



GREENOAK

CENTRE OF EXCELLENCE



Agenda:

- Welcome – Martin Large
- Introduction to the Centre of Excellence – Jonathan Layzell & Vicki March
- From SME to Top 25 House-Builder, Thakeham's Sustainability Journey - Josie Cadwallader-Hughes
- Stonewater's Sustainability Journey – Nicholas Harris
- Break
- Retrofit & New Build Standards – Adam Masters & Marie Riordan
- Building a Circular (Social) Housing Economy – Clare Rainsford
- Panel Session
- Close – Nicholas Harris



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Welcome

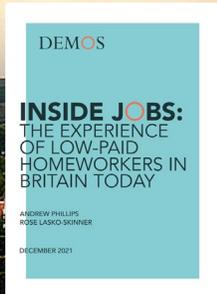
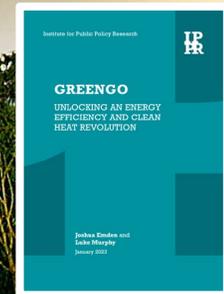
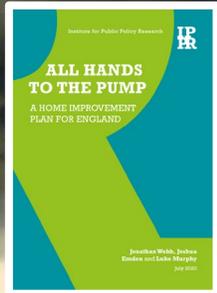
Martin Large, Chair of Greenoak



Target 2050

Climate Change Act sets out a target of 100% reduction in net carbon emissions by 2050.

- Rapid progress is needed, achievable by working together.
- Our Centre of Excellence means:
 - Building on existing expertise.
 - Learning from others, including through Thought Leadership.
 - Measuring and evaluating real life outcomes – highlighting the most effective route to net zero.



Stonewater's Sustainability Team

-  New Development
-  Retrofit & Decarbonisation
-  Customer Experience
-  Environment, Social, and Governance
-  Sustainable Supply Chain
-  Water, Ecology & Biodiversity






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Learning from others,
sharing best practice
and knowledge.

Partners ↔

↔ Academia

Social Housing sector ↔

↔ Policy Makers

Opportunities

Social landlords are uniquely placed to learn from homes in management and customers.

Stonewater has:

- 36,000 homes under management.
- 78,000 customers to engage with, influence and learn from.
- A significant development programme.
- Significant influence with its supply chain.
- Ability to take positive action on ecology and biodiversity issues.
- Team of sustainability specialists.



Challenges Ahead

How do we measure success?

- Science based – real live vs. modelled.
- Carbon reduction – what's the reality?
- Design and liveability – fit for future needs & expectations?

What metrics should we use?

- EPCs – fit for purpose?
- Affordability – for customers and our business.
- Customer satisfaction.



Structure

Learning

- Capture & evaluate learning from recent and current projects.

Training

- Ensure sustainability is embedded within the organisation.

Publications and Events

- Disseminate learning and learn from others via our website and events.

Customer Engagement

- Ensure our Customers are engaged and heard.



Learning Hub



Training Hub



Dissemination Hub



Customer Engagement Hub



Join us on the Journey

- Get involved.
- Watch the website
 - Blogs, reports, results as they happen.
- Attend events
 - Meaningful discussion about what does and doesn't work.
 - Webinars & workshops.
 - In-depth look at current issues.

www.stonewater.org/gcoe





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From SME to Top 25 House-Builder, Thakeham's Sustainability Journey

Josie Cadwallader-Hughes,
Sustainability Director, Thakeham





Stonewater's Sustainability Journey

Nicholas Harris, Chief Executive, Stonewater



Our Goal

Provide safe, warm, comfortable
and affordable homes.



Stonewater

- Circa 36k homes: Torbay – Eastbourne – Skipton.
- 800 colleagues.
- Loans of £1.2 billion.
- We spend c.£300m per annum.



The Importance of Sustainability

- Leave planet in better condition than inherited.
- Improves retention/recruitment.
- Warm affordable homes.
- Financially beneficial.
- The right thing to do.



Top Level Stats

- Residential accommodation 17% of all UK CO²
- 55% of global industrial emissions come from building materials: steel 25%, cement 19%
- In 2020, 53 million tons of non-hazardous waste.



Employee Offer

- Hybrid working.
(Pre-pandemic mileage:
01.04.19 to 31.3.20: 2,524,104 miles
Post pandemic mileage:
01.04.22-31.03.23: 603,344 miles)
- Interest free loans up to £10k.
- 10% uplift on car allowance for hybrid vehicles.

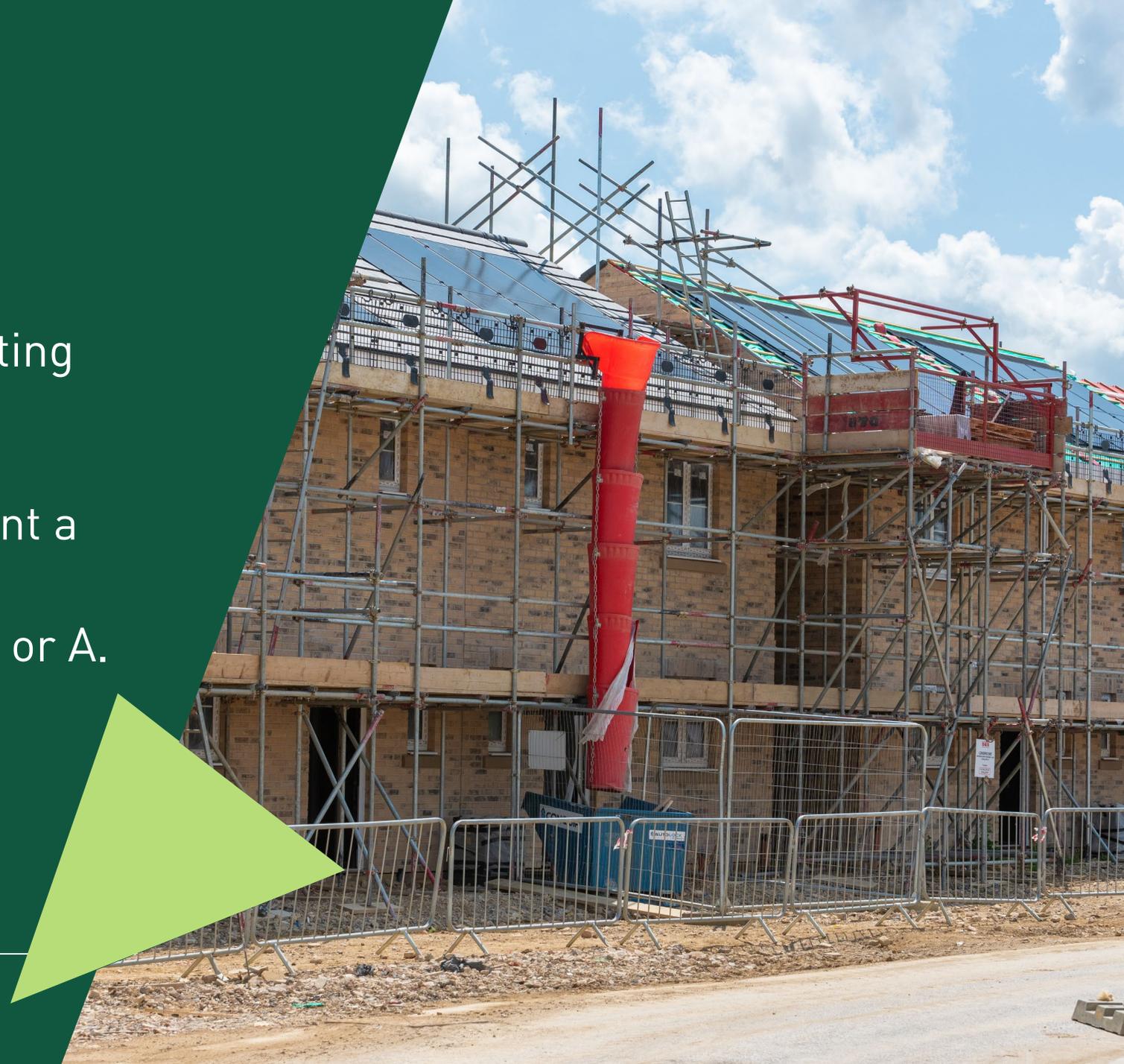


Finance Offer

- Early adopter ESG.
- On one ESG Bond over 7 years save £700k.
- Expand investor pool.
- ESG KPIs = what gets measured, gets done.
- SHDF £10m Grant from Government.

Development

- All land build fossil free heating since April 2021.
- Plant 1 tree for every home, Community Forest Trust plant a further 5.
- Aim is all new homes EPC B or A.



Customer

- Cost of Living crisis.
- Energy costs 400% increase.
- Benefits going up circa 7%.
- Living wage increase.



MacDonald Place, Lytchett Matravers

25 homes, completed February 2023.

Homes built to EPC A, with SAP rating of 96.

Flats achieved EPC B, score of 86 points.



Burton Gardens, Weobley

49 homes retrofitted with ground source heat
pumps.

Completed December 2017



Blunden Meadows Ewyas Harold, Herefordshire

38 homes, completed September 2023.

Average SAP rating of 88.

High EPC B scores.





Break & Networking



Retrofit & New Build Standards

Adam Masters, Assistant Director Environment and Sustainability, Stonewater

Marie Riordan, Director of Development (South & Central), Stonewater



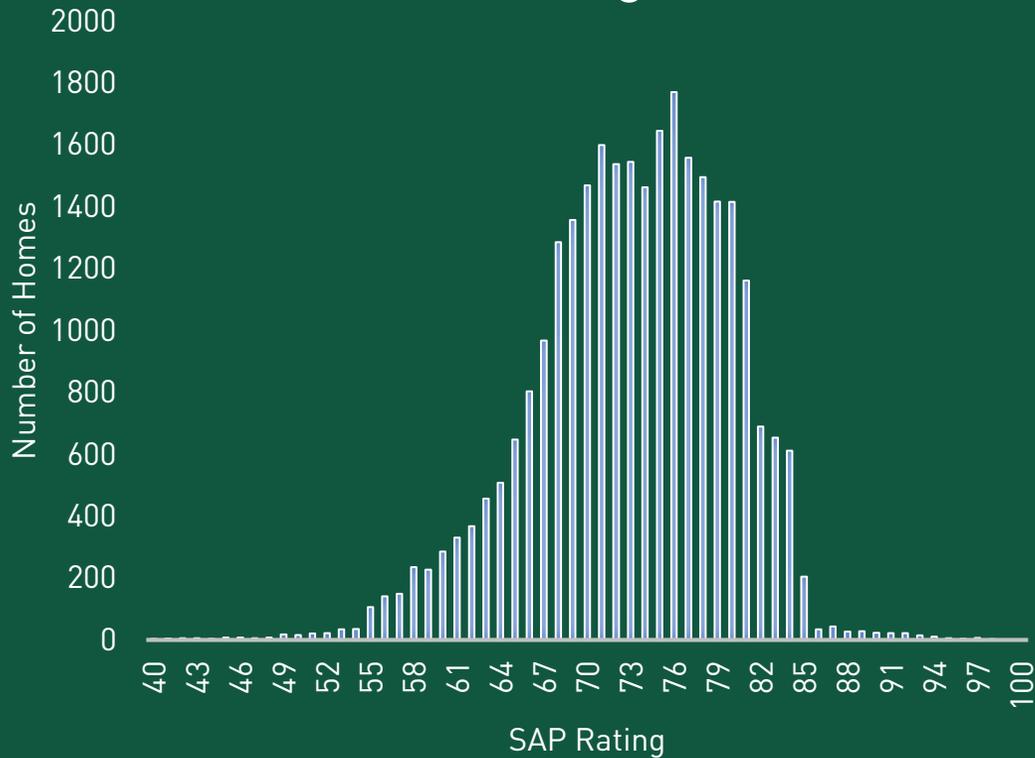
Retrofit

A Challenging Environment

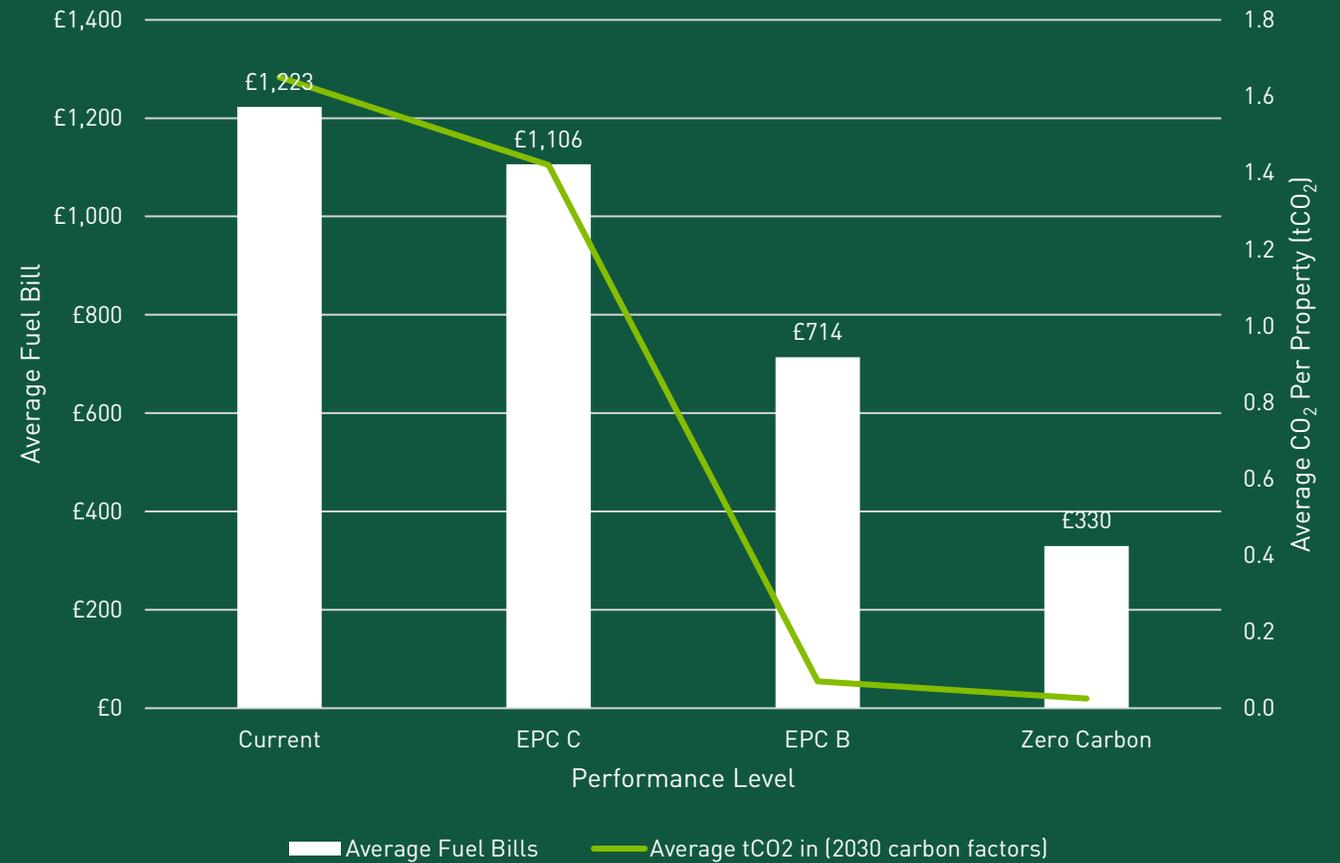
- Lack of legislation or policy.
- Funding.
- Supply chain.



Distribution of homes by SAP rating



Comparison of Running Costs and CO₂



Increasing Efficiency

2020s – Minimum EPC C by 2030:

- Fabric Measures.
- Low carbon heat in off-gas areas.
- Installation of EV Charging.

2030s – Minimum EPC B by 2040:

- Electrification.
- Onsite generation.
- Energy storage.
- Smart controls/optimisation.



Delivering at Scale

Enablers:

- Flexible funding.
- Area-based retrofit.
- Market reform.
- Supply chain development.



Case Study

Oxford Energy Superhub

- Collaborative project.
- 57 properties.
- Ground Source Heat Pumps/Smart controls.
- Load shifting trial.

Phase 2

- 5 homes with prototype heat pump.



New Build

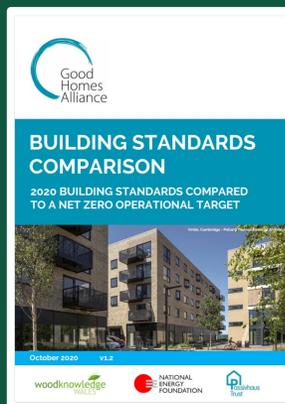
Standards and Innovation

Building Standards

What's our direction?

Report by Good Homes Alliance

- Comparison of standards.
- Evaluation criteria.
- 5 different house types or archetypes modelled.
- Energy use split into 4 categories.
- All energy used is electric.
- ASHP rather than boilers.
- Allowance for 'performance gap'.



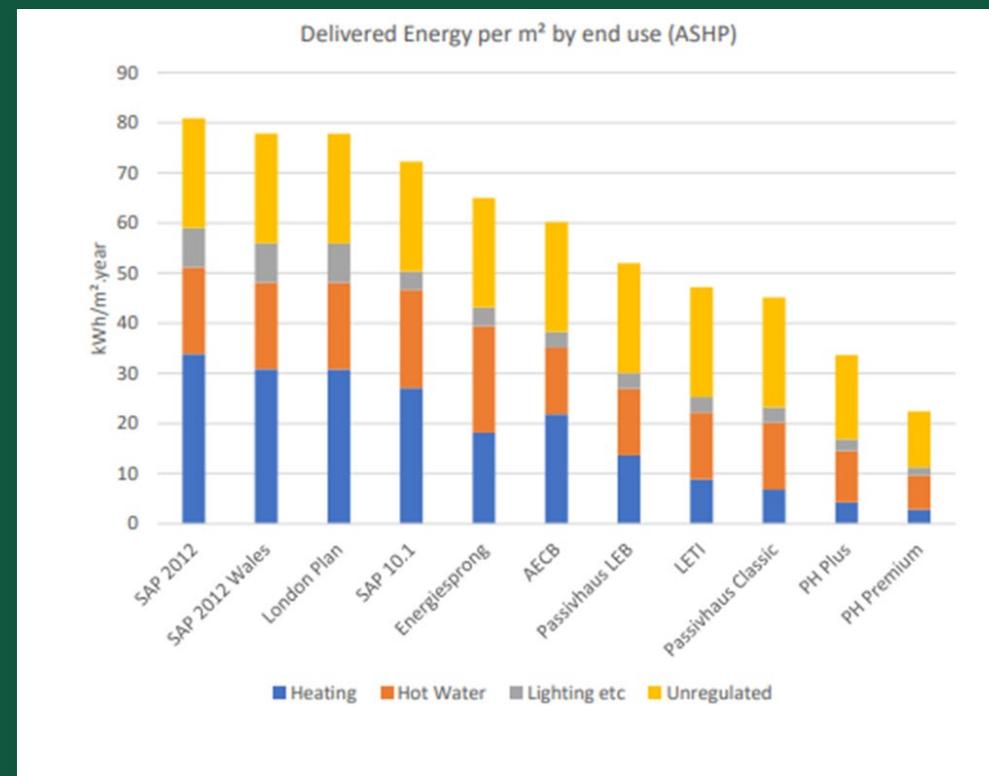
A Mixture of Standards

An opportunity

Standards compared in report.

Chart for a three-bedroom semi detached house.

As fabric performance increases, required energy to meet demand to be delivered via the grid decreases.



Good Homes Alliance

Stonewater's Base Standard

- From April 2021, no new land and build schemes with fossil fuel heating systems.
- Air Source Heat Pumps and Photovoltaic (PV) Panels.
- Pushed innovation to consider alternatives such as Wondrwall.
- Modern Methods of Construction, including whole house modular construction.
- Taking the next steps.



Stonewater's Zero Carbon Standard

- Passivhaus, or alternatives?
- Worked with Cooper Homewood Ltd
- Focus on 2 and 3 bed homes, representing the majority of our development programme.
- NDSS Modelled in SAP 10 – BRegs Part L 2021



Stonewater's Zero Carbon Standard

- Step change levels.
- Allows for evolution and innovation.
- Costing Exercise undertaken by Bailey Garner.

'NOTIONAL'	Building Regulations Notional Spec.
'BASIC'	Building Regulations Part L Compliance
'ENHANCED'	Future Home Standards Compliance
'ENHANCED +'	Enhanced Building Performance Option
'NZOC'	Net Zero Operational Carbon



New Technology

- Continuing to make use of technology like Wondrwall, PV Panels, Air Source Heat Pumps.
- On site generation – wind turbines, PV arrays.
- On site energy sharing across homes – micro generation systems.
- Ensuring homes built today are fit for purpose for tomorrow.



What is a Circular Economy?

Designing out waste, pollution, risk & cost

- Keeping products & materials in use.
- Regenerating natural systems.
- Social sustainability – health, jobs, wellbeing...



Why Bother?

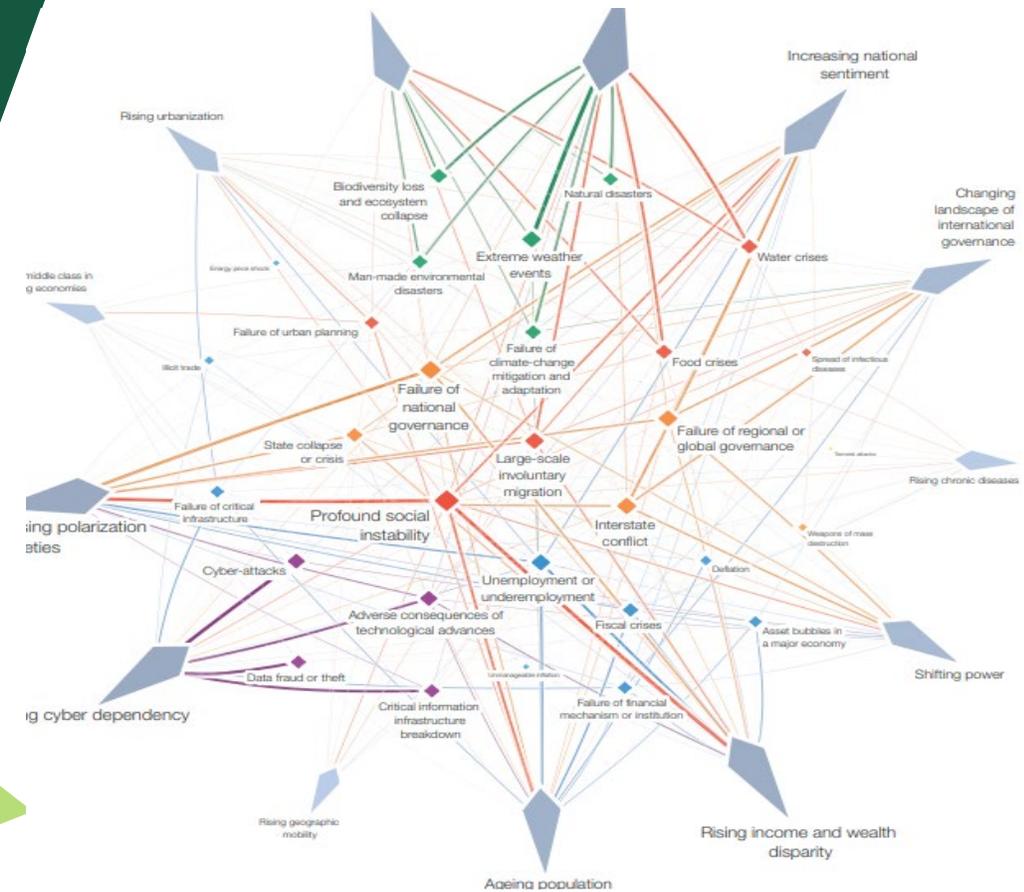
Escalating risks:

2 years

- 50% global risks Environmental.

10 years

- 70% of global risks Environmental.



What's Happened So Far?

EU: Taxonomy setting requirements for circularity.

- Creating 'Digital Product Passports'.

IFRS – Financial Reporting Standards.

- Global capital markets.

UK: Environment Plan/Waste Strategy.

- 'Eliminate avoidable waste of all kinds by 2050.'



Where Are We Now?

Social housing sector standards: SHIFT, Good Economy/ESG
Take, make, dispose

400
Million
Tonnes

Material used by
the UK
construction
sector each
year.

100
Million
Tonnes

Waste from UK
construction
sector each
year.

8% of
Global
Carbon
Footprint

Produced by
cement alone.

4.5
million
people

Global -
estimated to be
working against
their will in
construction.

€20
Billion

Critical
Materials Club
formed by the
EU.



Where do we want to be?

Characteristics Circular Homes ?



Social

‘Old brain trapped in a new environment’.

- Natural materials.
- Natural light.
- Plants.
- Happier people...



Environment

- Natural & reusable materials.
- Resource efficient.
- Minimising impacts build/ use:
 - Energy, water, waste.
- Climate resilient.



Economic

- Affordable to build, maintain & live in.
- Durable/Flexible.
- Value as future ‘material banks’.
- Reusable – ‘recycle a building’.

What are we doing ?

1. Systems approach.
2. Assessing our specifications.
3. Procurement.
4. Our supply chain.
5. Obtaining & analysing data.



Systems thinking

- Circular economy as a social housing strategy.
- Framework mapped against UN Sustainable Development Goals.

Governance
Procedures

Synergies &
Impacts

Business
Risk &
Opportunity

Objectives
KPI metrics,
Targets &
timelines

Consult

Develop plans
&
programmes

Implement &
assess
performance

Use pilots : develop new approaches challenge existing practice.

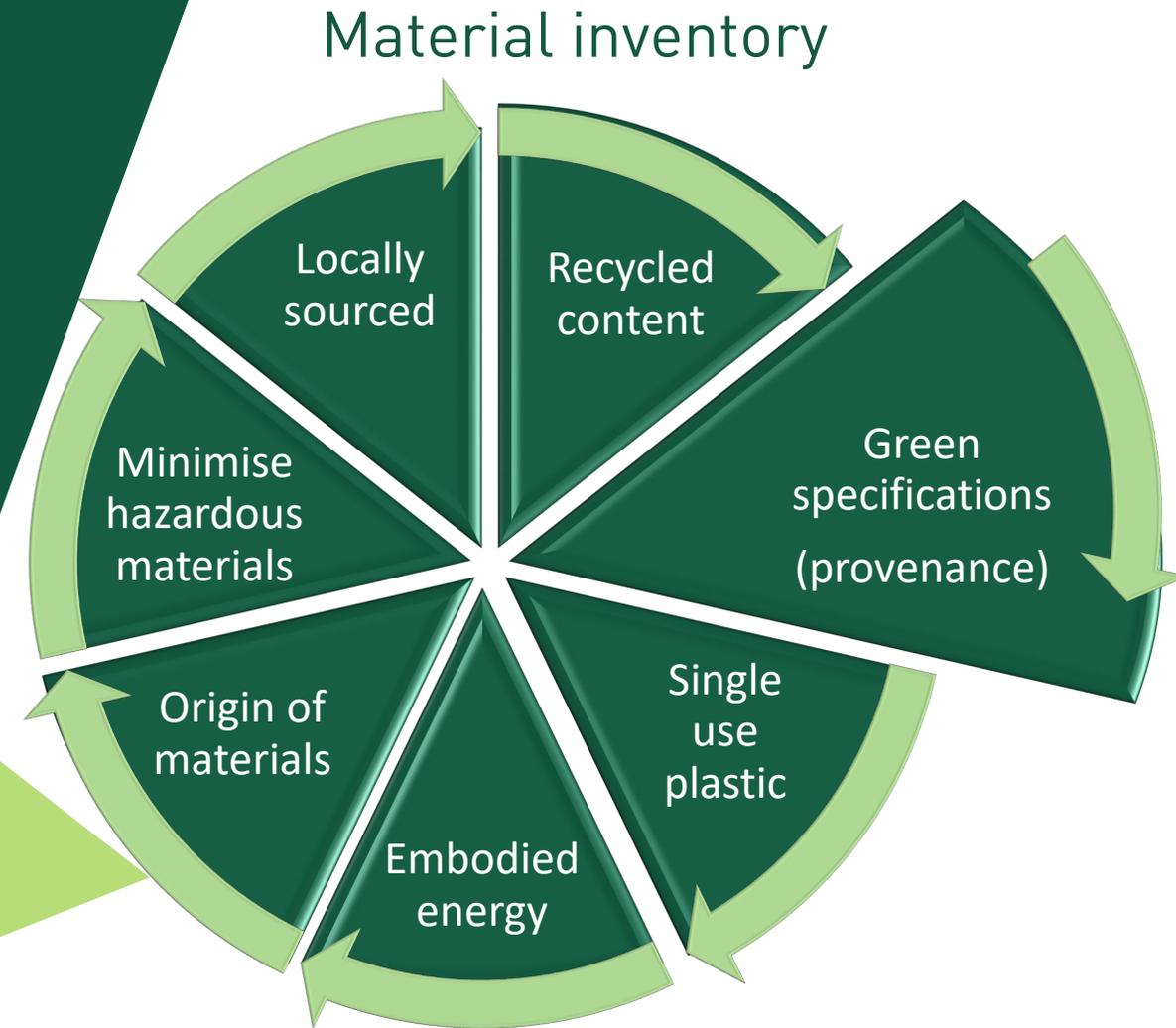
Circular Design/ Specification Guides

Life cycle – New build & Assets

- Embodied energy.
- Responsible materials.
- Waste minimisation.

Integrated attributes:

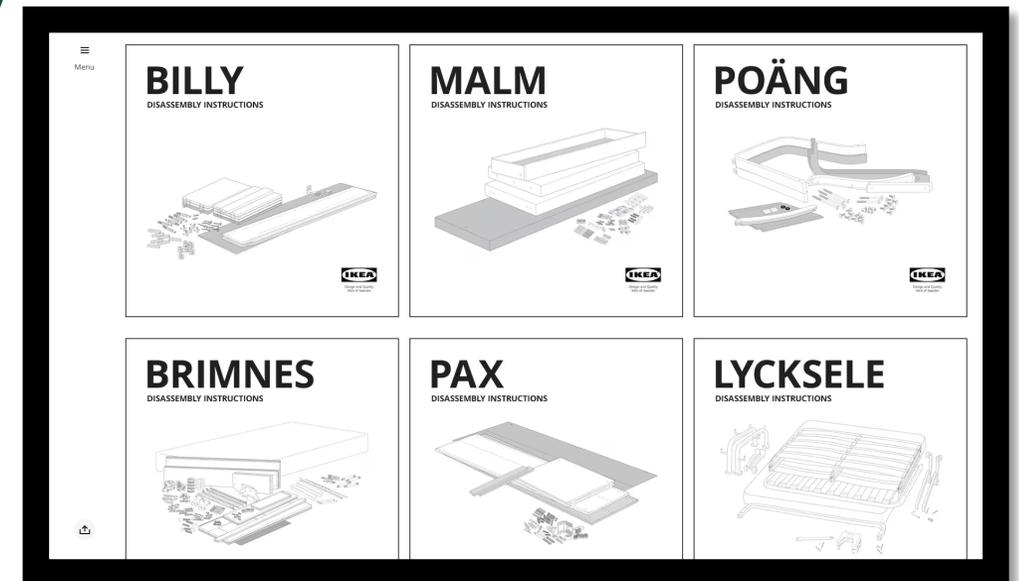
- *Performance.*
- *Whole life cost.*
- *Health.*



How Do You Recycle a Building ?

Treat it like a Billy Bookcase ?

- Ikea disassembly instructions.
- Flat pack housing.
- What do you perceive to be the barriers?



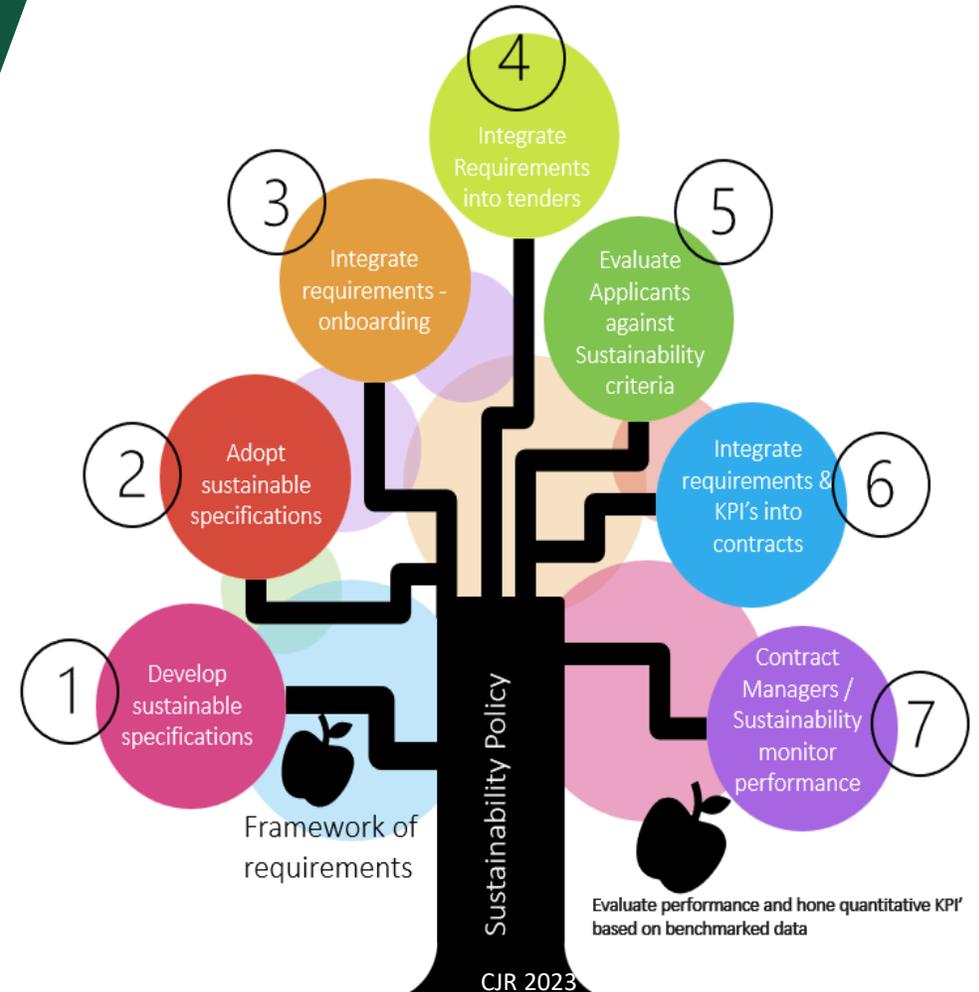
IKEA Disassembly instructions

Working Together

How much did the sector invest in existing stock last year?

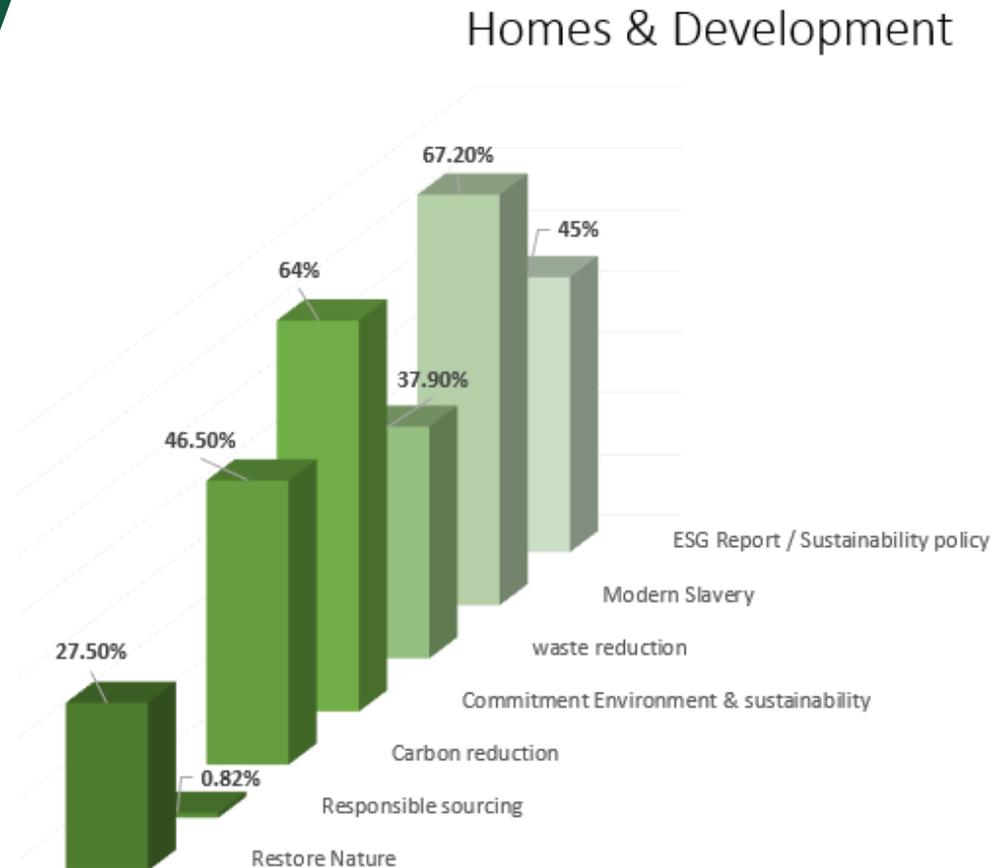
- Immense sector buying power.
- Agree & set collective standards.

Circular Procurement



Supply Chains

- Evaluating suppliers.
- Mapping suppliers & products.
- Circular/sustainable tender/contracts.
- KPIs – data outputs.
- Monitoring & management.



Data

Transparency - quantify impact.

- Range of indicators.
- Tools support & collect data.
- Performance reporting.

Get ready 4 change

STONEWATER

What social value will your contract deliver for Stonewater?
Please see table below which contains a number of examples and priorities identified for Stonewater. Please identify which social value area your organisation could contribute to in the table below. B, C & D. Optional - Please also add any additional areas of support that your organisation have the capacity and capability to can deliver.

a. Social value area	b. Scope of contribution	c. No. of hours or value	d. Other notes
Work experience placement	Each week (5 working days) of work experience provided to schools, colleges or job seekers in a Stonewater area	No. 1-6	water Customers in rows 10 & 11. Requirements for placements or pre-employment courses.
Careers information, advice and guidance sessions	Each hour volunteered to support digital inclusion, e.g. running IT workshops, education or training around digital inclusion.	No. hours	Employed people into work - providing advice and careers guidance.
Volunteer to support Digital inclusion	Every £100 contributed towards a digital inclusion initiative, e.g. purchase of software or equipment, sponsorship of courses.	Equi.	Support local community projects.
Contribution towards purchase or implementation of IT or digital equipment	Every £100 contributed towards a community project.	Donat.	(Equivalent value).
Contribution to support a community project	Each hour committed to volunteer staff time to a community project.	No. hours	Community projects (£ & materials).
Un-kind labour/service for community project	Every £100 contributed towards a poverty (or similar) initiative.	Donation	Community projects.
Contribution to food, fuel or furniture poverty initiatives	Each hour volunteered to promote or support Voluntary, Community, Social Enterprise or local community with: exercise, nutrition, wellbeing, drug/alcohol, debt relief, confidence, loneliness, mental health.	No. hours	Community projects (£ & materials).
Volunteer initiatives to promote healthy living	Each hour volunteered to promote or support Voluntary, Community, Social Enterprise or local community with homeless projects, e.g. soup kitchens, clothing or food campaigns.	No. hours	Community projects.
Volunteer support for Homelessness projects	Insert here	Insert here	Community projects.
Other - please suggest here	Insert here	Insert here	Community projects.



Summary

- Resources - increasing focus/ risk.
- Circularity an organisational strategy.
- Can't have circular supply chain without circular specifications.
- Solutions not just technical – psychological.
- Data & transparency key.
- Collaborate - make friends...
- Realistic, but not constrained.

Deliver change!





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Panel

Adam Masters, with guests Nicholas Harris, Jonathan Layzell, Clare Rainsford, Marie Riordan, and Vicki March.





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Close

Nicholas Harris, Chief Executive, Stonewater

