.

What is not in the strategy?

This is a supply-side strategy to tackle a demand-side problem. There is nothing in it about tackling the energy

efficiency of homes and industry. It is a consumer-led approach that misses the opportunity to adopt a national retrofit strategy. This envisages a gradual transition, when we need a transformative effect on energy efficiency now, particularly in the private sector.

Some credit must be given to government, however, for the social housing Decarbonisation and home upgrade grant funding, seeing the social housing sector as a lever to pump prime the retrofit of homes and handle issues like the delivery of 680 000 heat pumps per year. It does need a framework and national strategy, and without it, we are going to lose momentum.



Feedback on the strategy:

There is feedback from the Roofing Contractors Association, The Association of Consulting Engineers, the

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chief executive of EDF and Aecom. They were overall positive because of the focus on infrastructure and areas of business that they are involved in. The feedback from the BRE and other consultants such as Baily Garner, however, was sceptical and acknowledged the omission that I noted.

What does it mean for housing?

My takeaway is – not a lot. Decarbonised electricity will play a large part in housing's future in heating our homes – but it should not divert us away from the demand side of the work that we are all involved in and discussing as part of this group.

Our new build and retrofit toolkits were published last year. An updated version of both with additional new build and additional existing archetypes in multi-residential buildings and whole-life costs included is coming – we will pick up some of the themes that I have been talking about here.

I will close with a quote on the strategy from Brian Berry, the chief executive of the Federation of Master Builders:

"The Energy Security Strategy completely misses the mark in tackling energy consumption in our homes. After the disappointment of the heat and buildings strategy, this was an opportunity for government to implement a national retrofit strategy, focusing on improving the energy efficiency of the UK's drafty and leaky homes. Whilst the strategy does have a zero VAT on energy efficiency improvements to properties, (a welcome move that the FMB has long been campaigning for) this only helps those with the money to pay in the first place. A broader installation-led retrofit strategy would have been an intermediate solution to reduce energy consumption, boost the economy, and importantly, helps save homeowners money on their bills during a cost-of-living crisis."

Q (Gordon Watts): Green hydrogen simply is not an

efficient way to use a finite resource.

A: Absolutely right. The issue there is the efficiency rating for green hydrogen. If you take some renewable energy and convert it to hydrogen with an efficiency rating of 45%, you are getting 45% of your original renewable energy. If you put it into a heat pump that is operating at a coefficient of performance of say, 300%, then you are getting a 3-fold improvement rather than a 0.5 efficiency reduction. There has been some feedback that we would literally have to carpet the whole of the land in wind etc to create the amount of hydrogen that would be required to power domestic and industrial heating within this country. I see Alex Thomas has commented that it could be seen as blending into gas networks, and that next to some of the hydrogen production facilities new build homes may well benefit from hydrogen ready systems. While I do respect that insight from Alex – in terms of widespread retrofit, I am sceptical.

Q (Simon Eddleston – Director of Construction, Switch2 Energy): Will district heating be covered as a technology choice?

A: There is definitely a role for communal energy systems – low temperature communal energy systems. We are doing retrofits under PAS 2035 retrofit coordination services to tower blocks using shoe box heat pumps and ground-source heat pumps. The issue is – how far are heat networks available? Building and estate heat networks that can be upgraded are excellent, but how much capacity we have got to service the homes that are responsible for 70% of our national carbon emissions? It is questionable on a rollout of suburban heating and energy efficiency. It has got to be correctly targeted and calculated.



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The Future Homes Hub – the roadmap to high quality homes

Ed Lockhart – CEO, The Future Homes Hub

Background to the Hub

This is an introduction to the new Future Homes Hub, which facilitates collaboration right across the new homes sector on climate and environmental targets and goals. I have been working with and in government for 20 years, and latterly, set up and ran the alliance of business associations working with government on climate environment.

The Future Homes Hub started about 3 years ago when we were invited into discussions at Number 10 with the Home Builders Federation. The challenge to the sector was to build more homes for the country, to solve climate environmental problems – and these 2 things need to go together in a way they have never done before.

The initial challenge was developing a long-term strategic framework for dealing with these combined challenges. We set up the Future Homes Task Force, bringing together representatives from across all the sectors that shape new homes, including the government, housebuilders, utility providers, material suppliers and environmental groups.

Delivery plan and Hub operation

We worked together very closely for 9 months to create the Future Homes Delivery Plan, (published July 2021) to meet the country's climate and environmental targets. The plan set out the commitments, a roadmap and the specification for a new organisation, Future Homes Hub to take that forward

4 goals of the plan:

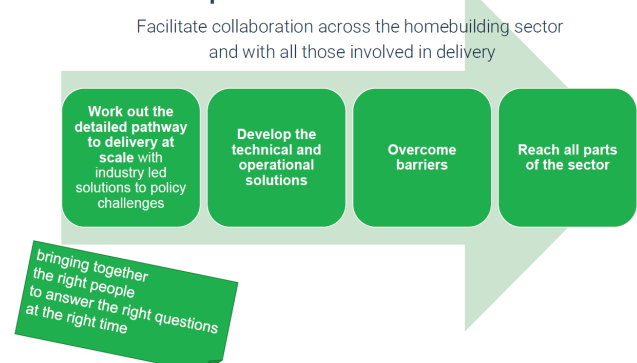
1. The home and its operation.
2. Place design and development.
3. Construction and materials (including embodied carbon).
4. The collective impacts of the business (such as how finance interfaces with companies).

At the point of publication, we had over 40 of the largest developers committing to collaborate on implementation. We worked very closely with relevant government departments to ensure that the roadmap was aligned with government's intentions and long-term policies.

We have spent the last 6 months setting up the hub. Our key function is to facilitate collaboration across the homebuilding sector: collaboration with supply chain, skills providers, infrastructure, utility sectors like water and electricity, and in close partnership with government.

Part of what we do is working out the detailed pathways to delivery at scale, and a lot of the overall plan needs more detail. One of our early projects is looking in detail at embodied and in-use carbon, developing technical and operational solutions and sharing them across the sector. A key interest from government's perspective is making sure that we work with smaller developers and that we reach all parts of the sector.

How the Hub Operates



We have now appointed the full team, and our board consists of some of the major players in terms of HBF,

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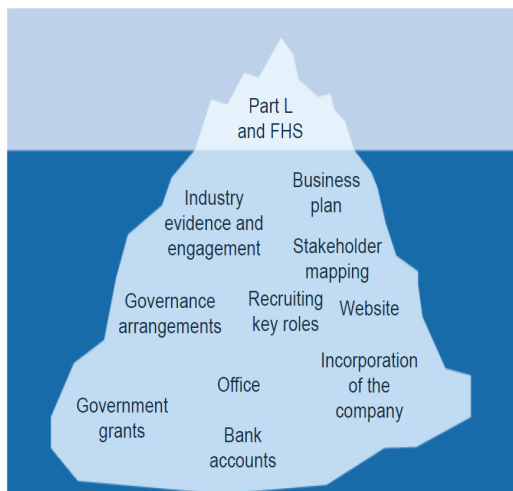
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HPC and Homes England, and the relevant government departments. While our challenges need to be led by the private sector, it must be done in close partnership alignment with government. We have got a clear business plan for the next 3 years, which is available online and we would welcome your feedback on that. (www.futurehomes.org.uk/library)

It covers the areas of work that we will be priorities for the next 3 years.

- Homes and construction
- Place and nature
- Corporate sustainability, metrics and ESG
- Customers
- Skills and supply chain
- Communications, engagement and sharing

The 'real work' is beginning to emerge



Interim Part L and the Future Homes Standard

The work we are focused on are the F.L.O.S. parts and the Future Homes Standard (FHS)

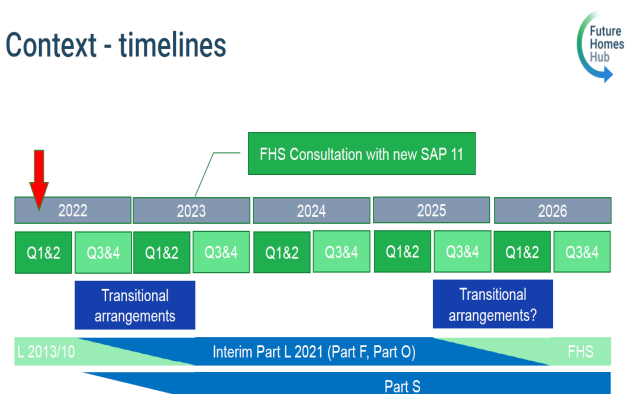
Regarding the regulation uplifts, we have brought together a series of expert groups to unpack the practical implications of complying with the FHS. We have brought together groups for: oversight; fabric; ventila-

tion; overheating; heat pumps; direct electric heating; energy infrastructure; customer working group; hot water – and there may well be more. (For example, the specific overheating group was deemed necessary due to unanticipated challenges from Part O).

These groups all share an agreed focus and contribute towards outputs, including:

- An overarching report explaining the technical approach and giving a context for the other material created.
- Guides to support developers and others whose assistance is needed to meet 1) the interim uplift to Part L and 2) the FHS.
- Content for installation and Home User Guide (HUG).
- Recommendations for any further actions required to ensure success.

Context - timelines



Simple guidance on the new requirements already available at www.futurehomes.org.uk/guidance. Technical guidance on 'where to start' available soon.

There will be guides on: masonry, timber frames, apartments, overheating. That is all to come. We are also working on barriers to successful implementation and providing guidance on meeting Part O and SAP.

There is a first phase supply chain report on our website and a second one about to come out, which assesses supply and vulnerabilities of different tech-

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Overcoming barriers and critical success factors

Working between the industry and government on immediate barriers and prioritizing what longer term enablers to work on together



 Future
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nologies. The other major project will be on embodied carbon. We are open to feedback on the succession of projects coming up.

Q (Shelagh Grant – Chief Executive, The Housing Forum): How can members of The Housing Forum get involved?

A: Any piece of work we start with has a call for evidence, so if you write in, then we will put you on our mailing list for that. We are very keen to build on everything everyone knows already and to get your members' input. There is also the opportunity to volunteer onto those expert groups, and we are looking at membership at the Future Homes Hub soon – with information to be available on the benefits – so do get in touch at admin@futurehomes.org.uk

Q (Steven Edwards): What considerations are being made to upgrade SAP methodology, which is known to be flawed, but it is probably also out of date? In representing true energy usage? Will energy usage

and intensity be introduced more widely as a building performance metrics?

A: Good question – is SAP ready? Is SAP appropriate for the imminent coming into force of the 2021 regulations? We are supporting government on that. There is complexity as a result of different organisations being involved. Secondly, how should SAP evolve longer term to link in with building performance evaluation is a piece we are looking at now in the context of FHS. There will be a detailed business case for this.

Q (Gordon Watts): Reflecting on Future Homes Hub, and the Zero Carbon Hub from about a decade ago, and what use you might be able to make of the materials and learning that they held.

A: I do not think we would exist if the Zero Carbon Hub did not. We are building on what they did and have some of the same people in our team. It was a very effective organisation, and although the challenges today are different, the fact that that we have a national

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legally binding target gives confidence that things will now change.

Embodied Carbon Databases

Allan Dunsmore – Director, connisbee

At connisbee we are structural engineers working on all types of buildings, housing included.

What is happening?

- Architects and structural engineers have declared the climate and biodiversity emergency.
- We have still got 40% of carbon emissions from the construction industry, which is huge.
- Embodied carbon is still totally unregulated, something that needs to be addressed.
- We recently had the Meicon report which was an important piece of work on reducing material use and wastage.
- In the last 20 years in-use energy has been extensively addressed in terms of fabric, and renewable energy.
- There is no drive for part Z, and embodied carbon regulations effectively to catch up with that.
- We are now seeing recognition for low carbon schemes. We recently had a Sterling Prize winner, which would not probably normally have been regarded, but ticked all the boxes in terms of aesthetics and low carbon and low energy, which is good to see.
- We need to do more.

Current databases

- Inventory of Carbon and Energy database, where most of the info is available for base figures – ([link here](#))
- This contains all the base figures for every type of material, every configuration of material, and the

base embodied carbon unit figures for easy use.

- RICS Whole Life Carbon Assessment for the Built Environment, 1st edition – ([link here](#))
- MEICON Report – ([link here](#)) - not a database, but recommended reading.
- Built Environment Carbon Database (BECD) – ([link here](#))
- Various consultants' in-house databases.

We have been building up our own databases for benchmarking, which is key for evaluation of results and sharing that information with industry – ultimately guiding clients to get the lowest embodied carbon result which still meets the brief. These databases are living documents and should be used as a design tool.

As an example - The ICE database ([link here](#)) set up by the University of Bath and Circular Ecology has reams of information to extract.

We have been focusing on cradle to gate embodied carbon, A1 - A3 of the RICs, from rammed earth all the way up to aluminium. Timber can go far, in terms of building, and we should use it where we can, but it is not the solution to everything. We need to use all these materials in a clever and economical way.

Above are the lifecycle stages. These are the areas that we are primarily focused on – with modular structures having the benefit of not having to be demolished and being movable to other sites at the end of the life. This is part of the circular economy.

Our database

A dedicated team has worked on this over 3 years. Easily accessed from our connisbee landing page – ([link here](#))

You can access the embodied carbon calculator as well as some of the results that we were getting. This example is a Housing Scheme: RC Frame with large basement and transfer slabs, coming out as a rating G,



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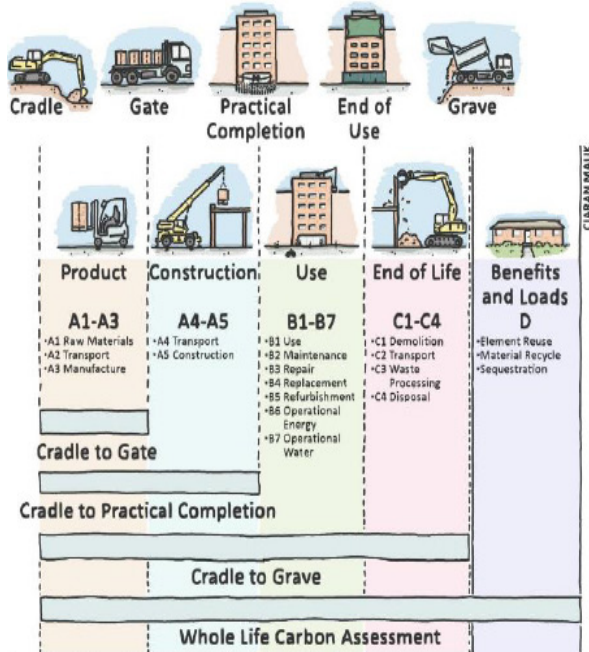
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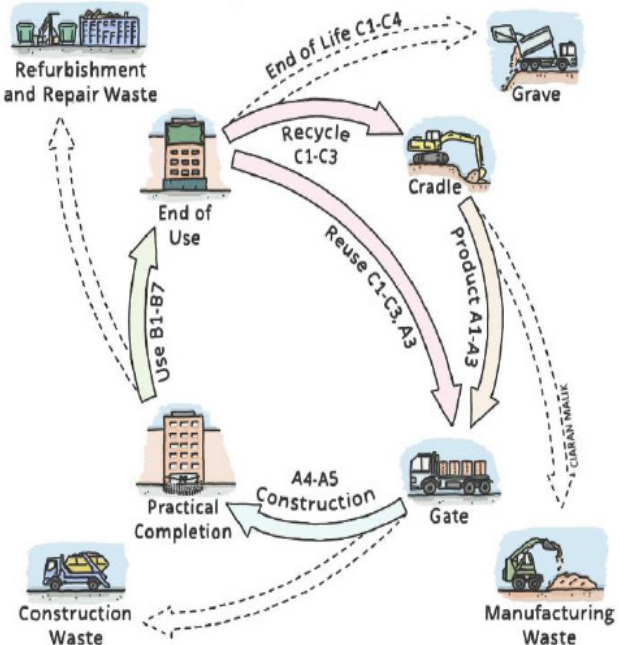
Life Cycle Stages

Whole Life Carbon Assessment



Source: Targeting Zero - Embodied and Whole Life Carbon Explained by Simon Sturgis

Construction Cycle and Waste



why is that? We were able to extract elements of the basement – the transfer slabs all add up to the embodied carbon in the structure and add to what would be a standard structure significantly.

In the database there is information from each project and summaries of project construction values as a new build or retrofit. We extract trends in embodied carbon from that and use it.

We can then look at different superstructure types, (for example CLT frames versus steel framed and precast); different typical spans with the sweet spot of 5 to 7 meters, which exponentially increases as span increases. This gives information to guide schemes at the early stages.

Looking at foundation type – basements are the real killer in terms of adding embodied carbon to structures,

so we analyse the different approaches to that to see the results of each, which speak for themselves.

Databases are important and we have found that embodied carbon measurement is a very powerful tool for design evaluation, which needs to be used at every stage of design, through to construction and monitoring.

Regulation is long overdue. Part Z is essential for the industry in terms of reaching Net Zero by 2050 and that will have a big impact. The more information we can gather and share as an industry, the better equipped we are for making sustainable decisions.

Q (Shelagh Grant – Chief Executive, The Housing Forum): Are there gaps in the data – particularly on im-



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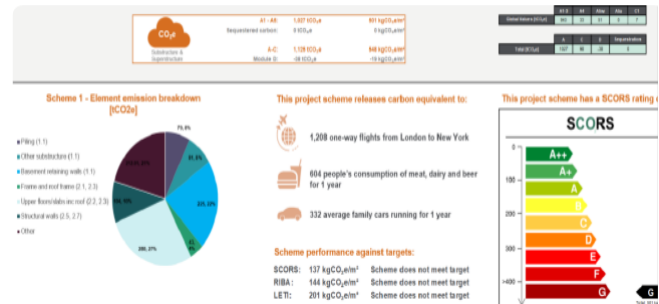
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Typical Embodied Carbon Calcs

Housing Scheme: RC Frame with large basement and transfer slabs



Material	Material Type	Material Specification	Structural Element	Description	Volume [m ³] or Mass [kg]	Material Quantity [m ³ , kg]	Reinforcement [kg/m ³]	Element Embodied Carbon [tCO ₂ e]	A1-A2	A4	A6w	C2-C4	D
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Basement retaining walls	45x 800mm Rile (20m)	Volume [m ³]	255	Pile (80)	110	89	4	6	11	10
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Basement retaining walls	10x 750mm Rile (20m)	Volume [m ³]	168	Pile (80)	72	59	2	4	8	8
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Basement retaining walls	325x5100mm Liner Wall (40m)	Volume [m ³]	80	Retaining Wall (110)	30	25	1	2	3	3
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Basement retaining walls	Capping Beam	Volume [m ³]	57	General Beam (80)	24	20	1	1	3	2
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Basement retaining walls	425x5100mm Liner Wall (18m)	Volume [m ³]	32	Retaining Wall (110)	15	12	1	1	1	2
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Foundations (incl. pile caps)	750x750mm Ground Beams (14m)	Volume [m ³]	8	Ground Beam (230)	4	4	0	0	0	1
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Foundations (incl. pile caps)	1x PC1	Volume [m ³]	1	Pile Cap (58)	0	0	0	0	0	0
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Foundations (incl. pile caps)	1x PC3	Volume [m ³]	4	Pile Cap (58)	2	1	0	0	0	0
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Foundations (incl. pile caps)	1x PC4	Volume [m ³]	6	Pile Cap (58)	2	2	0	0	0	0
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Foundations (incl. pile caps)	2x PC5	Volume [m ³]	11	Pile Cap (58)	4	4	0	0	0	0
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Foundations (incl. pile caps)	Cone Mats	Volume [m ³]	116	Roof (100)	52	42	2	3	5	5
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Lowest floor/slab	Basement Slab	Volume [m ³]	54	General Slab (150)	28	21	1	1	2	3
Concrete	Reinforced	C32/40 - 25% GGBS	1.1 Ring	54x 450mm Rile (20m)	Volume [m ³]	264	Pile (80)	88	71	3	4	9	8
Concrete	Reinforced	C32/40 - 25% GGBS	2.1 Frame	Columns	Volume [m ³]	74	Medium Column (250)	43	35	1	2	4	7
Concrete	Reinforced	C32/40 - 25% GGBS	2.1 Frame	Beams	Volume [m ³]	10	General Beam (80)	4	3	0	0	0	0
Concrete	Reinforced	C32/40 - 25% GGBS	2.2 Upper floor/slab	Typical Slab	Volume [m ³]	480	General Slab (150)	227	188	8	11	22	27
Concrete	Reinforced	C32/40 - 25% GGBS	2.2 Upper floor/slab	Transfer Slab	Volume [m ³]	168	Transfer Slab (180)	58	48	2	3	5	5
Concrete	Reinforced	C32/40 - 25% GGBS	2.3 Roof	Roof Slab	Volume [m ³]	88	General Slab (150)	27	22	1	1	3	3
Concrete	Reinforced	C32/40 - 25% GGBS	2.7 Structural int. walls	Shear Walls	Volume [m ³]	269	General Wall (80)	116	94	4	6	12	10
Concrete	Reinforced	C32/40 - 25% GGBS	Other	Truss Supporting Structure	Mass [kg]	75,443		190	185	2	2	1	-121
Concrete	Reinforced	C32/40 - 25% GGBS	Other	Column Supporting Truss	Mass [kg]	8,852		22	21	0	0	0	-14
Concrete	Reinforced	C32/40 - 25% GGBS	Other	Beams Between Trusses	Volume [m ³]	6		1	1	0	0	0	-1

ported materials? Or any regulation on the declaration by suppliers of their embodied carbon?

A: There are variations, but the ICE database is the best information that we have and a considerable amount of research has gone into that to account for where materials come from, and using figures from manufacturers as well. It is being updated as things progress. Some of the numbers for a material can vary, and we need to be aware of that, but it is the best we can do now.

Q (Jason Amos): Why is hemp not used more in building construction?

A: That is a very good question. There are products like hemp available and we will likely see more. Rammed earth is not that widely used, and it could be too. Awareness and market accessibility might be part of that.

The Futures Network Decarbonisation Survey – results update

Thomas Bugler – Head of Marketing, Bugler Group

About the survey ([link here](#))

We understand the importance of Decarbonisation for our industry and are keen to dive deeper into what it means in reality across the sector. The survey covered 4 key areas:

1. Decarbonisation in general
2. Decarbonisation and new build
3. Retrofit/existing homes
4. People

We have had around 50 responses from across The

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Housing Forum members, and I thank everyone who has contributed. Great to see that we have had a mixture of job roles and seniority as you can see in the wordmap.

What are our findings?



Additionally positive is that 91% of respondents answered that they are very or somewhat involved in ensuring their organisation meets Decarbonisation targets.

We saw that 80% of organisations surveyed have a plan to deliver homes to meet emissions targets by 2025, which is great. There is, however, an interesting statistic here where $\frac{3}{4}$ of those surveyed thought that the industry lacks the adequate skills and knowledge to meet targets across the next 10 years. This poses another question – how do we change this and upskill?

Daniel Love – Commercial Manager, Polypipe Building Projects

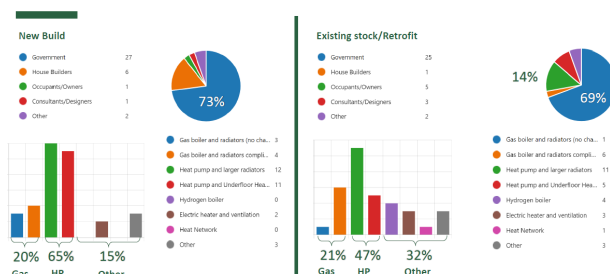
How do we correct this lack of skills and knowledge to meet targets? Many comments mentioned training, but an equal amount of people alluded to the fact that industry still has not decided and committed to exactly how we are going to change the way we build homes beyond 2025.

We need to know what designs, technologies and methods of construction going to be the new normal before training can be targeted at that.

There was a strong understanding (90%) of and preference for a Fabric First approach from respondents.

The survey deliberately mirrored some questions for new build and retrofit.

Decarbonisation in New Build and Existing Stock



Who do we believe is the biggest influencer in driving Decarbonisation in homes? Overwhelmingly on both, government came out as the top answer, probably for different reasons.

Owners and occupants got a higher score on the retrofit section, interestingly, suggesting that the respondents believe that homebuyers themselves on new builds are not a key driver in energy efficient homes – which is quite surprising.

Respondents all believe that heat pumps will be the most popular choice for heating post-2025 – which is in line with government's focus.

Interesting to see the level of respondents who believe that gas will still play a part, and the potential to use gas and meet the regulations.

There are more varied range of answers on the retrofit side, with hydrogen featuring in retrofit, but with zero votes on new build. Please note that those who answered 'other' on both sides often commented that it could be a combination of heating sources dependent entirely on specific situations.

When it comes to the biggest constraints to deliver on

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Net Zero homes – the most popular answer by far is cost: 38% of responses.

The top answer again in terms of the choice of doing it or not doing it, is the cost. It is a surprise to me that the private housing developers do not actively sell to their customers the benefits of having an energy efficient home, particularly with the energy and annual cost savings that it brings.

Richard Johnson – Platform Housing Group

In terms of the engagement, training and development aspects of Decarbonisation the keyword is collaboration. It surprised us all that 76% of respondents believe the industry does not have the adequate skills and knowledge to deliver Net Zero homes.

Some ideas of how this gap can be bridged – collaboration between different teams or getting specialists involved in making the right decisions in these projects? My interpretation is that the results suggest that skills and knowledge development in this sector seems to be demand-led, but there is currently little demand for Decarbonisation-led training internally and so little incentive to develop the skills.

A concern is that if demand is created without planning for skills and development in advance, then there may be a lag in the supply of a skilled workforce in the context of tight timelines.

I would like to share a survey response, anonymously:
"There needs to be a consistent commitment from local authorities and housing developers to prioritise delivering energy efficient homes, regardless of additional costs, that they can resource properly, both in terms of recruiting, developing knowledge, staff, consultants, but also to commit to the additional requirements to build-costs associated with delivering homes to meet the targets."

This hits it on the nail and so it is concerning that the

majority of people feel that there is still a way to go with this. It is therefore important for us to forecast the skills and what will be required and to engage with our relevant teams and resources to implement this ahead of the demand.

When we asked about how your organisation plans to increase citizen involvement and influence, we had another interesting result – almost $\frac{3}{4}$ believe that organisations are somewhat involved, which is great. The finding suggests that most organisations are still at the developing stage regarding citizenship involvement, and more collaboration is needed with teams and staff to lead the way. This could be through engagement programmes, customer green supporting ambassadors to inspire, develop and commit. It is apparent that organisations need to do more on engagement, creating resources and occupant advocates and awareness campaigns.

By rethinking our approach to heating and hiring teams who are skilled and equipped with the knowledge to deliver when it comes to people, and teaching them how we think around heating, be it new builds or retrofit the following recommendations can be made:

- Plan ahead so that Net Zero can be achieved efficiently across the sector.
- A clear roadmap on sustainable plans to prepare for retrofits and engagements.
- Trained, dedicated project specialists to take their teams and the occupants, both internally and externally on the journey.
- Greater customer engagement and knowledge sharing.

I would just like to end by saying let us accelerate and get trained and collaborate together, and learn from each and every interaction we have, following up with appraisals and surveys on how residents are embracing these changes, and not focus on costs only. Everything we are doing is for the future, and we need to look ahead.

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Round Table Feedback

Daniel Love – Commercial Manager, Polypipe Building Projects

- We talked about how to address the skills and knowledge gap.
- Collaboration was a key theme – and getting the next generation of people trained up through apprenticeships. We do think that there is a major skills shortage of trades people to start with, but importantly trades people with the required skills to deliver a new system and a new way of working it. It is an urgent issue.
- Where government came out as the biggest influencer in the survey, we agreed with that. Developers themselves seem to want to build as cheaply as possible as they think that is what their customers want, but it might not be the case. We feel it does require government to force that, which will also help suppliers that are not yet in a position to deliver the volume of new technologies that might be required. Suppliers do not have the assurances that a particular technology will be the solution at scale – so the demand is not certain. Regarding heat pumps, the respondents felt that that would increase energy bills, and the feeling in our group was that might be a myth, when pumps are used correctly.
- We explored some other solutions such as a dynamic tariff where charging an electric vehicle at night, for example, would get a lower tariff and potentially even energy trade in where you get paid for the electricity that you generate from your solar panels.

Richard Johnson – Platform Housing Group

- We agreed there is a skills gap and that word collaboration was brought up a few times. More needs to be done with project specialists.
- Regarding air source heat pumps – from an occu-

pant's point of view it is straightforward and there is an information leaflet too on easy maintenance.

- Government is the influencer here as they are the ones that create the policies and it takes time for governments to get everything into place – but have we got enough time to reach these demands by 2050?

Shelagh Grant – Chief Executive, The Housing Forum

- Costs and energy bills are a concern, and better housing reduces fuel costs. The fact that councils do want to build to higher standards, keeping their costs down is a problem. The cost of better quality does need to be factored in.
- Training on the use of air source heat pumps is important.

Thomas Bugler – Head of Marketing, Bugler Group

- The conclusion we came to was that whatever is implemented, it needs to be simple. It needs to be easy to use and easy to understand.
- Before we look at any new technology, such as air source heat pumps, we have got to nail the Fabric First approach and heat demand before we look at embellishing with extra and additional technology.

Feedback and Conclude

Thank you to all contributors for participating in this timely event, and we look forward to seeing you at the next one.