Good Homes Alliance 2024 Conference

"Near the tipping point... How industry must act NOW to help avert climate disaster"

Chaired by Lynne Sullivan OBE,

Chair, Good Homes Alliance

Good Homes Alliance

GHA 2024 Conference

06/02/2024, London

Today's Agenda

13:00 **Welcome to the conference**

- Opening address - Lynne Sullivan OBE, Chair, GHA
- Welcome from our Gold sponsor - Martin Hitchin, CEO, REHAU UK

13:20 **Session 1: Build Net Zero Now**

- Panel discussion – Net zero planning policy and Future Homes Standards
- Panel discussion – Net Zero Housing and Finance

14:40 **Refreshment break, exhibition, networking**

15:10 **Session 2: Adaptation and regeneration**

16:15 **Refreshment break, exhibition, networking**

16:40 **Session 3: Collective action to accelerate change**

17:50 **Closing comments from the chair**

18:00 **Conference close**

Drinks, networking and exhibition until 19:30

With thanks to our sponsors

REHAU

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Exhibitors

Please visit our exhibitors during the refreshment breaks and networking drinks.

You will find them in the catering area outside of this seminar room.

Build Net Zero Now

- Today's conference is part of our ongoing **Build Net Zero Now** campaign. Launched in 2020, the campaign calls for industry to go further and faster, and help deliver high-performing, net zero homes NOW.
- Soon to launch 'thinktanks' on Net Zero Finance and Planning & Placemaking.
- If you are interested in getting involved, please get in touch to join a thinktank, sponsor the campaign or sign up as a GHA member.

With thanks to our Phase 3 Campaign Sponsors

Passivhaus Trust

Ecology Building Society

J3 Advisory

Welcome to the conference

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REHAU

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REHAU

Session 1: Build Net Zero Now Panel Discussions

Chaired by:

Lynne Sullivan OBE, Chair, Good Homes Alliance

and

Neil Murphy, Director, TOWN/Board member, GHA

Good Homes Alliance

GHA 2024 Conference

06/02/2024, London

BUILD NET ZERO NOW Annual Conference

Panel Discussion
13:20-14:00

Net zero planning policy and Future Homes Standards

- Chaired by Lynne Sullivan OBE, Chair, Good Homes Alliance
- Celia Davis, Projects and Policy Manager, Town & Country Planning Association
- Thomas Lefevre, Etude
- Marina Goodyear, Senior Technical Consultant, Bioregional
- Emily Rubin, Principal Development Officer, Cornwall Council
- Julie Godefroy, Technical Steering Group member, Net Zero Carbon Buildings Standard
- George Martin, Chair, Building Performance Network

Panel Discussion
14:00-14:40

Net Zero Housing and Finance

- Chaired by Neil Murphy, Director, TOWN
- Rafe Bertram, Built Environment Sustainability Lead, Enfield Council
- Rachael Hunnisett, Green Mortgage Campaign Lead, Green Finance Institute
- Tom Hill, Director, Impact Management, Savills Earth
- Stephanie Landymore, Sustainability Lead, Ecology Building Society
- Philip Graham, UKRI Design Innovation Scholar at Cambridge University (Homerton College) & architect at Cullinan Studio

Refreshment break,
exhibition and networking

14:40-15:10

Session 2: Adaptation and regeneration

Chaired by:

Lynne Sullivan OBE, Chair, Good Homes Alliance

Good Homes Alliance

GHA 2024 Conference

06/02/2024, London

Session 2
15:10-16:15

Shading for housing: Designing for a changing climate

Tom Dollard, Partner - Sustainability and Innovation, Pollard Thomas Edwards

Enhancing biodiversity in housing developments

Sue Young, Head of Land Use Planning, The Wildlife Trusts

Enabling Water Smart Communities

George Warren, Integrated Water Manager, Anglian Water

Q&A

Shading for housing

Design guide for a changing climate

Tom Dollard

6th Feb 2024

Delivered by

Pollard Thomas Edwards with MAX FORDHAM, OXFORD BROOKES UNIVERSITY, MA MARTIN ARNOLD

Commissioned by

Good Homes Alliance, BBSA British Blind & Shutter Association

Supported by

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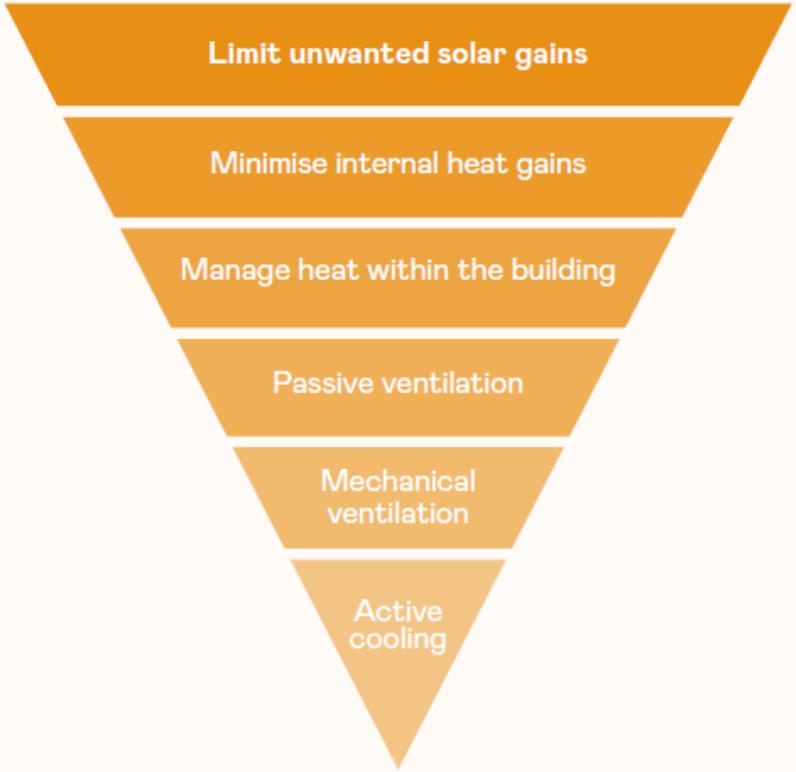
“By the middle of the 2030s, 90% of the UK housing stock will suffer from overheating.”

Introduction

- Health hazard
  - 2000 deaths caused by heatwaves
- Forgotten art
  - Until the 1950s most shops had awnings
  - Today is rarely made integral at design stage
- Barriers
  - Cultural – Considered superfluous
  - Economic – Upfront cost vs operational savings
  - Technical – Specification & detailing
  - Legislative – Open-ended



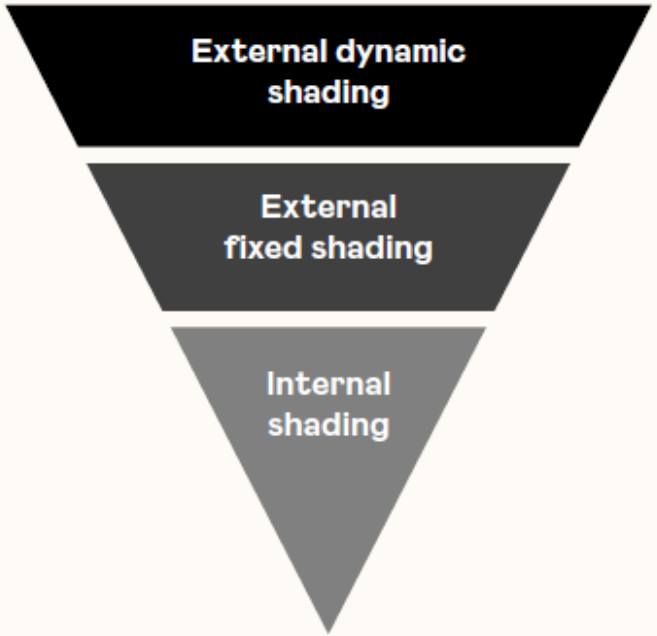
A short history of shading design

- British city makers well-versed in shading design until 1970s
- Air conditioning caused the decline of shading devices
- Environmental cost of air conditioning
- Still new homes shade free

Buckingham Palace garden party, 1897, with all the window awnings down on the south-west elevation

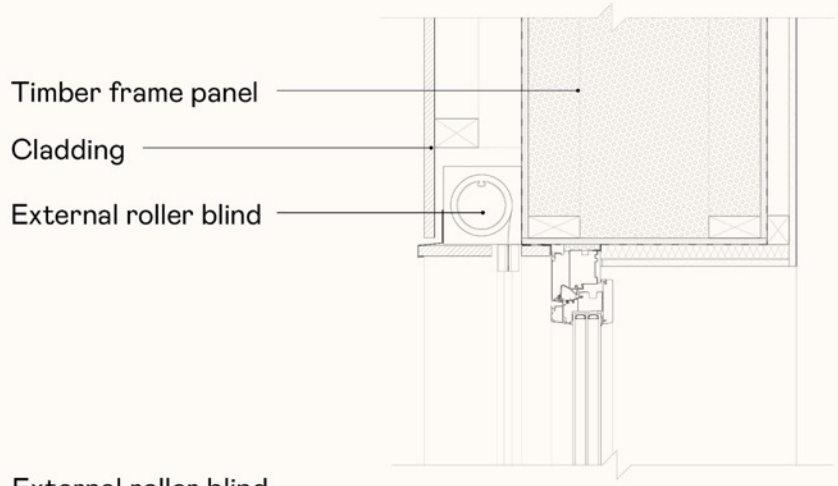
Designing for shading best practice

- Future proofing and climate resilience
  - Use of future weather data is not required for B. Regs compliance
- Retrofit and change of use
  - Building fabric and services improvement
  - Office conversion to residential
- Dynamic versus fixed
  - Dynamic can be optimized
  - Fixed can block some useful solar gains
- Internal versus external
  - External much better performance

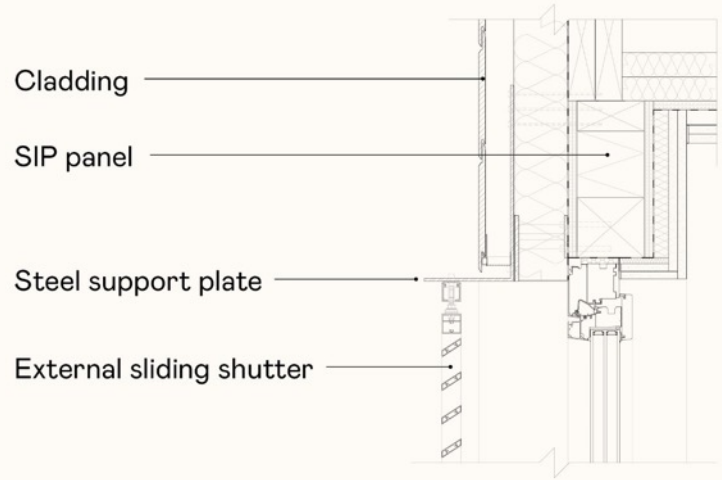


Designing for shading best practice

- Window opening
  - Inward
- Technical considerations
  - Structural support
  - Thermal bridging
  - Combustibility
- Cost
  - Number & size
  - Automation
- Embodied carbon
  - 1-2%
  - Operational savings



Detail - External roller blind



Detail - External sliding shutter

Case studies – product guide

Fixed shading devices

Product 1:
Overhang

Product 2:
Horizontal slats

Product 3:
Vertical fins

Product 4:
Fixed screens

Dynamic shading devices

Product 5:
External sliding shutters

Product 6:
External folding shutters

Product 7:
External hinged shutters

Product 8:
External venetian blinds

Product 9:
External roller blinds

Product 10:
External roller shutters

Product 11:
Drop arm awning

Product 12:
Folding arm awning

Product 13:
Dutch canopy awning

Product 14:
Internal roller blinds

Product 15:
Internal venetian blinds

Product 16:
Internal hinged shutters

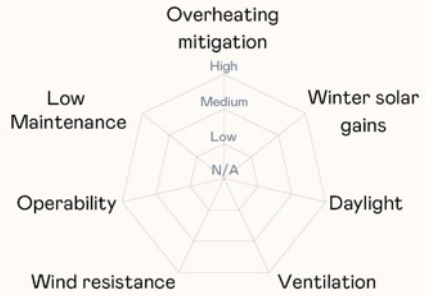
Alternative shading devices

Product 17:
Closed cavity façade

Product 18:
Window film

Product 19:
Planting

Case studies – summary of properties



Fixed shading devices

Product 1:
Overhang

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Horizontal slats

Product 3:
Vertical fins

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Fixed screens

Dynamic shading devices

Product 5:
External sliding shutters

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External folding shutters

Product 7:
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Product 8:
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Product 10:
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Product 16:
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Alternative shading devices

Product 17:
Closed cavity façade

Product 18:
Window film

Product 19:
Planting

Case studies

Product 1:
Overhang

Technical spec

Overhangs, also known as brise soleil, are installed directly above windows, providing shade without obscuring views. They can be designed in a variety of ways, with timber or metal slats, solid or perforated metals. Overhangs can strongly influence a building's 'look' and must be carefully integrated into a façade's design. Rainwater runoff, wind microclimates and the impact of birds (they perch upon them), must also be factored into an overhang's design, installation and maintenance regime.

> " We sized the depth and density [of the overhang] to control solar gain."

Goldsmith Street, Norwich
Mikhail Riches

Overheating mitigation	Medium	Deviation from south orientation losses effectiveness. The overhang depth and sill height have an impact on the effectiveness
Winter solar gains	Medium	Allows low angle sun, but blocks some useful solar gains
Daylight	Medium	Reduced all year round
Ventilation	High	Full opening area effective
Wind resistance	High	Robust device without moving parts
Operability	N/A	Operation is not required. Suitable for reduced mobility occupants. The performance is always as per design
Maintenance	Low	Inspect fixings
Cost	£	

Case studies

Product 2:
Horizontal slats

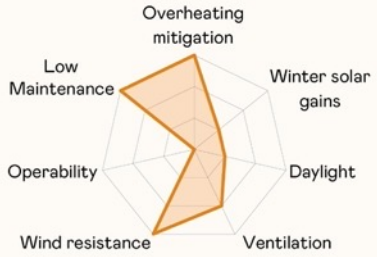
Technical spec

Horizontal slats, usually made with timber or metal, are often described as 'sun breakers'. A typical product's appearance is governed by the dimension of slats and the spaces between them – as well as their orientation when installed. Slats can be installed directly in front of a window, or at the edge of a balcony, although in both cases views out will be significantly reduced.

> " The shading design had to be part of the overall identity of the build."

Villa Caroisla, London
Nick Baker Architects

Overheating mitigation	High	Effective in all orientations. The space between slats depth and tilt angle have an impact on the effectiveness. The design needs to be adapted for each orientation, especially in East and West orientations when the sun angle is low
Winter solar gains	Low	Blocks some useful solar gains
Daylight	Low	Reduced all year round
Ventilation	Medium	Free area will be reduced depending on the slats design
Wind resistance	High	Robust device without moving parts
Operability	N/A	Operation is not required. Suitable for reduced mobility occupants. The performance is always as per design
Maintenance	Low	Inspect fixings
Cost	££££	



Case studies

Product 3:
Vertical fins

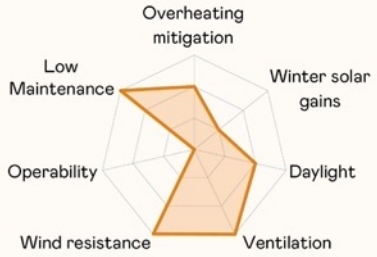
Technical spec

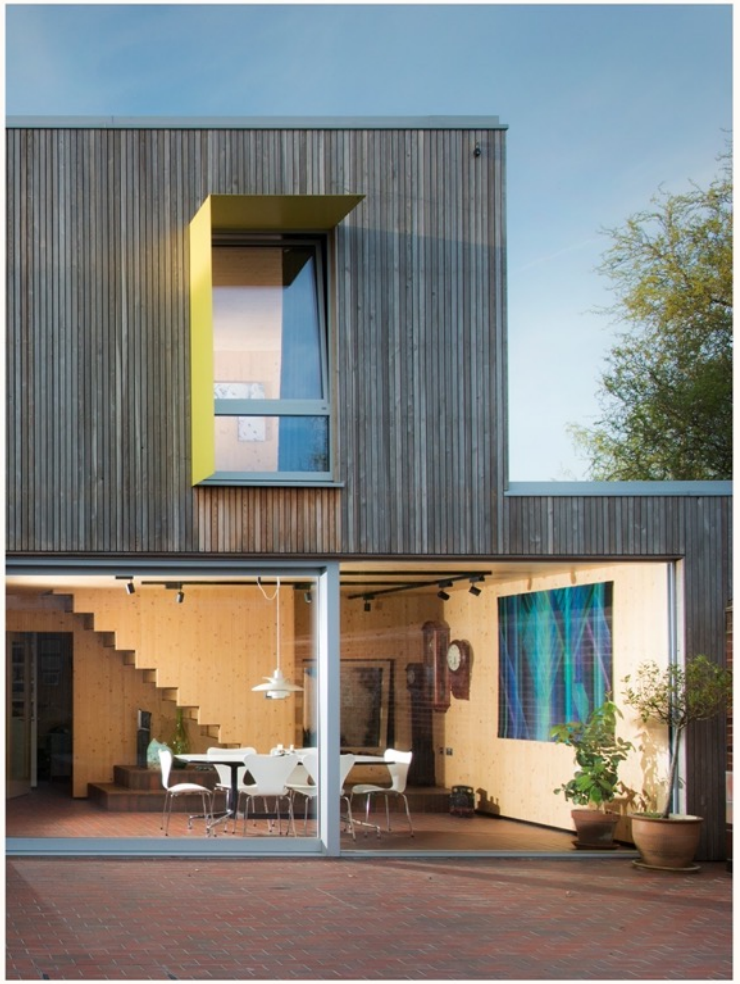
Vertical fins – usually made with timber or metal – are fitted alongside windows, providing shade without obstructing views. Depending on a façade's orientation, vertical fins can be combined with overhangs to increase a building's shade cover. As with brise soleil, wind microclimates and interference by birds, must be considered. Colour-coated fins can also be used to visually enhance façades.

> " The yellow hue gives a pop of colour on the timber facade."

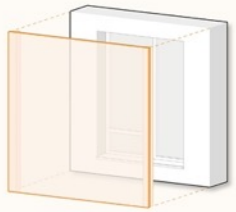
Hampshire Passivhaus
Ruth Butler Architects

Overheating mitigation	Medium	Effective in a very specific north east and north west orientation. The fin depth and glazing width have an impact on the effectiveness
Winter solar gains	Low	Blocks some useful solar gains
Daylight	High	Slightly reduced and in some instances improved depending on the colour of the fin which can reflect light inside
Ventilation	High	Full opening area effective
Wind resistance	High	Robust device without moving parts
Operability	N/A	Operation is not required. Suitable for reduced mobility occupants. The performance is always as per design
Maintenance	Low	Inspect fixings
Cost	£	





Case studies



Product 4:
Fixed screens

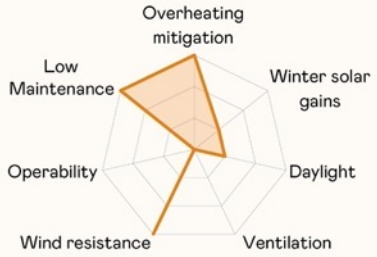
Technical spec

These metal perforated sheets, suitable for balconies and deck access buildings, can lend a unique aesthetic to a building while also contributing to residents' privacy. Where they are placed, however, is crucial - to avoid interference with ventilation and views, which can be significantly reduced.

> " These patterned screens – with William Morris roses - shield west-facing access decks from bright sunlight."

Colby Lodge, London
Pollard Thomas Edwards

Overheating mitigation	High	Effective in all orientations. Effectiveness depends on the screen's free area
Winter solar gains	Low	Blocks useful solar gains
Daylight	Low	Reduced all year round
Ventilation	N/A	Depends mainly on the position of the screen. The impact of the free area of the screen will increase the closer to the window it is installed
Wind resistance	High	Robust fixed element
Operability	N/A	Operation is not required. Suitable for reduced mobility occupants. The performance is always as per design
Maintenance	Low	Inspect fixings
Cost	£	



Case studies

Product 5:
External sliding shutters

Technical spec

Sliding shutters made of waterproof, hardwearing materials attach to tracks fixed to building façades. Like sliding doors, shutters can slide away completely, revealing windows in full. Furthermore, their inherently dynamic nature can enliven a façade's appearance. When opened, shutters typically stack behind each other, while multiple shutters can be overlapped within the same track to fully shade wider windows.

Overheating mitigation	High	Blocks solar gains when fully closed. Effective in all orientations
Winter solar gains	High	Allows maximum solar gains when fully opened
Daylight	Medium	Depends on the free area of the shutters and how much they are closed. In winter allows maximum daylight when fully opened
Ventilation	Medium	Allows ventilation, but depends on the free area of the shutters and how much they are closed
Wind resistance	High	Robust device fitted within channels
Operability	Low	Manually operated that requires leaning out the window. Not suitable for reduced mobility occupants. The performance depends on occupant behaviour
Maintenance	Medium	Inspect channels and wheels
Cost	££££	

> " The sliding mechanism of the shutters and their position when open breaks down the façade to avoid large expanses of blank wall."

Hanham Hall, South Gloucestershire
HTA

Case studies

Product 6:
External folding shutters

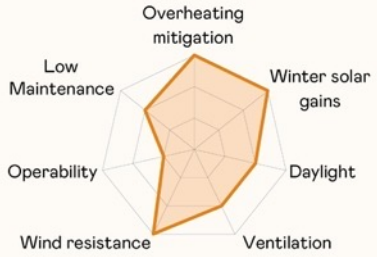
Technical spec

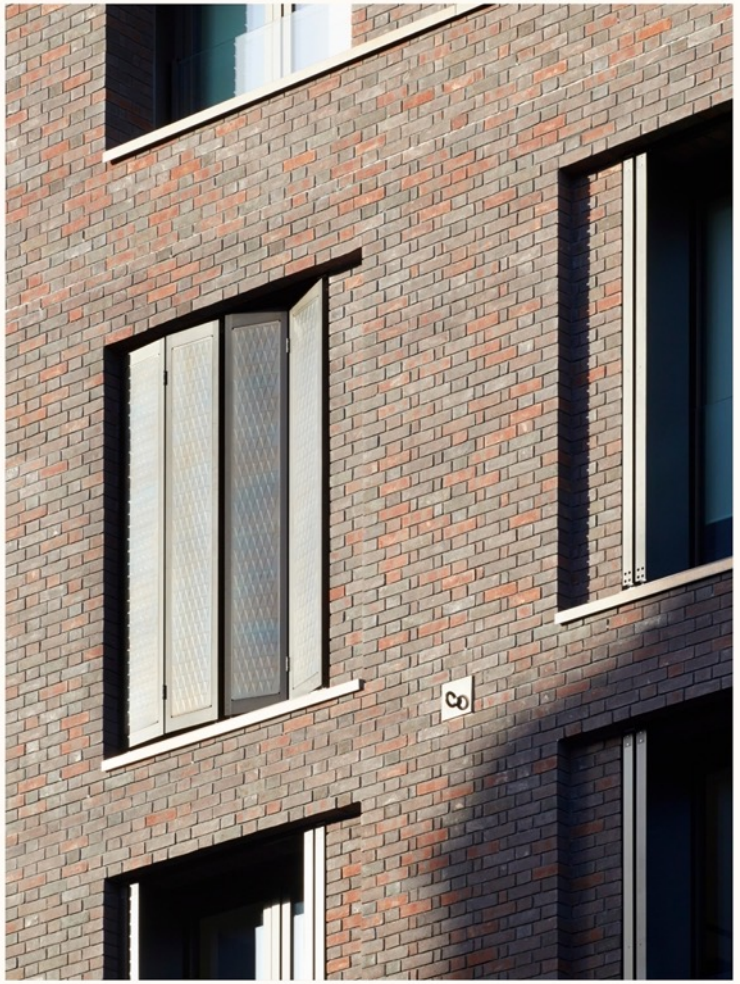
Typically, external folding shutters are made of horizontal timber or metal slats, but perforated metal screens can also be used. Depending on the depth of the window reveal, shutters fold within the reveal or project off of the façade. Multiple shutters can be hinged together to shade wide windows.

Overheating mitigation	High	Blocks solar gains when fully closed. Effective in all orientations
Winter solar gains	High	Allows maximum solar gains when fully opened
Daylight	Medium	Depends on the free area of the shutters and how much they are closed. In winter allows maximum daylight when fully opened
Ventilation	Medium	Allows ventilation, but depends on the free area of the shutters and how much they are closed
Wind resistance	High	Robust device fitted within channels
Operability	Low	Manually operated that requires leaning out the window. Not suitable for reduced mobility occupants. The performance depends on occupant behaviour
Maintenance	Medium	Inspect channels, wheels and hinges
Cost	££££	

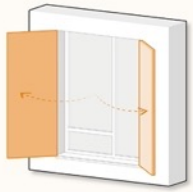
“ Finished in patinated bronze sheet-metal with a subtle triangular embossed pattern that aligns with the brickwork coursing.”

Oxbourne House, London
Fletcher Priest Architects





Case studies



Product 7:
External hinged shutters

Technical spec

External hinged shutters, usually made of timber (and colour-coated), can transform the appearance of façades. There are two types: those made of slats which allow certain degree of daylight and views out and solid shutters - which have a 'block-out' and privacy function. Occupants lean out of windows to close the shutters, posing a safety risk when installed at higher levels.

Overheating mitigation	High	Blocks solar gains when fully closed. Effective in all orientations
Winter solar gains	High	Allows maximum solar gains when fully opened
Daylight	Medium	Depends on the free area of the shutter. In winter allows maximum daylight when fully opened
Ventilation	Medium	Allows ventilation, but depends on the free area of the shutters
Wind resistance	High	Robust device with suitable locking system
Operability	Low	Manually operated that requires leaning out the window. Not suitable for reduced mobility occupants. The performance depends on occupant behaviour
Maintenance	High	Inspect hinges and locking system. Re-painting every few years is required
Cost	££	

"These shutters blend well with the historic built environment - their design and colour animates the street, and they reduce heat gain during the hot summer days."

Sliema Palazzino, Malta
Architecture XV

Case studies

Product 8:
External venetian blinds

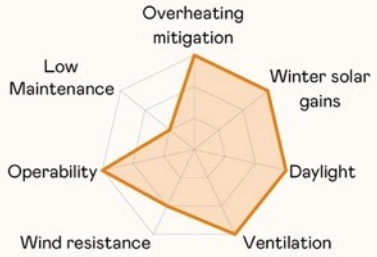
Technical spec

External venetian blinds consist of thin, deep, metal (often coloured) slats that can be manually controlled to allow views out, whilst still providing solar control. Slat tilt angles control privacy levels too. When retracted, slats stack in a box installed in the window head, leaving the window fully exposed.

Overheating mitigation	High	Blocks most of the solar gains when fully extended. Effective in all orientations
Winter solar gains	High	Allows maximum solar gains when fully retracted
Daylight	High	The thin slats maximise the free area to allow daylight ingress. In winter allows maximum daylight when fully retracted
Ventilation	High	Allows ventilation, but depends on the free area between the slats, the tilt angle and how much the blind is extended
Wind resistance	Medium	Side channels are more robust than cable guides. The blind automatically retracts in high winds if linked to sensors
Operability	High	Motorised and automatic options are available. Suitable for reduced mobility occupants. The performance depends on the control option and occupant behaviour
Maintenance	High	Inspect channels and lift tape. Access to the motor in the blind box is required
Cost	£££	

> “An elegant way to reduce solar gains in the summer and maximise solar gains in the winter.”

Camden Passive House, London
Bere Architects



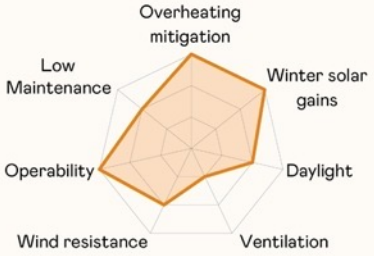
Case studies

Product 9:
External roller blinds

This product is a box installed in the window head containing a blind - a weather-resistant fabric - with side channels or cables allowing users to guide the blind upwards into the box or downwards to cover the glazing. The blind can be coloured and/or have different levels of opacity, providing a degree of glare control (and views out). Suitable for shading façades and roofs with complex geometries.

Overheating mitigation	High	Blocks solar gains when fully extended. Effective in all orientations
Winter solar gains	High	Allows maximum solar gains when fully retracted
Daylight	Medium	The mesh material is designed to facilitate adequate light levels in winter allowing maximum daylight when fully retracted
Ventilation	Low	The mesh material allows for a certain degree of ventilation, but it will mainly depend on how much the blind is extended
Wind resistance	Medium	Side channels are more robust than cable guides. The blind automatically retracts in high winds if linked to sensors
Operability	High	Motorised and automatic options are available. Suitable for reduced mobility occupants. The performance depends on the control option and occupant behaviour
Maintenance	Medium	Inspect fabric and channels or cables. Access to the motor in the blind box is required
Cost	£££	

Technical spec



Case studies

Product 10:
External roller shutter

An external roller shutter is made of connected rigid slats, usually PVC or aluminium, that retract into a box installed in the window head. Small gaps between the slats provide a limited amount of daylight and ventilation and when fully extended provide a 'block-out' function.

Overheating mitigation	High	Blocks solar gains when fully extended. Effective in all orientations
Winter solar gains	High	Allows maximum solar gains when fully retracted
Daylight	Low	The gaps between the slats allow for a certain degree of daylight, but it will mainly depend on how much the shutter is retracted. In winter allows maximum daylight when fully retracted
Ventilation	Low	The gaps between the slats allow for a certain degree of ventilation, but it will mainly depend on how much the shutter is retracted
Wind resistance	High	Rigid slats guided by side channels can withstand strong winds
Operability	High	Motorised and automatic options are available. Suitable for reduced mobility occupants. The performance depends on the control option and occupant behaviour
Maintenance	Medium	Inspect channels and slats. Access to the motor in the shutter box is required
Cost	££	

Technical spec

Central Somers Town, London
Adam Khan Architects

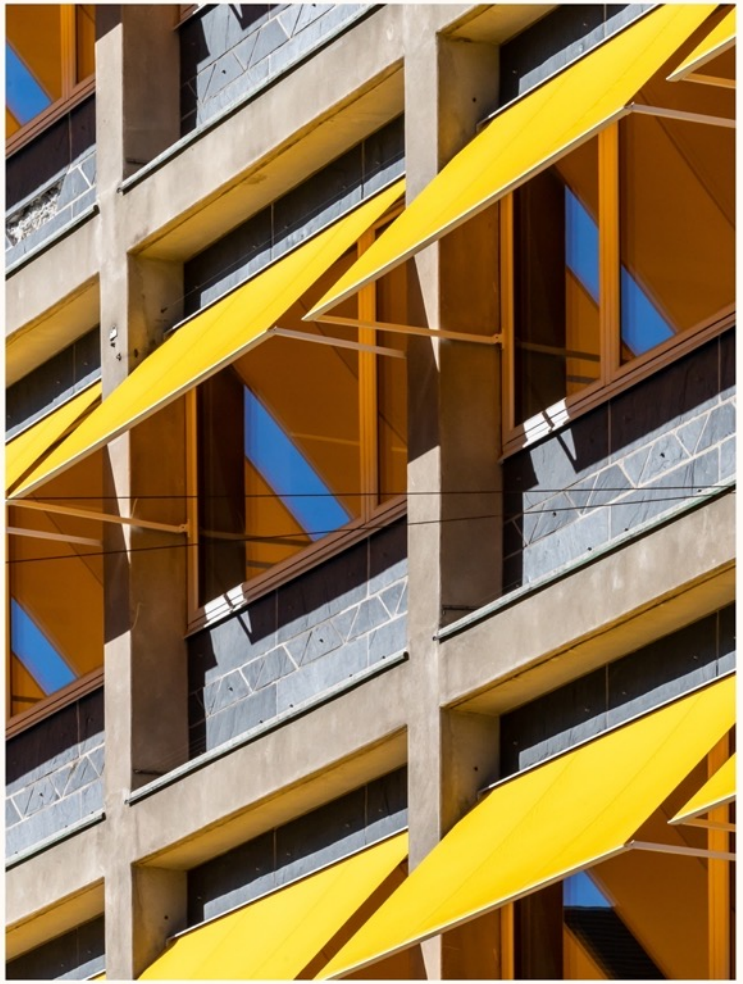
Case studies

Product 11:
Drop arm awning

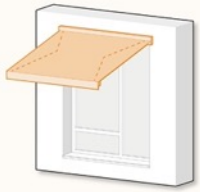
A drop arm awning is a three dimensional shading product more typically used on commercial shopfronts. It consists of a box installed in the window head, containing a blind made of weather resistant fabric, with spring-loaded, hinged side arms that lower and keep the fabric taut.

Overheating mitigation	Medium	Deviation from south orientation loses efficacy. Effectiveness depends on the awning depth and window sill height
Winter solar gains	High	Allows maximum solar gains when fully retracted
Daylight	Medium	Daylight reduction depends on the colour of the fabric and the arm length
Ventilation	High	Large effective ventilation area
Wind resistance	Low	The side arms are not able to withstand continuous high wind levels and therefore the awning should be equipped with sensors to automatically retract
Operability	High	Manual and automatic options are available. Automatic option suitable for reduced mobility occupants. The performance depends on the control option and occupant behaviour
Maintenance	Medium	Inspect side arms and fabric. Access to the blind box is required
Cost	££	

Technical spec



Case studies



Product 12:
Folding arm awning

A folding arm awning consists of a box installed in the window head, containing a blind made of weather resistant fabric, with spring-loaded, folding arms that retract and keep the fabric taut. Projecting off the façade, awnings provide sun control particularly to large, glazed areas, as well as shading people sitting below. The fabric is extended at a slight angle, allowing views out.

Overheating mitigation	Medium	Deviation from south orientation loses efficacy. Effectiveness depends on the awning depth and window sill height
Winter solar gains	High	Allows maximum solar gains when fully retracted
Daylight	Medium	Daylight reduction depends on the colour of the fabric and the arm length
Ventilation	High	Large effective ventilation area
Wind resistance	Low	The side arms are not able to withstand continuous high wind levels and therefore the awning should be equipped with sensors to automatically retract
Operability	High	Manual and automatic options are available. Suitable for reduced mobility occupants. The performance depends on the occupant behaviour
Maintenance	Medium	Inspect arms. Access to the motor in the cassette is required
Cost	££££	

Technical spec

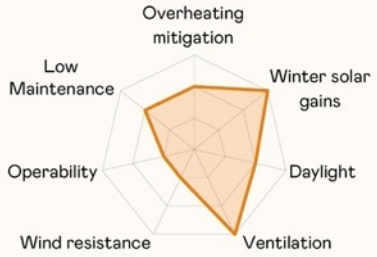
Case studies

Product 13:
Dutch canopy awning

This weather-resistant blind, fixed to a frame - consisting of multiple spring-loaded hinged arms that lower and keep the fabric taut – creates a rounded quarter circle that projects off of the façade. All sides of the frame are covered by the blind affording additional solar protection. Typically considered well suited for historic buildings.

Technical spec

Overheating mitigation	Medium	Deviation from south orientation loses efficacy. Effectiveness depends on the awning depth and window sill height
Winter solar gains	High	Allows maximum solar gains when fully retracted
Daylight	Medium	Daylight reduction depends on the colour of the fabric and the arm length
Ventilation	High	Large effective ventilation area
Wind resistance	Low	Should be retracted in strong winds
Operability	Low	Manually operated. The performance depends on the occupant behaviour
Maintenance	Medium	Inspect framework and operating mechanism
Cost	££	



Case studies

Product 14:
Internal roller blinds

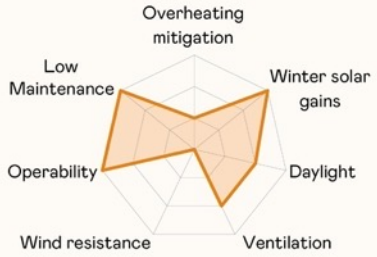
Internal roller blinds – which come in multiple textures, colour and patterns - are fixed to the ceiling or wall above windows. Fabric can be opaque and provide blackout function, or have varying degrees of transparency, to calibrate privacy and glare control levels, while also allowing views out. Easily combined with external shading products.

Note: Internal roller blinds should not be taken into account for Building Regulations overheating compliance.

Overheating mitigation	Low	Does not significantly reduce the solar gains
Winter solar gains	High	Allows maximum solar gain when fully retracted
Daylight	Medium	Daylight level depends on the fabric type and colour. It can assist with glare control when lowered on sunny days
Ventilation	Medium	The mesh material allows for a certain degree of ventilation but it will mainly depend on how much the blind is closed
Wind resistance	N/A	Not designed for wind resistance. Unless guided by cables or channels, blind can move when window is open during strong winds
Operability	High	Manual and automatic options are available. Suitable for reduced mobility occupants. The performance depends on the control option and occupant behaviour
Maintenance	Low	Access to the blind box is required
Cost	£	

Technical spec

Jolles House, London
Pollard Thomas Edwards



Case studies

Product 15:
Internal venetian blinds

Technical spec

Internal venetian blinds consist of thin, deep, metal (often coloured) slats that can be manually controlled to allow views out, whilst still providing solar control. Slat tilt angles control privacy levels too. When retracted, slats stack in a box installed in the window head, leaving the window fully exposed.

Note: Internal venetian blinds should not be taken into account for Building Regulations overheating compliance.

Overheating mitigation	Low	Does not significantly reduce the solar gains
Winter solar gains	High	Allows solar gain when fully retracted
Daylight	High	The thin slats maximise free area which allow daylight entry. Maximum daylight entry allowed in winter
Ventilation	High	Ventilation rate depends on the free area between slats and how much of the window is covered by product
Wind resistance	N/A	Not designed for wind resistance. Unless guided by cables or channels, blind can move when window is open during strong winds
Operability	High	Manual and automatic options are available. Suitable for reduced mobility occupants. The performance depends on the control option and occupant behaviour
Maintenance	Low	Check cords for wear
Cost	£	

> “ The blinds were just one of many elements that residents were able to customise themselves.”

Beechwood Village, Basildon
Pollard Thomas Edwards

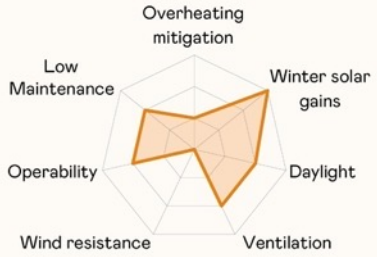
Case studies

Product 16:
Internal hinged shutters

This product consists of multiple panels – painted timber louvres - fitted within a frame and fixed to the internal window reveal. Shutters can be tracked for larger windows. Louvres can be fixed or operable, to allow for control of privacy and views. Café style shutters allow for the lower portion of glazing to be shaded for privacy while light enters through the unshaded upper portion.

Technical spec

Overheating mitigation	Low	Does not significantly reduce the solar gains
Winter solar gains	High	Allows maximum solar gain when fully opened
Daylight	Medium	Flexible, depending on free area between slats and percentage of shutters closed
Ventilation	Medium	Allows ventilation, but depends on the free area between slats and how much the shutters are closed
Wind resistance	N/A	Not designed for wind resistance
Operability	Medium	Manually operated. Suitability for reduced mobility occupants depends on the sill height. Performance depends on the occupant behaviour
Maintenance	Medium	Inspect hinges and locking system
Cost	£££	

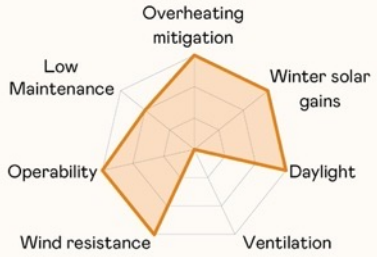


Case studies

Product 17:
Closed cavity façade

The performance of a shading product installed within a glazed vented cavity is similar to the same product if it were installed externally. The shading products commonly used in this type of façade are venetian blinds or roller blinds. The use of closed cavity façades with integrated shading products is sometimes used in tall, glazed buildings.

Overheating mitigation	High	The performance of the shading device is similar to the same device installed externally only if installed within a vented false façade. Effective in all orientations
Winter solar gains	High	Allows maximum solar gains when slats turned horizontally or when blind is fully retracted
Daylight	High	Allows optimum daylight when slats turned horizontally or when blind is fully retracted
Ventilation	N/A	Curtain wall system does not allow natural ventilation
Wind resistance	High	This system will not be affected by wind due to protection from the curtain wall system
Operability	High	Automatically operated. Suitable for reduced mobility occupants.
Maintenance	Medium	Being protected from the environment reduces wear and tear. Access to the cavity is required
Cost	££££	



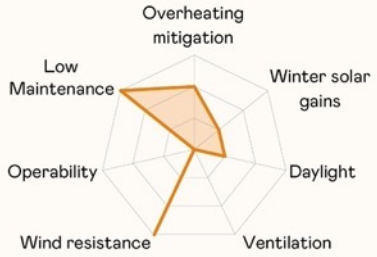
The Shard, London
Renzo Piano

Case studies

Product 18:
Window film

Window film is a self-adhesive film with solar control properties that is applied to the surface of the glass. Depending on the product, it can significantly change glazing and daylight colour. Some films also have privacy function whilst allowing views out. Typically used on existing buildings where retaining the look of existing façades is required.

Overheating mitigation	Medium	Blocks solar gains. Effective in all orientations
Winter solar gains	Low	Blocks useful solar gains
Daylight	Low	Blocks some degree of daylight all year round. It changes the colour of the light
Ventilation	N/A	Window film does not affect ventilation
Wind resistance	High	Permanently adhered to the glass
Operability	N/A	Operation is not required. Suitable for reduced mobility occupants. Performance always as per design
Maintenance	Low	Cleaning required
Cost	£	



Case studies

Product 19:
Planting

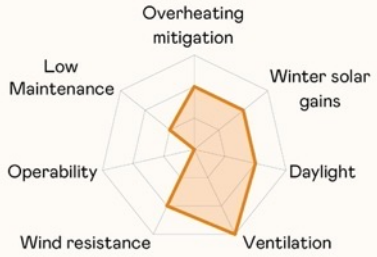
Deciduous plants are a natural way to increase biodiversity and lend social value while providing shade and allow for winter solar gain. However, it is difficult to accurately measure and model performance, given the changing nature of plant-life, both seasonally and across their lifespans. Often used in tandem with other shading products.

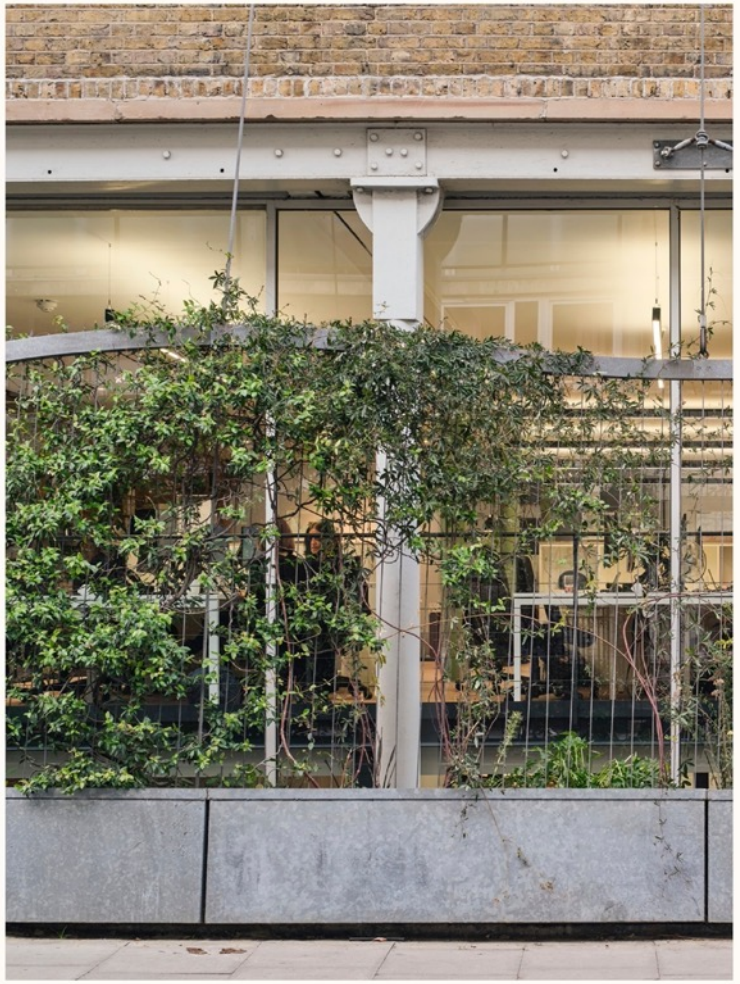
Note: Planting should not be taken into account for Building Regulations overheating compliance.

Overheating mitigation	Medium	Depends on the size and amount of leaves of plant species. Effective in all orientations
Winter solar gains	Medium	Loss of leaves will allow solar gains during the winter months. Branches will still block some useful solar gains
Daylight	Medium	Depends on the size and amount of leaves of plant species
Ventilation	High	Leaves and branches are flexible allowing air movement without great resistance
Wind resistance	Medium	Leaves and branches may not resist strong winds
Operability	N/A	Operation is not required. Real performance is unpredictable
Maintenance	High	Requires regular watering and trimming
Cost	£££	

> “ It gives back to the street in so many ways – with colour, biodiversity and even social value – kids love playing alongside it when they walk past.”

Diespeker Wharf, London
Pollard Thomas Edwards





Cost

Product	Cost (£)
Projecting aluminium sunbreaker 50% drop of window	3780
200mm aluminium aerofoil louvres fixed vertical or horizontal	8350
External roller blind with free hanging fabric guides motorised	5100
External venetian blind with fascia box motorised	5360
External roller shutter	4434
External drop arm awning motorised	4173
External Dutch canopy	4184
External foldaway awning manual	2450
Internal venetian manual	1164
Internal roller blinds standard fabric manual	1040
Internal plantation style timber shutter	5120

*Example cost illustration for house with 8 No. windows

Modelling in appendix

Modelling: Fixed vs Dynamic

Fixed

- Summertime performance:
  - Peak
  - Cumulative
- Optimisation of:
  - Geometry
  - Orientation
- Daylight – Overcast sky

Dynamic

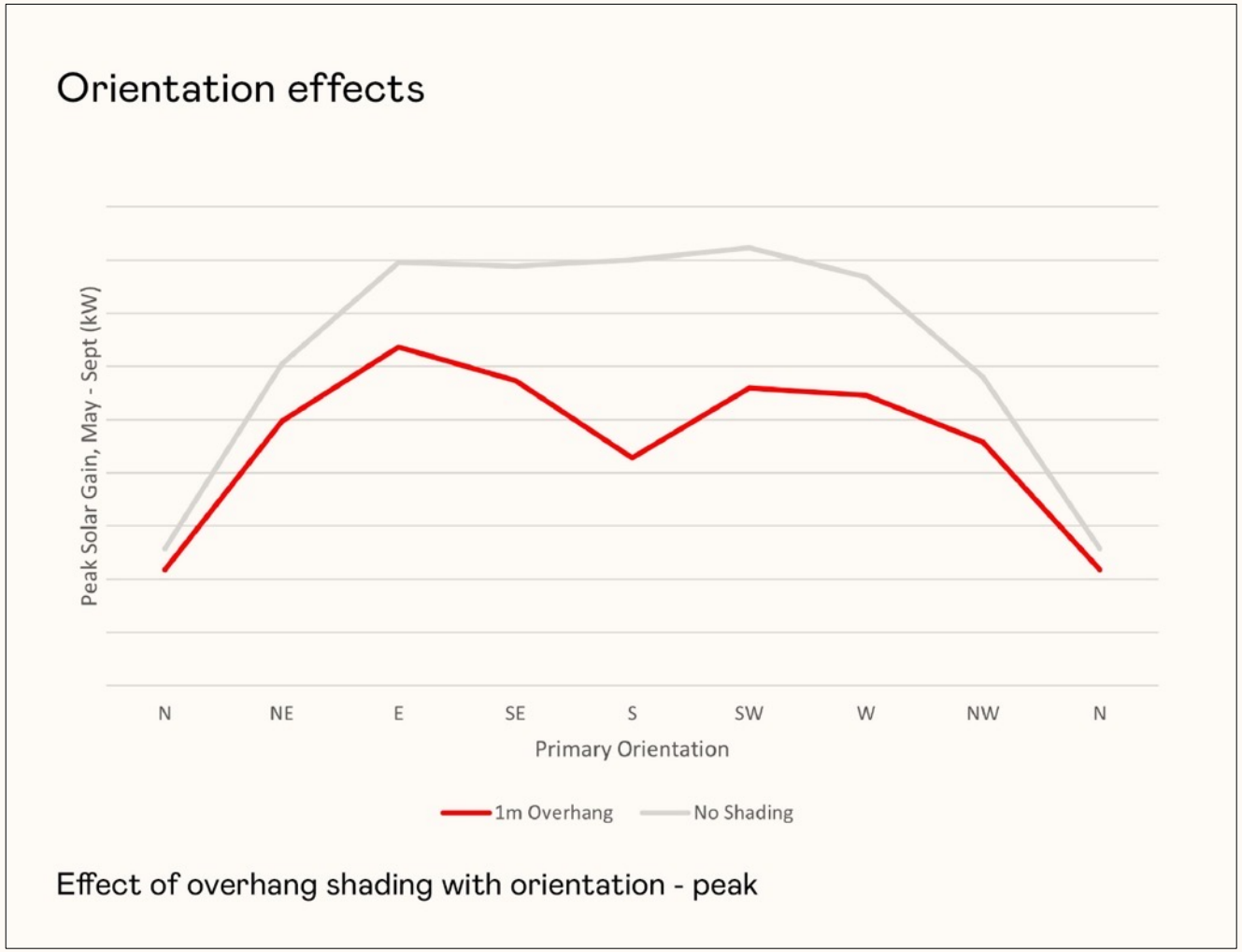
- Typical summer day
- Optimisation of materiality
- Daylight – Sunny sky

Fixed: Overhang

Grey = unshaded

Red = shaded

The lower the red line from the grey, the better the performance

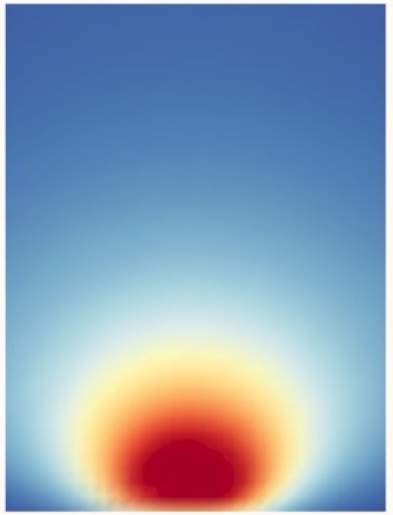


Effect of overhang shading with orientation - peak

Fixed: Overhang

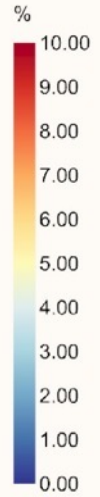
Effect with overcast sky

Daylight factor images – overcast



Unshaded daylight factor plot

Daylight factor plot with overhang



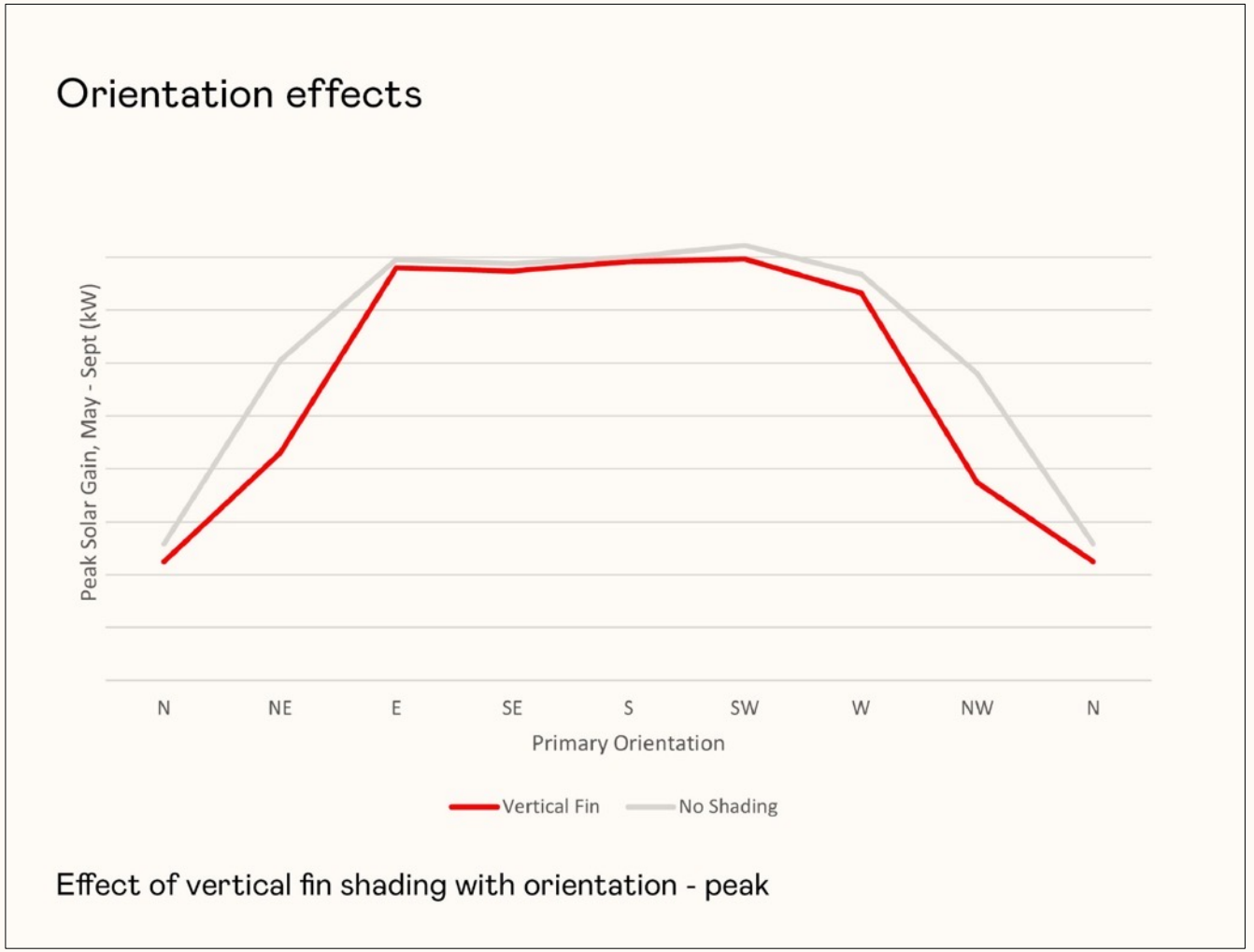
Contour scale/legend for daylight factor plots

Fixed: Vertical fin

Grey = unshaded

Red = shaded

The lower the red line from the grey, the better the performance



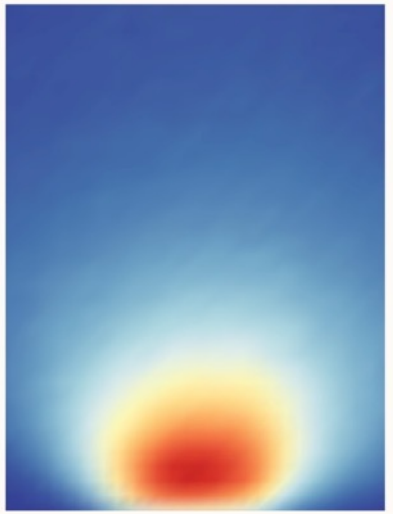
Effect of vertical fin shading with orientation - peak

Fixed: Vertical fin

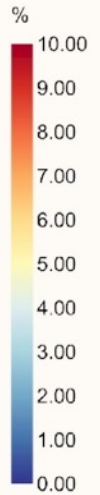
Effect with overcast sky

Daylight factor images – overcast

Unshaded daylight factor plot

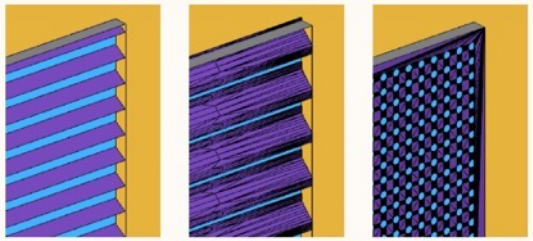


Daylight factor image of room with vertical fin



Contour scale/legend for daylight factor plots

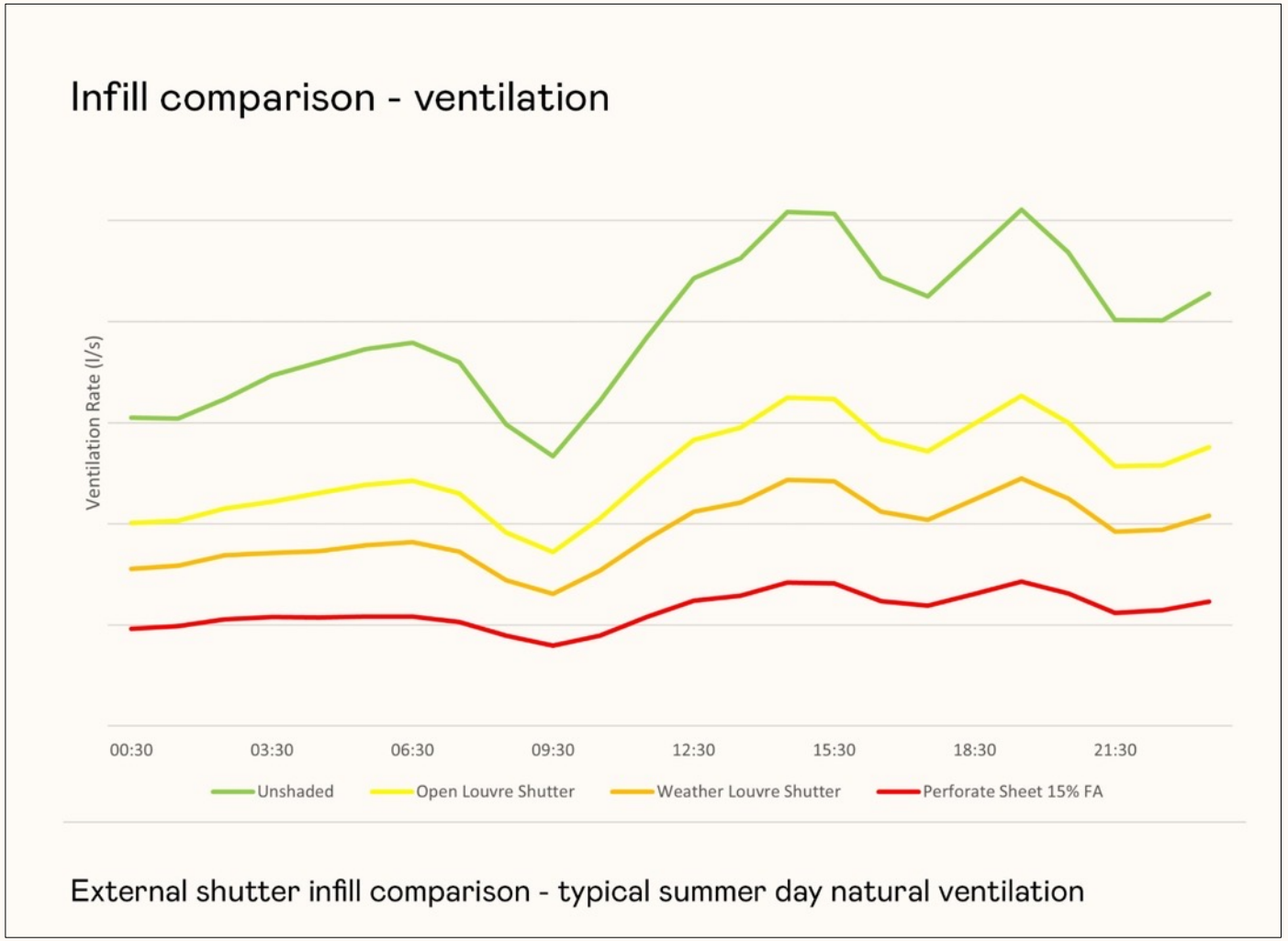
Dynamic: External shutters



Green = unshaded

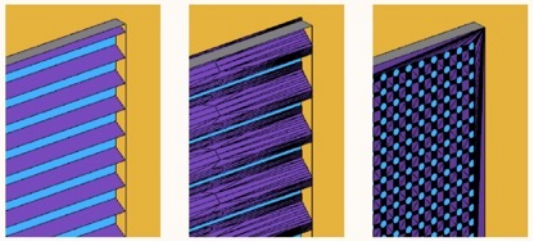
YOR = different infill types

The closer to the green line, the better the performance



External shutter infill comparison - typical summer day natural ventilation

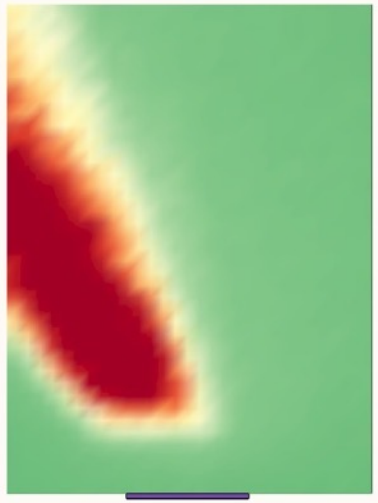
Dynamic: External shutters



Effect with sunny sky

Should be retracted with overcast sky

Daylight factor images – sunny sky



'Open Louvre' infill (contrasol linear 55) daylight lux plot, sunny sky

'Weather Louvre' Infill (Contrasol 40Z) daylight lux plot, sunny sky

'perforate' infill (contrasol perforated - approx 15%) daylight lux plot, sunny sky

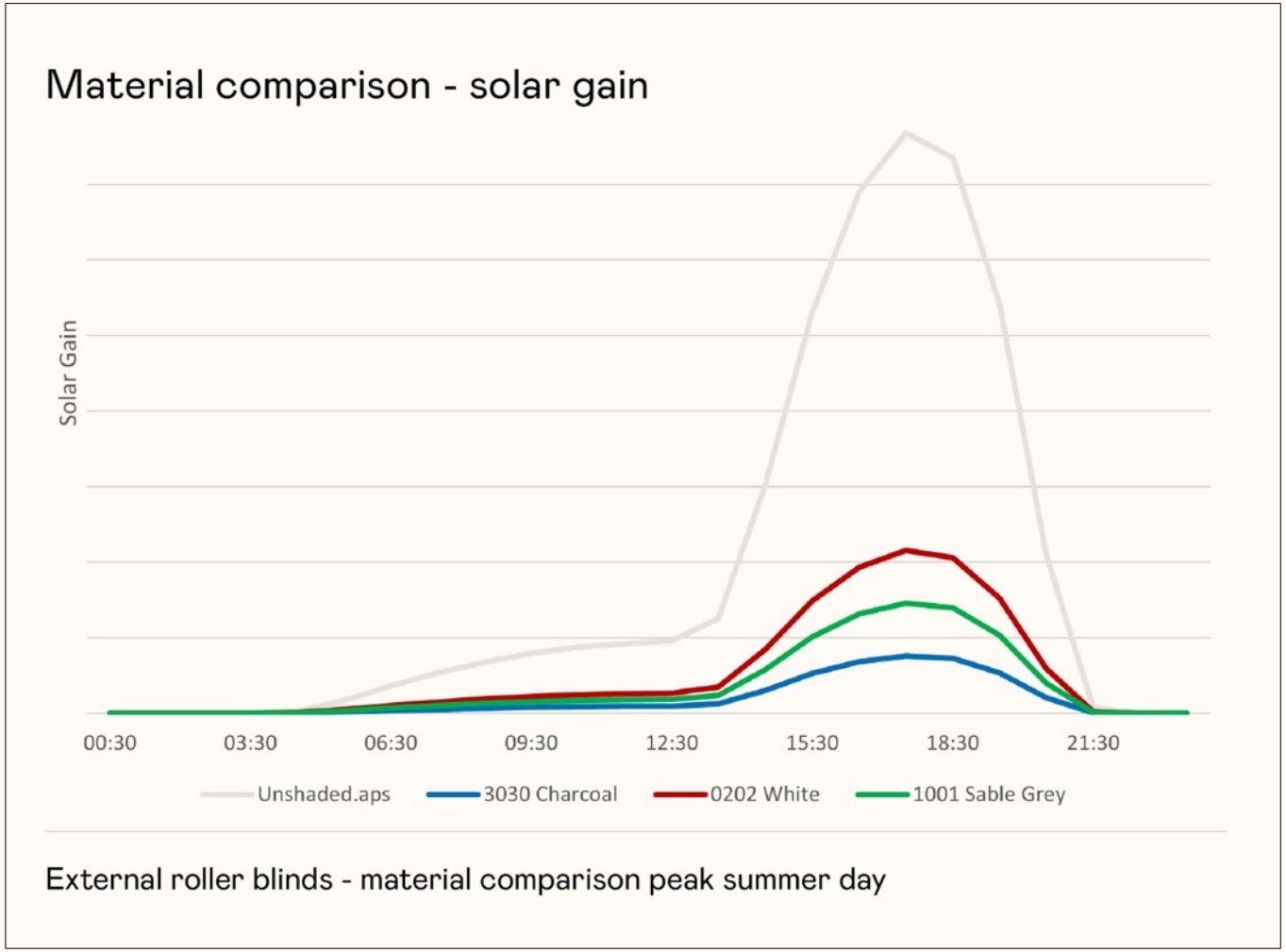
Contour scale/legend for lux plots sunny sky

Dynamic: External roller blinds

Grey = unshaded

RGB= different blind colours

The lower from the grey line, the better the performance



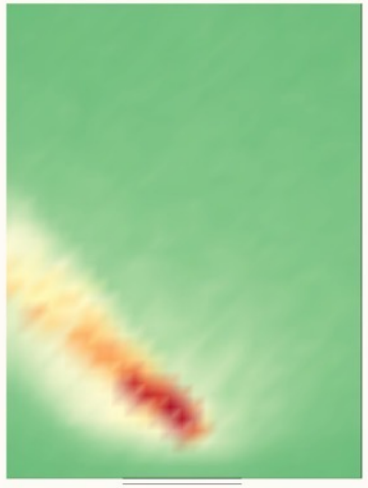
External roller blinds - material comparison peak summer day

Dynamic: External roller blinds

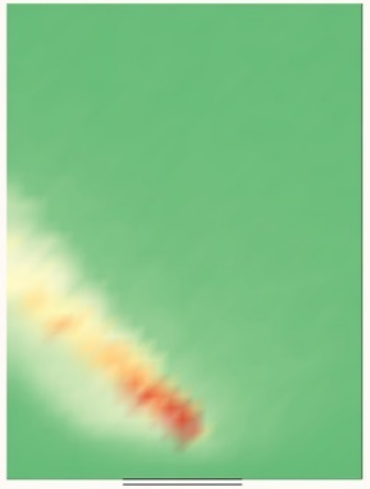
Effect with sunny sky

Should be retracted with overcast sky

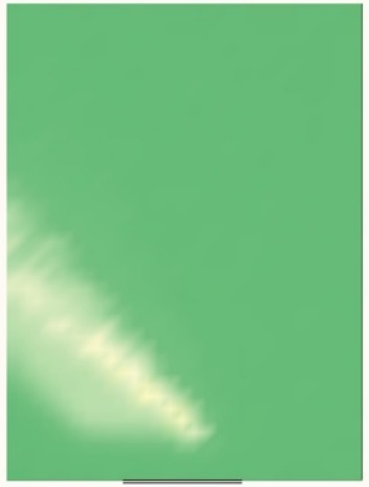
Daylight illuminance images - sunny sky



Daylight lux plot (sunny sky) 0202 White material external roller blind



Daylight lux plot (sunny sky) 1001 Sable Grey material external roller blind



Daylight lux plot (sunny sky) 3030 Charcoal material external roller blind

Contour scale/legend for lux plots sunny sky

Conclusion

Recommendations

- Future proof homes - use future weather data in the modelling
- Incorporate external shading products from the start
- Prioritise dynamic shading - optimised performance in all seasons
- Inward opening windows - more ventilation, safer to operate, easier to clean
- Resident awareness on how to use

Download the guide

Good Homes Alliance website

goodhomes.org.uk/news/shading-for-housing

Pollard Thomas Edwards

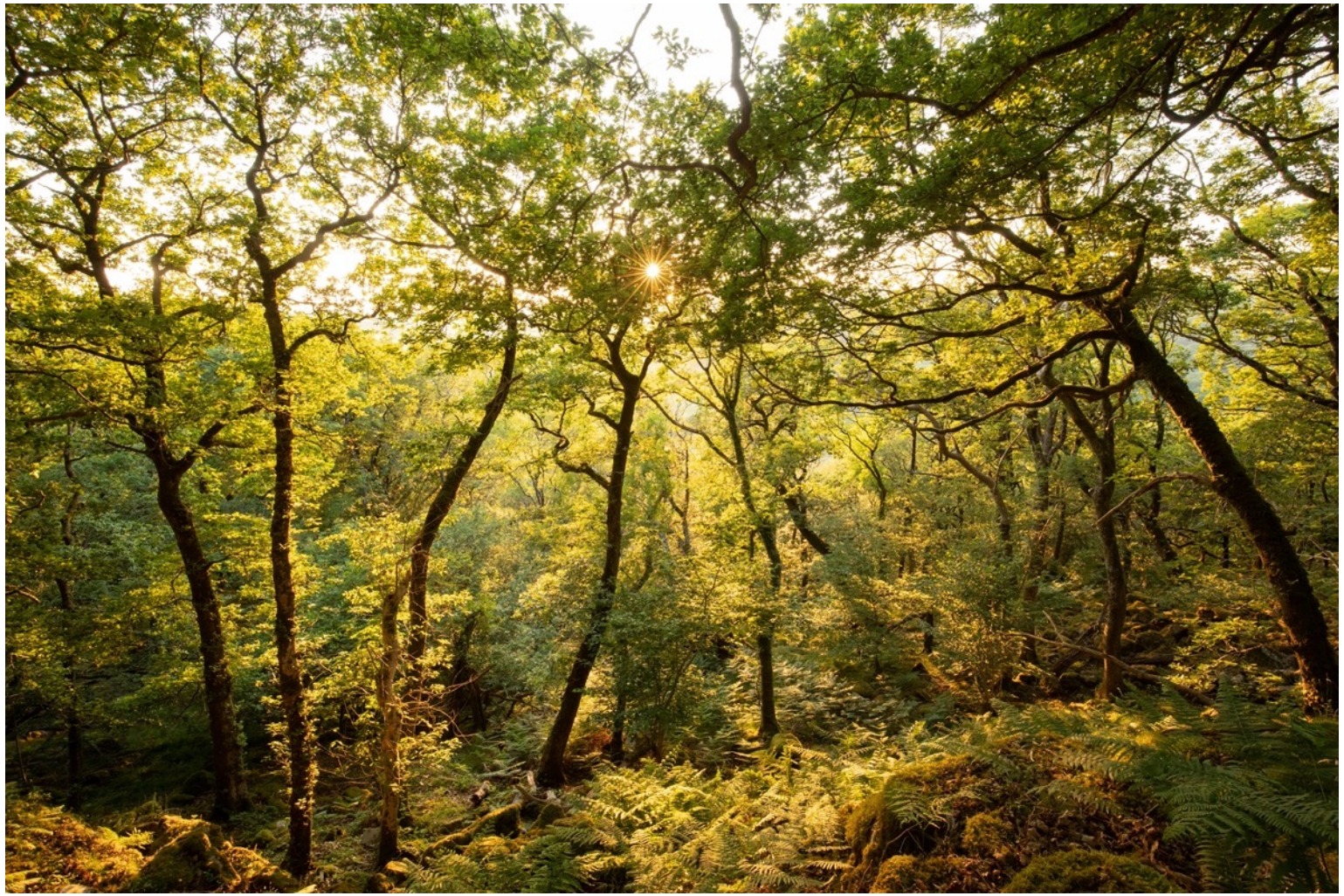
Nature and housing

Dr Sue Young

The Wildlife Trusts

Our vision is of a thriving natural world, with our wildlife and natural habitats playing a valued role in addressing the climate and ecological emergencies, and everyone inspired to get involved in nature’s recovery.

Why nature?



© Ben Porter

What else can natural green space do for us?

Provide temporary floodwater storage

Reduce the heat island effect

Provide shade and cooling

Recreational space for communities

Boost biodiversity

The Wildlife Trusts' vision for sustainable housing

- Provide the right homes
- In the right place
- In the right way
- Using nature and people centred design
- Within environmental limits

Build homes in the right place

- Follow the mitigation hierarchy:
  - Development should **avoid** harming nature,
  - Where this is not possible, all harm should be **mitigated**, or as a last resort **compensated**.
- Avoid building in the floodplain
- Well connected for public transport and wider services

Build in the right way

Features for climate adaptation can be designed to benefit nature

Build homes in the right way

Nature and people-centred design

Nature-rich open space

Nature on your doorstep

Traffic-free greenways

Accessible to all

Biodiversity-Net Gain with The Wildlife Trusts

At The Wildlife Trust we are committed to delivering the best outcomes for Nature. This means we want to achieve a gold standard of Biodiversity Net-Gain that is both high quality and high integrity.

What is 'Gold Standard Biodiversity Net-Gain'?

- Always additional
- Strategically located to support Nature's recovery
- Delivers ecologically resilient habitats, in the right places.
- Protected in perpetuity and integrated into our network of Nature Reserves
- Maximises ecosystem service provision
- Provides people with access to nature

To ensure the quality and integrity of the service we provide, the Wildlife Trusts across England have collectively established a clear set of guiding principles in the context of BNG delivery. In some areas, these principles set the bar higher than Government regulations and guidance, in line with long standing Wildlife Trust policy lines, to ensure genuinely additional and permanent gains in biodiversity to support nature's recovery that will benefit both wildlife and people well beyond the 30-year BNG period.

Habitat banking is our approach to delivering BNG. This approach allows the creation of strategically located habitats, that support large-scale habitat creation projects. This approach also enables the creation of habitats before any biodiversity loss is caused by development and creates a pipeline of biodiversity credits ready for the development sector. As well as delivering more for nature, Habitat banking also provides greater levels of security for our buyers as both the legal agreements securing delivery and habitat creation are already in place before any units are sold.

Image: Farmland in Wiltshire © Guy Edwardes/2020VISION

Thank you

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@wildishly

www.wildlifetrusts.org

Enabling Water Smart Communities

Presentation to Good Homes Alliance Conference

6th February 2024

ENABLING WATER SMART COMMUNITIES

Who's Involved?

Lead Delivery Partners

love every drop anglianwater
United Utilities Water for the North West
Thames Water
ARUP
CIWEM Chartered Institution of Water and Environmental Management
UEA University of East Anglia
MANCHESTER 1824 The University of Manchester

Funded Partners

COMMUNITY LAND TRUST NETWORK
KWR
Dm
CLES the national organisation for local economies
Future Homes Hub
Southern Water

Supporting Partners

Royal Horticultural Society
waterwise
THAKEHAM HOMES
CLARION HOUSING GROUP
Urban&Civic
TOWER HAMLETS
Suffolk County Council
CAMBRIDGE WATER COMPANY
Dŵr Cymru Welsh Water
SEVERN TRENT

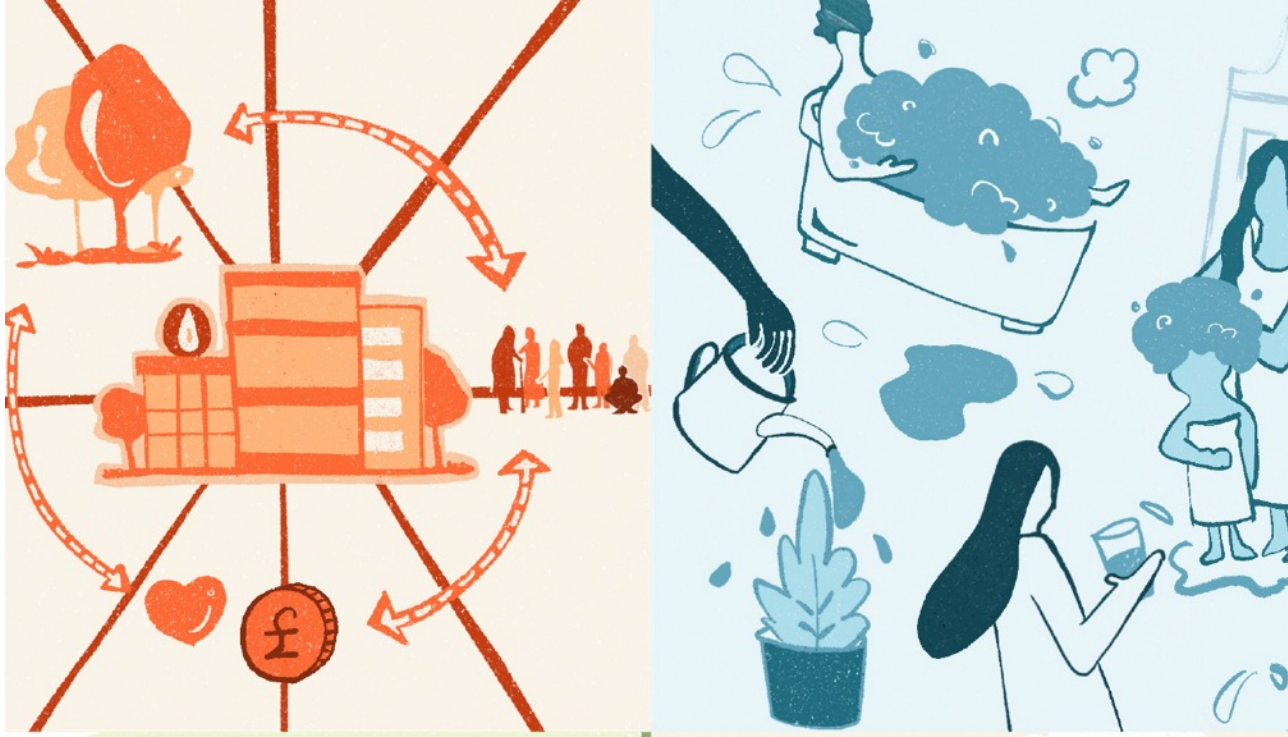
Independent Programme Board

Environment Agency
Homes England
defra
NATURAL ENGLAND
Cranfield University
Future Homes Hub
LPDF LAND PROMOTERS & DEVELOPERS FEDERATION
UKRHA
Catchment Based Approach
ARUP
CIWEM Chartered Institution of Water and Environmental Management
Taylor Wimpey
COMMUNITY LAND TRUST NETWORK

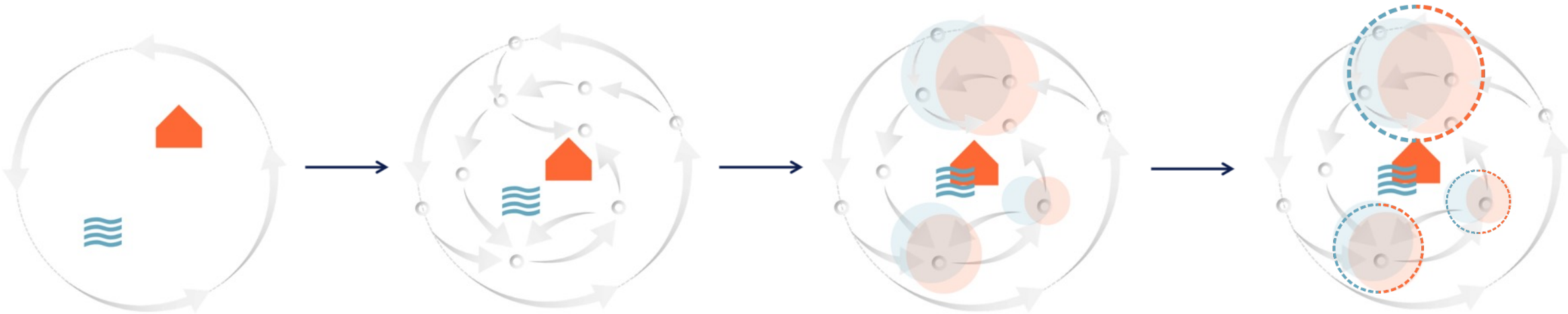
What is a water smart community?

A **WSC** is a place where water is central to the design, where people embrace the principles of water stewardship and where they are empowered by assets and systems to use water wisely and with care for the environment

Our focus is on *Enabling*...



What is bringing housing and water together?



Systemic Risk

e.g., Global warming, Pandemic, Economic Crises, Geopolitical Crises

Cascading Risk

e.g., Extreme weather pattern, growing population, urbanisation, increasing inequality

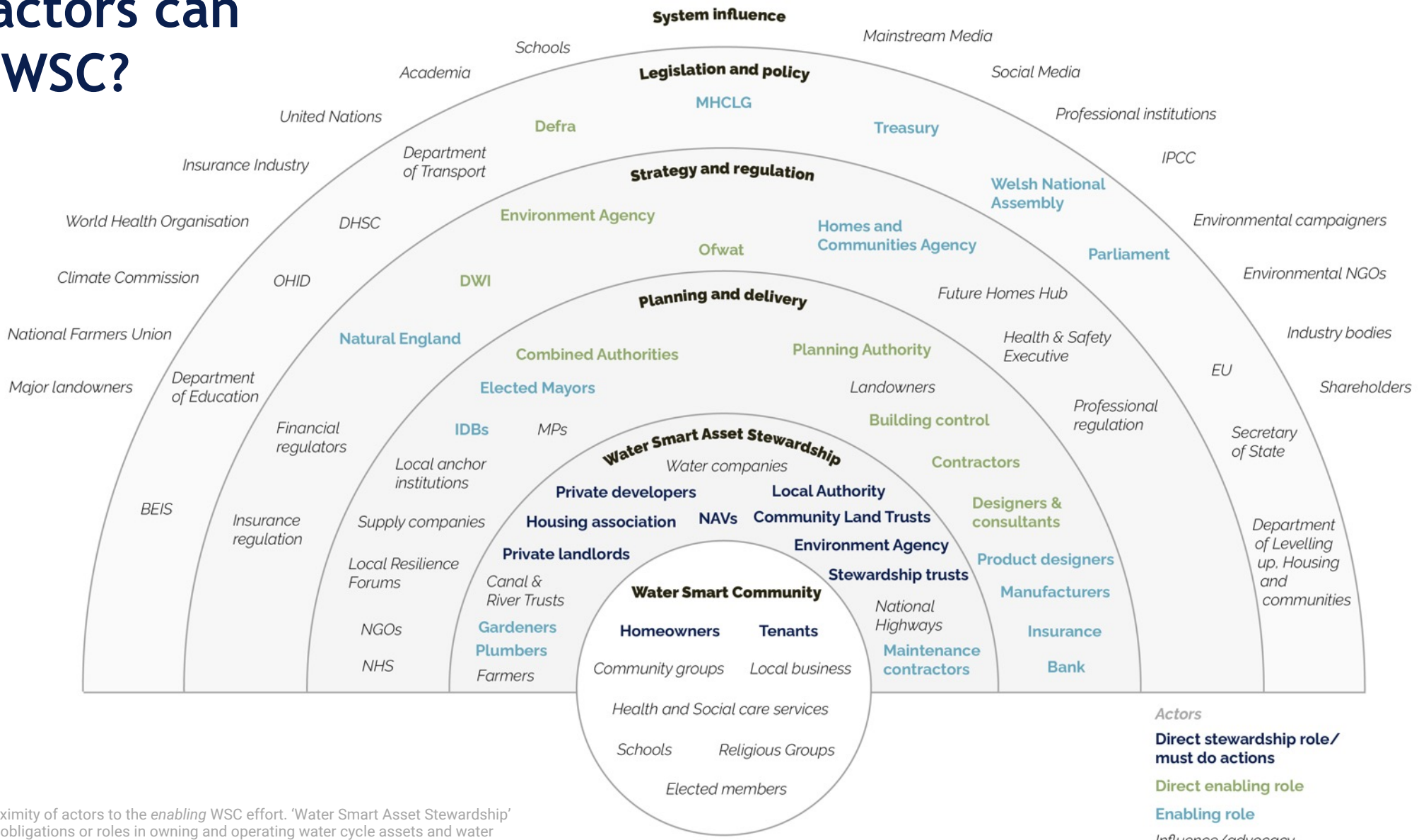
Shared Risks

e.g., Long-term stewardship of assets, flood risk and nutrient neutrality, competing demands for land

Opportunities

Areas of collaborative action and investment where innovation unlocks new value for all stakeholders.

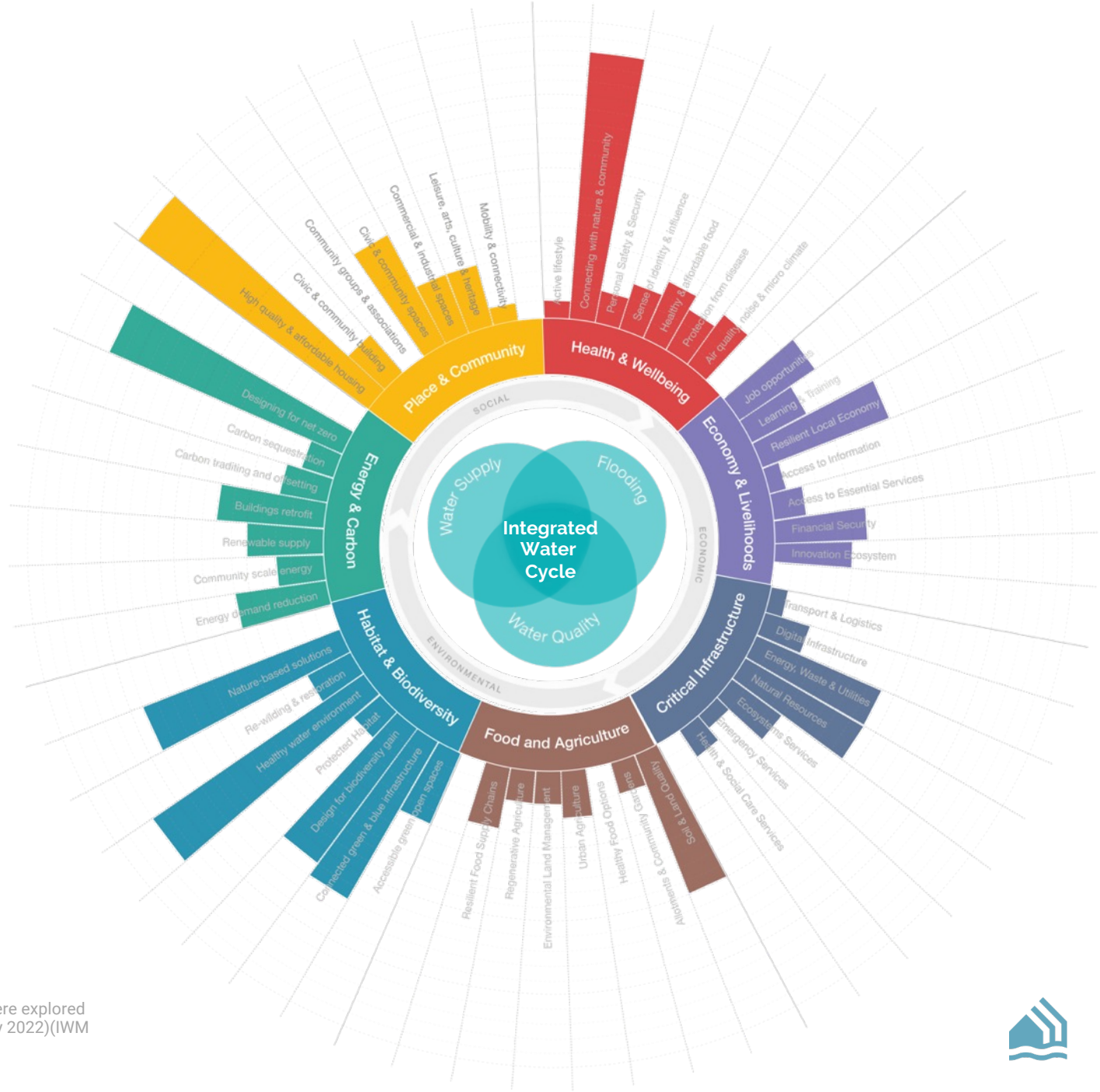
Which actors can enable WSC?



Above: initial mapping of the proximity of actors to the *enabling* WSC effort. 'Water Smart Asset Stewardship' refers to actors who have direct obligations or roles in owning and operating water cycle assets and water services connected to EWSC. [Working diagram – snapshot of work in progress December 2023]

What wider outcomes can EWSC unlock?

By addressing the core objectives of integrated water management and the shared challenges facing water and housing, WSCs can support positive outcomes across multiple different systems.



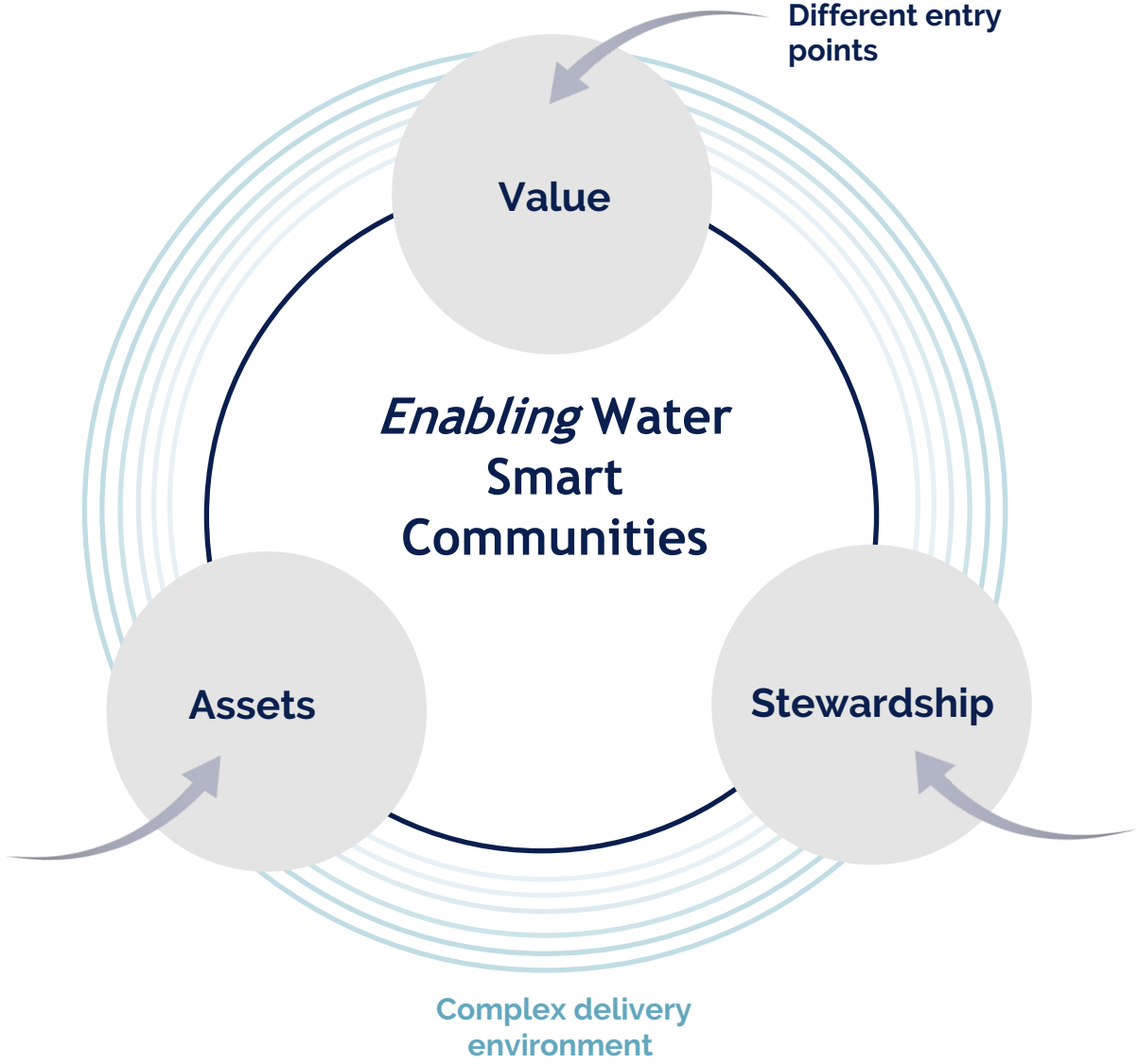
The wider social, economic and environmental outcomes that might be delivered by enabling WSCs were explored and prioritised during a collaborative workshop at the at the Kick Off Meeting with 50 participants (July 2022)(IWM model and outcomes framework based on Design with Water, Arup 2012, 2022)

Our Vision

***Rethinking** whole-life water stewardship **to accelerate the** adoption of integrated water management, **supporting** communities and the environment to thrive.*

The EWSC model

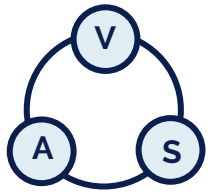
Combining three leverage points to enable action within complex delivery environment. Each of these building blocks must be addressed for a water smart community to exist and thrive.

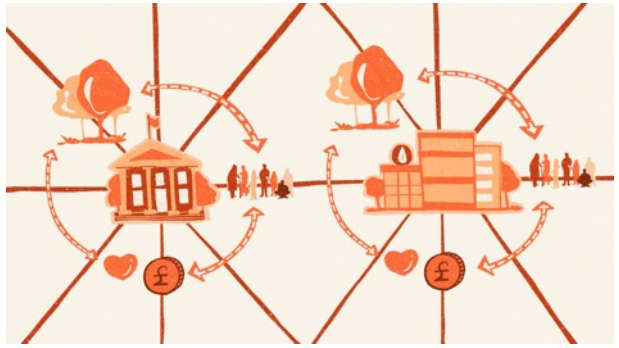


"...sometimes it starts with a piece of land, or alternatively it can start with groups searching for land..."

Nichola Morris, Community Land Trust Network

Unpacking the EWSC building blocks





Rethinking….

Towards…

Value

…place-based, outcomes-led, approaches

Assets

…integrated design and asset management

Stewardship

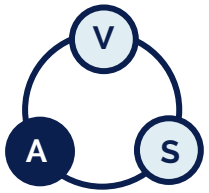
….cultures of care and resilient long-term governance

Rethinking Assets

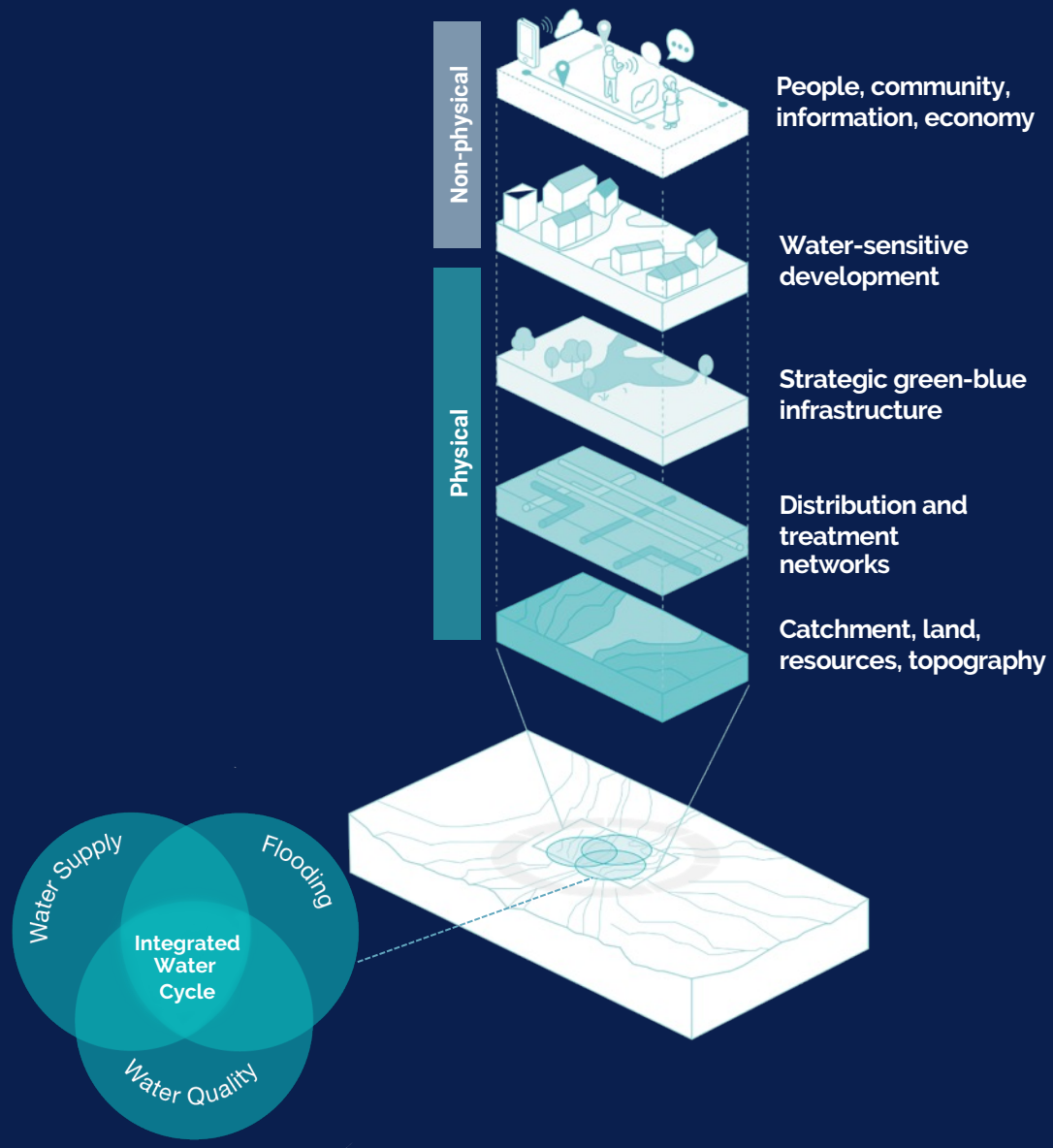
How assets are defined by different actors has a large impact on what they design and value, how they invest, and what they might own and manage.

Assets can be physical and non-physical and may exist at different scales, from a household or community to a water distribution and treatment network or wider catchment or region.

A focus on enabling integrated assets at community-scale will require new ways of working, collaborating to achieve greater integration across systems and scales.



Water Asset Systems



Based on Design with Water (Arup 2012, 2022)

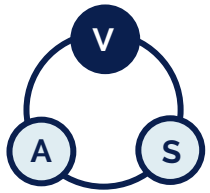
Rethinking Value

The actions of citizens and organisations are primarily driven by their core — 'must do'— obligations.

Values shape the **direction** and **priorities** for action beyond this towards voluntary — 'should-do' and 'could-do' — actions.

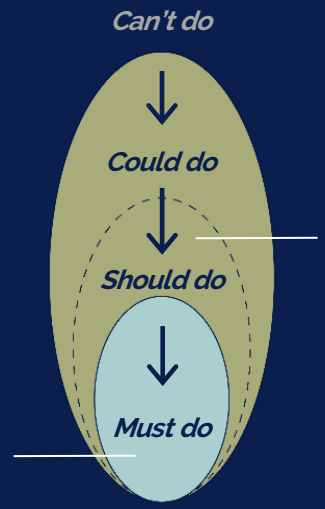
In practice a strong individual *value* case, either monetary or non-monetary, is the primary enabler for action beyond 'must do' activities.

New models of shared value creation, capture and exchange are required to enable place-based outcomes.



Individual value case

For citizens or organisations 'Must-do' actions - mandatory obligations and duties - will often be strongly linked to values, and the value created. They may also create 'wider value'. This is not a necessary condition, however, since these are not optional actions.



Where there is no mandatory obligation, actions tend to be more values driven. In practice, however, these optional actions are normally dependent on a strong individual value case, supported by holistic outcomes/value frameworks such as Six Capitals, SDGs, ESG criteria etc.

Shared value case

Establish individual role and value case

Understand core obligations, and case for investment in non-mandatory outcomes

Align around shared values and value

Identify and align actors with complimentary values and drivers for action. Build a shared value case

Shared value case and resilient governance

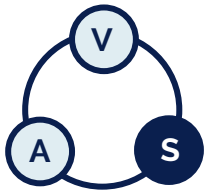
New shared value and governance models to enable and protect long-term outcomes

Rethinking Stewardship

Stewardship is essential to looking after water as a common good and unpins the enabling of water smart communities. Stewardship goes beyond management.

Three stewardship principles have emerged as critical to EWSC: a strong shared **culture**, resilient, long-term **governance**, and delivery of wider positive **outcomes**.

These EWSC stewardship principles underpin and shape the other building blocks of ***'value'*** and ***'assets'***.



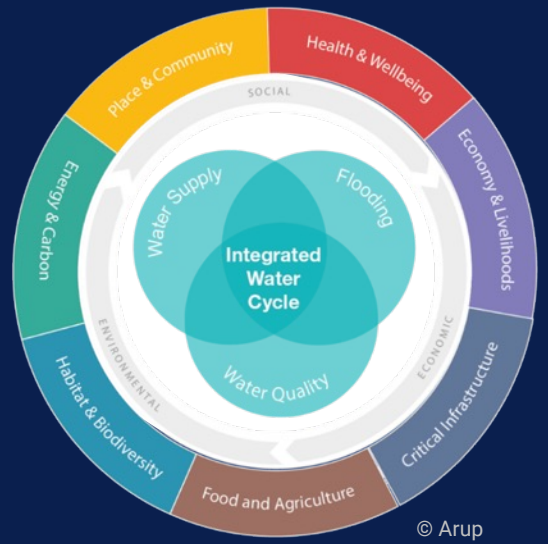
EWSC Stewardship Principles

(1)
Building **cultures** of awareness, care and respect for the water cycle and a collective sense of responsibility towards the water commons.

(2)
Governance of resources and assets that restore, protect and enhance the water environment and underpin public health, safety and resilience.

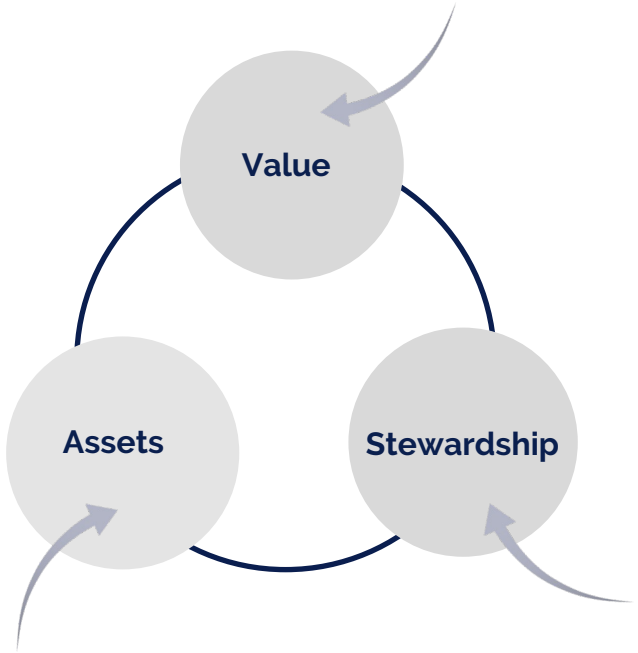
(3)
Delivering wider positive socio-cultural, economic and environmental **outcomes** *through* long-term stewardship of water cycle assets.

"Stewardship is holding something in trust for another generation. A good steward leaves it in a better condition than they found it"



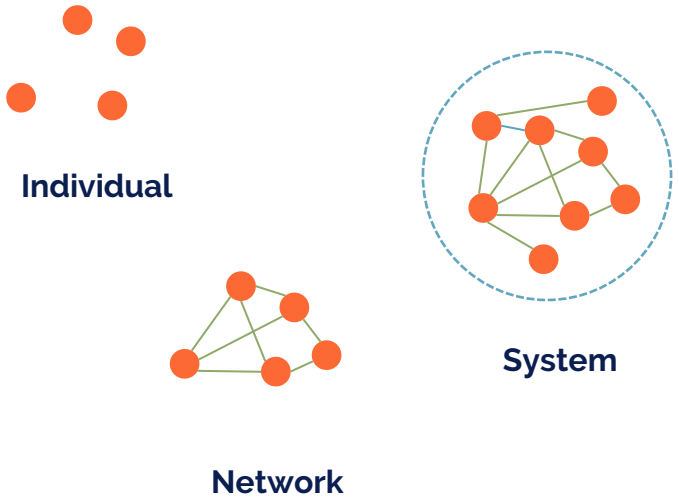
Scales of action and impact

By combining the building blocks of our EWSC model within the different levels of system complexity, we have developed a framework for enabling water smart communities.



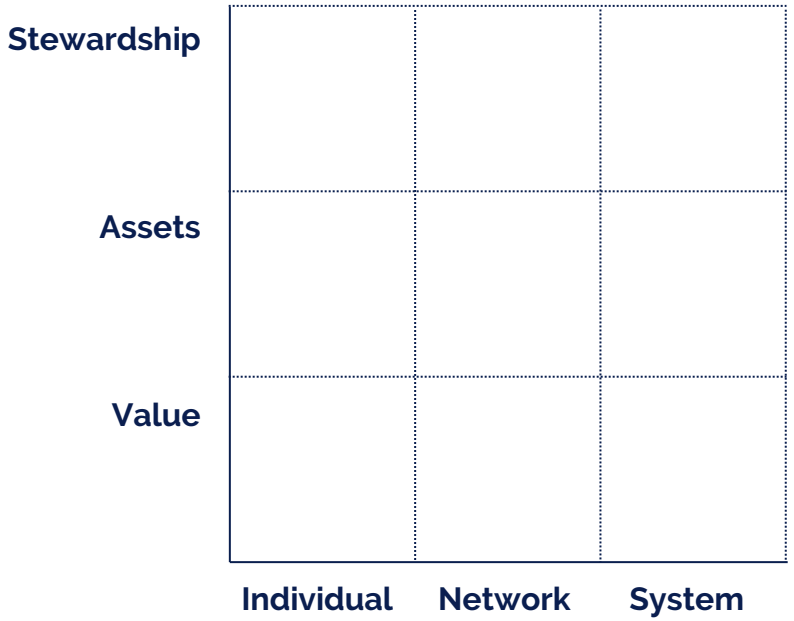
EWSC Model
The building blocks of EWSC

+



System Complexity
Levels of integration between individual actions and whole system

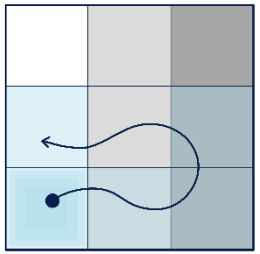
=



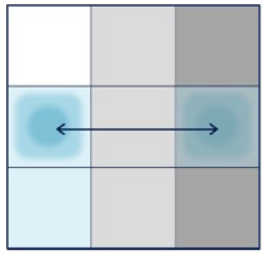
EWSC Framework
Forming action areas

The EWSC framework

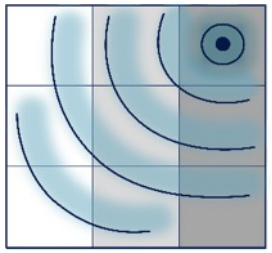
Facilitating a transition towards EWSC. Progress can happen at different points across the system and action can take many forms:



Pathways



Linked Actions



Ripple Effects

EWSC MODEL
Essential building blocks for an WSC

	Individual	Network	System
Stewardship	Whole life-cycle roles Aligning each actor's stewardship roles and obligations with values, capacity and capability. Cultivating cultures of care and respect for water as a common good.	Collective stewardship models Multiple actors aligning to form new entities with new forms of agreement for sharing ownership/ management linked to shared risks and value	System-level agreements Embedding concepts of intergenerational stewardship. Enabling stewardship through norms, cultures, funding, finance, and changes to policy/ legislation/ regulation.
Assets	Singular asset / site Actions towards delivery of water smart assets that can be shaped directly through the site or community scale development.	Multiple/ networked assets Considering dependency with asset networks within and beyond the site. Considering partnership action to increase integration across water smart systems	Whole system Regional/national actions: the role of regulation, governance, design standards, and asset management approaches to support water smart innovation
Value	Individual actors Considering core duties (must do, should do, could do, can't do etc) personal or organisational value case made, and value captured.	Aligning a network of actors Values shared between individuals/ organisations. Wider benefits beyond core duties captured. Organisations align around shared values.	Enabling the shared value case Systems and processes for capturing, pooling and distributing shared outcomes and value arising from individual or collective action across multiple systems

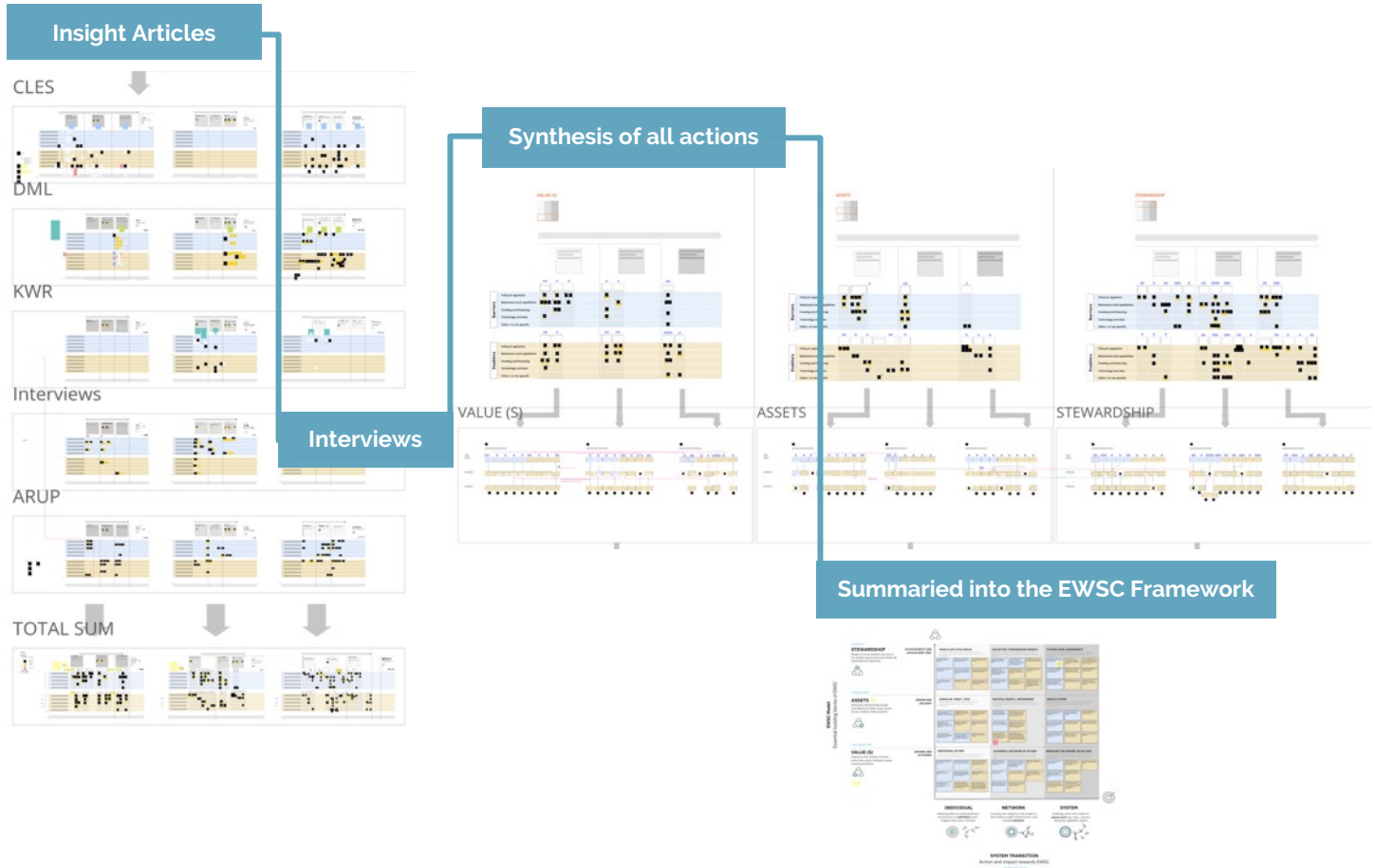
SYSTEM COMPLEXITY
Level of integration between individual actions and wider systems

Developing the Enabling Actions

The research and engagement undertaken throughout the Discovery workstream were synthesised into a long-list of enabling actions.

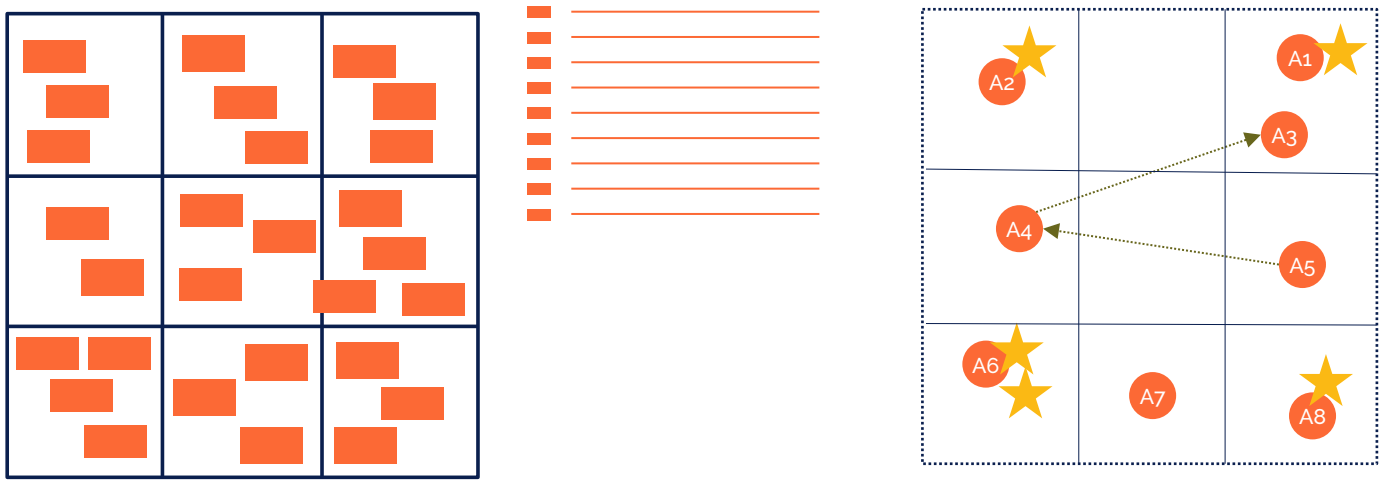
65 Enabling Actions

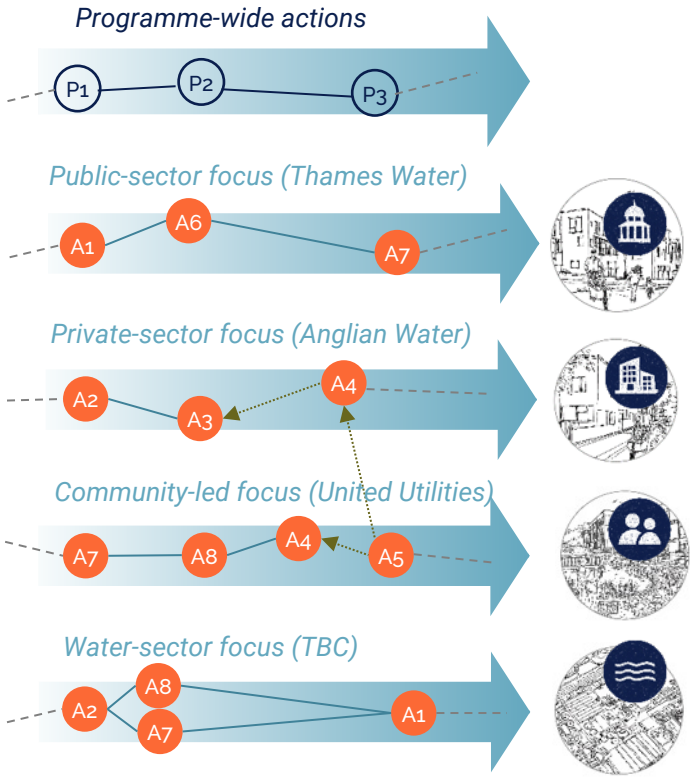
Insight was codified across the 9 areas of action across the framework, synthesising them into a set of actions within each. These were refined by the project team working group, joining similar enabling actions together and adding missing ones.



Next steps - identifying and prioritising enabling actions

The next phase of the project will develop test, transition pathways that enable these to happen more widely. Actions are assembled into project action areas.





Enabling actions long list → **Actions prioritisation** → ***Enabling action projects***

Initial Enabling Actions Projects

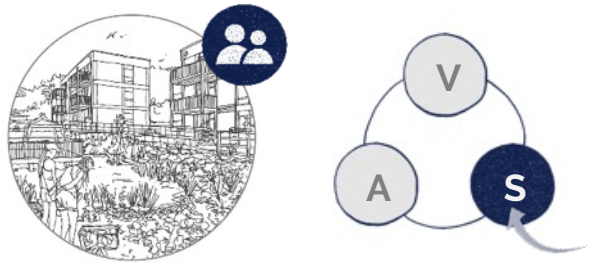
Water for people and places

Identify and understand the tools and assets already at our disposal to define how water companies, local planning authorities and developers can unlock and share the value of water smart communities.

On-site water reuse

Creating clear guidance on how and where community-scale systems for water reuse can be delivered.

- Roadmap
- Regulations
- Business case



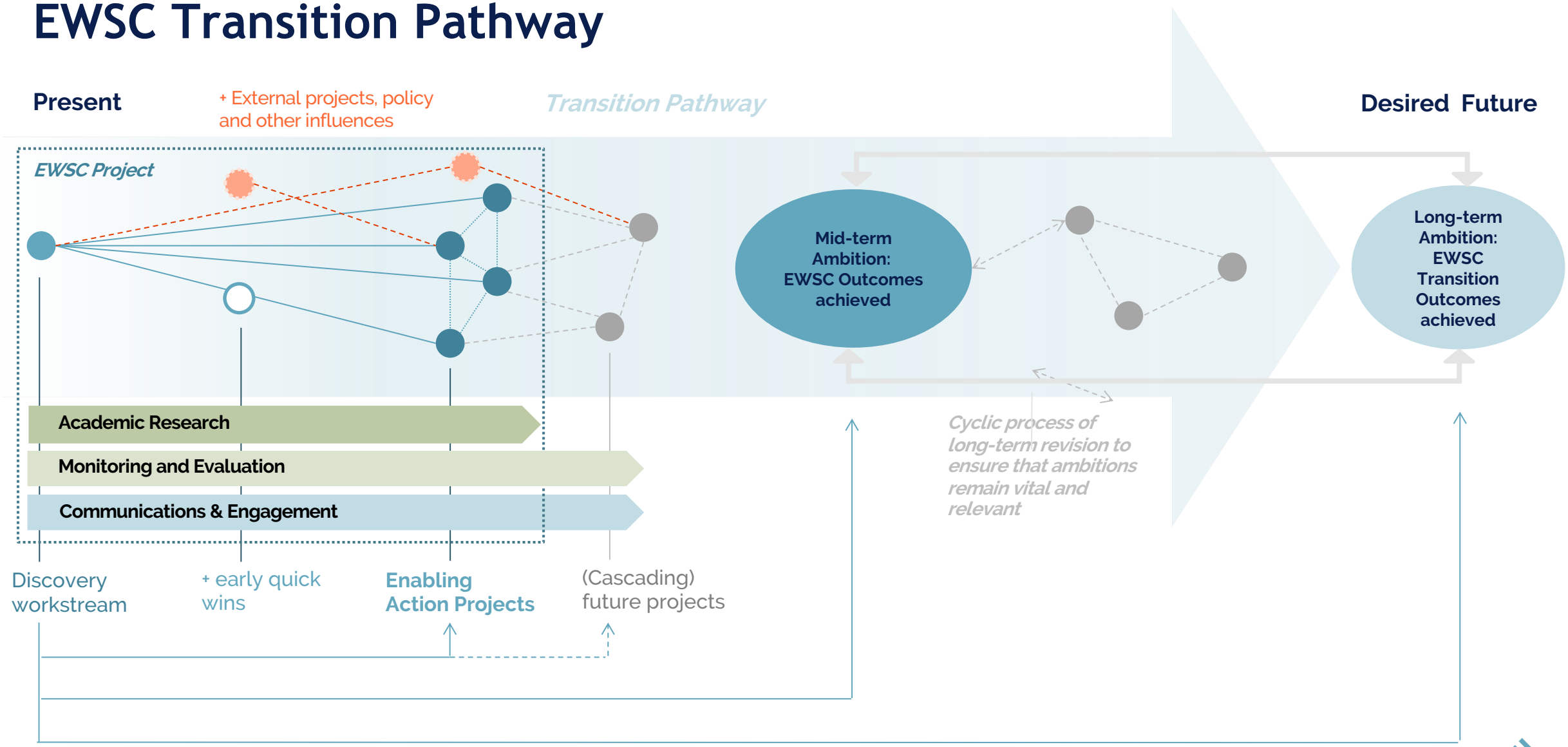
Community led stewardship model for WSC

Develop and test a community led stewardship model that empowers communities to incorporate, operate and maintain water-smart assets that meet the principles of Integrated Water Management (IWM).

- Understanding and assessing existing stewardship models.
- Co-designing a new community led stewardship model.
- Identifying a suitable residential development site to demonstrate the model.
- Producing a replicable model that can be applied to all development types

Note: above proposals are snapshots of workstreams currently in development.

EWSC Transition Pathway



For news, events or to get in volved, please get in touch:

ewsc@anglianwater.co.uk

@WaterSmart_EWSC

www.linkedin.com/company/enabling-water-smart-communities/

ewsc.org.uk

Refreshment break,
exhibition and networking

16:15-16:40

Session 3: Collective action and leading edge thinking to accelerate change

Facilitated by Jon Bootland, Director,
Sustainable Development Foundation

Good Homes Alliance

GHA 2024 Conference

06/02/2024, London

About this session

1. **Format:**
   - 5 minute ‘pitch’ presentations.
   - 30-minute panel discussion and Q&A.

2. **Focus on aspirational policy asks:**
   - What should the policy ask be?
   - How could it be delivered in practice?
   - What impact would it achieve?

3. **Aims:**
   - To inform a ‘New manifesto for housing’.
   - Engage with political parties.
   - Shape future GHA activities

GHA Themes

- **Alternative Housing Models and Innovative Finance**
- **Healthy Homes and Places**
- **Net Zero and Energy Solutions**
- **Quality and In-Use Performance**
- **Urban Design, Planning, Placemaking & Biodiversity**

Our Manifesto Pledges

- Homes that **minimise operational energy and water demand**, and **perform in use** as intended
- Homes and places that **maximise on-site renewable energy** and **utilise energy management/storage solutions** to meet demand (using solutions such as smart grids)
- Homes that **minimise whole life carbon** through their product selection, construction processes, in-use operation and disposal or **reuse** of building materials at **end of life**
- **Healthy, adaptive homes** with excellent **indoor air quality** (ventilation, non-toxic materials), **comfort** (overheating/shading control) and sufficient **space** (space standards)
- **Attractive homes and places** with robust **materials** and detailing for low and easy **maintenance** and which will stand the test of time
- Homes and places that **maximise biodiversity** and ecological improvements
- Homes and places that are **resilient** to a rapidly changing climate and extreme weather events including minimising overheating and flood risk
- Homes that provide growing and leisure opportunities including occupants' access to private amenity space and shared **green/open space**

Our Expert Speakers

- **Net Zero** – Julie Godefroy, Head of Net Zero Policy, CIBSE / Technical Steering Group member, UK Net Zero Carbon Buildings Standard
- **Healthy Homes** – Rosalie Callway, Projects and Policy Manager, TCPA
- **Community-led Housing** - Tom Chance, Chief Executive, Community Land Trust Network
- **Embodied Carbon** - Seb Laan Lomas, Associate and Passivhaus Designer, Architype/ Coordinator, Architects Climate Action Network (ACAN)
- **Building Performance** - George Martin, Chair, Building Performance Network
- **Circular Economy** - Katherine Adams, Technical Director, The Alliance for Sustainable Building Products (ASBP)

Net Zero

Julie Godefroy

Head of Net Zero Policy, CIBSE / Technical Steering Group member, UK Net Zero Carbon Buildings Standard

Near the tipping point...

How industry must act NOW to help avert climate disaster

Good Homes Alliance

BUILD NET ZERO NOW Annual Conference

CIBSE

Collective action and leading edge thinking to accelerate change
UK Net Zero Carbon Buildings Standard

Julie Godefroy
Head of Net Zero Policy, CIBSE

Before I start…

My views, not speaking on behalf of the NZBCS

Policy as a stepping stone to the UK NZCBS

BBP BETTER BUILDINGS PARTNERSHIP
bre
CARBON TRUST
CIBSE
The Institution of StructuralEngineers
LETI
RIBA Architecture.com
RICS
UK GBC
PIA
RIAS
ice

NZBCS:
Whole life carbon

Setting targets or limits for operational energy and embodied carbon, and other related metrics

Current policy

Partial
(= regulated)
operational carbon

No regulation
of
embodied carbon

NZCBS:
Based on outcomes

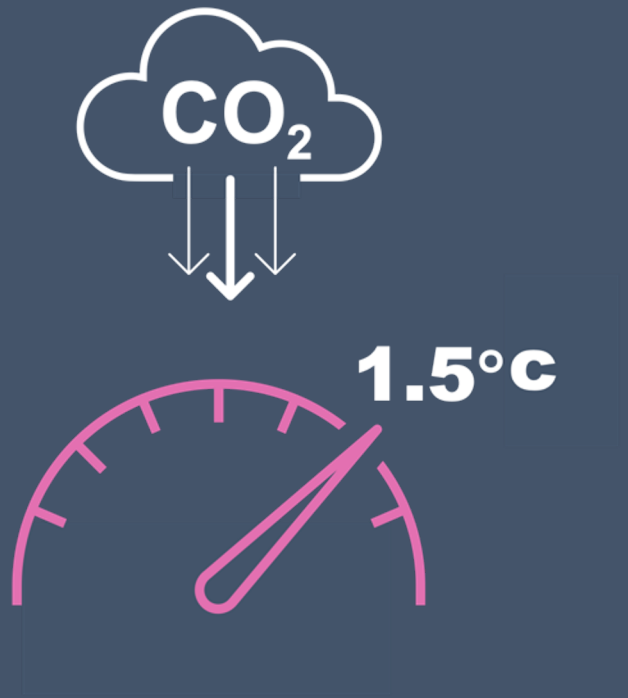
Current policy:
Mostly normalised calculations

?

Non-domestic
Public: DECs, but little impact
Commercial: DEC-ish proposed, but no progress

Domestic
Proposals, but partial and voluntary

NZCBS: Science-based Top Down & Bottom Up



Aligned with the UK's remaining carbon budget and other actions needed by the UK built environment to deliver decarbonisation in line with a 1.5°C pathway

Current policy

Changing targets (notional building)

Viability?

Cost per carbon saved?

Other ?

Policy as a stepping stone to the UK NZCBS: Regulations as backstop, not the end goal

- ❑ Local Authorities able to set policies relying on the NZCBS
- ❑ Building Regulations accounting for all energy uses, with reporting in use
- ❑ Building Regulations addressing embodied carbon (Part Z)
- ❑ Operational ratings aligned with NZCBS e.g. NZCBS = top rating
- ❑ Alignment of policies, funding, tax incentives etc

Thank you!

Julie Godefroy
jgodefroy@cibse.org

Near the tipping point...

Good Homes Alliance

How industry must act NOW to help avert climate disaster

Healthy Homes

Rosalie Callway

Projects and Policy Manager, TCPA

Campaign for Healthy Homes

Good Homes Alliance

6th February 2024

Housing and health context

- **Over one in ten people live in homes that are not ‘decent’**
- **Those living in poor-quality housing are twice as likely to have poor health**
- **Poor housing costs the NHS <u>at least</u> £2bn a year to treat preventable illnesses –** respiratory and cardiovascular diseases, mental health, and mortality.
- **Overheating standards don’t apply to homes under PDR or ‘material change of use’** - Over half UK homes (15.7 million) fail the bedroom overheating criterion (ARUP)

These are homes

Why we need change!

- Planning and development of new homes is increasingly complex, fragmented, deregulated and poorly enforced
- Planning still **lacks a legally defined intention to support people's health and wellbeing**
- There are no legally enforceable minimum standards on key aspects of new homes, particularly in relation to their location

Healthy Homes Principles

Fire safety

All new homes must be safe in relation to the risk of fire

Liveable space

All new homes must have, as a minimum, the liveable space required to meet the needs of people over their whole lifetime, including adequate internal and external storage space

Access to natural light

All new homes must have access to natural light in all main living areas and bedrooms

Inclusive, accessible and adaptable

All new homes and their surroundings must be designed to be inclusive, accessible, and adaptable to suit the needs of all

Access to amenities and transport

All new homes should be built within places that prioritise and provide access to sustainable transport and walkable services, including green infrastructure and play space

Climate resilient

All new homes must demonstrate how they will be resilient to a changing climate over their full life time

Reductions in carbon emissions

All new homes must secure radical reductions in carbon emissions in line with the provisions of the Climate Change Act 2008

Safety from crime

All new homes must be built to design out crime and be secure

Limit light and noise pollution

All new homes must be free from unacceptable and intrusive noise and light pollution

Thermal comfort

All new homes must be designed to provide year-round thermal comfort for inhabitants

Prevent air pollution

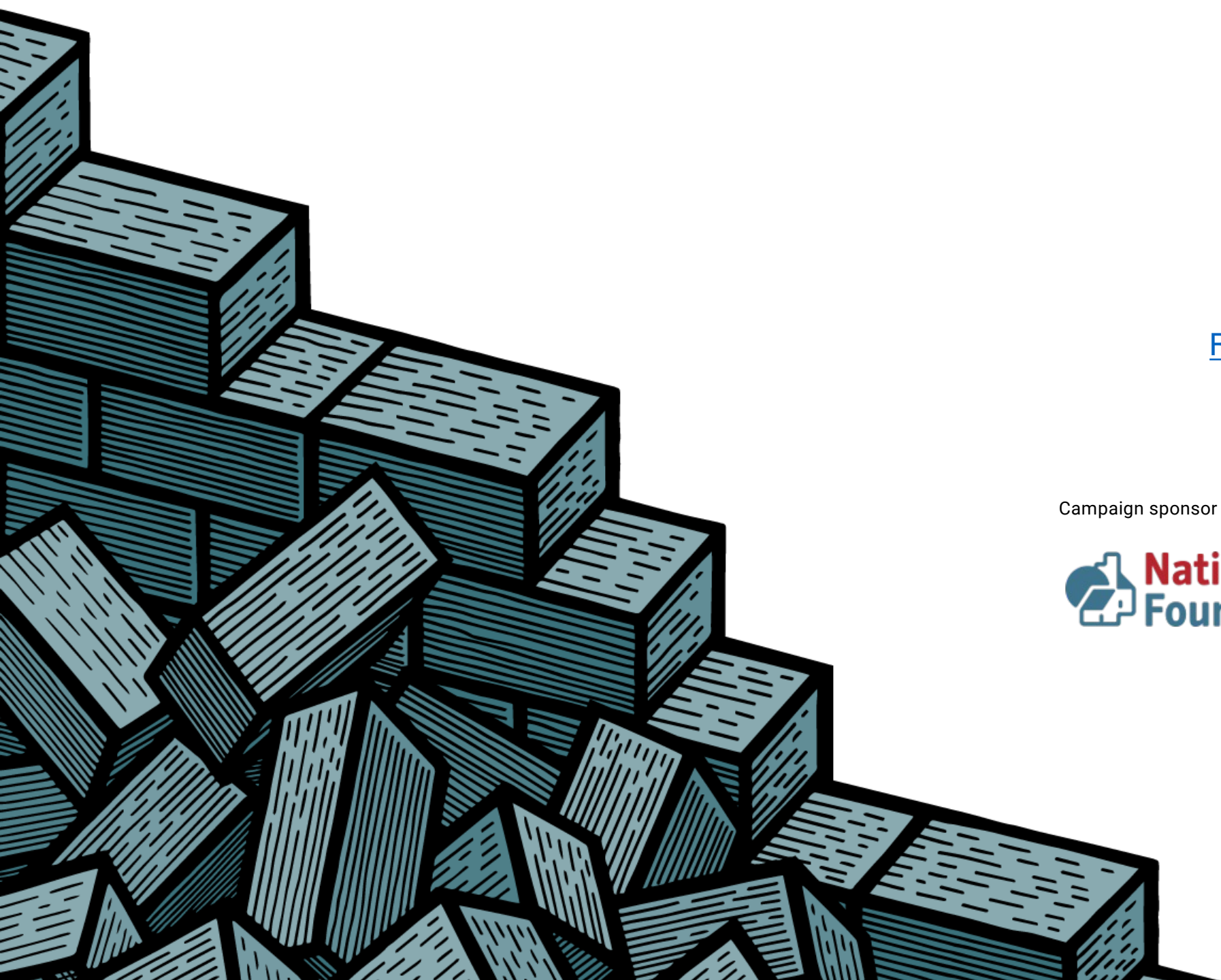
All new homes must minimise and not contribute to unsafe or illegal levels of indoor or ambient air pollution

To find out more about the Campaign for Healthy Homes please visit:
www.tcpa.org.uk/collection/campaign-for-healthy-homes/

Creating a clear national housing strategy

- A vision and blueprint for a new generation of healthy new towns and communities
- Joining-up housing quality and quantity to promote both human and planetary health

Image:
Ebbsfleet Development Corporation



Thank you!

For more information:

Hugh.Ellis: TCPA.org.uk

Rosalie.Callway@TCPA.org.uk

Sally.Roscoe@TCPA.org.uk

Campaign sponsor

Nationwide Foundation

Community-led Housing

Tom Chance

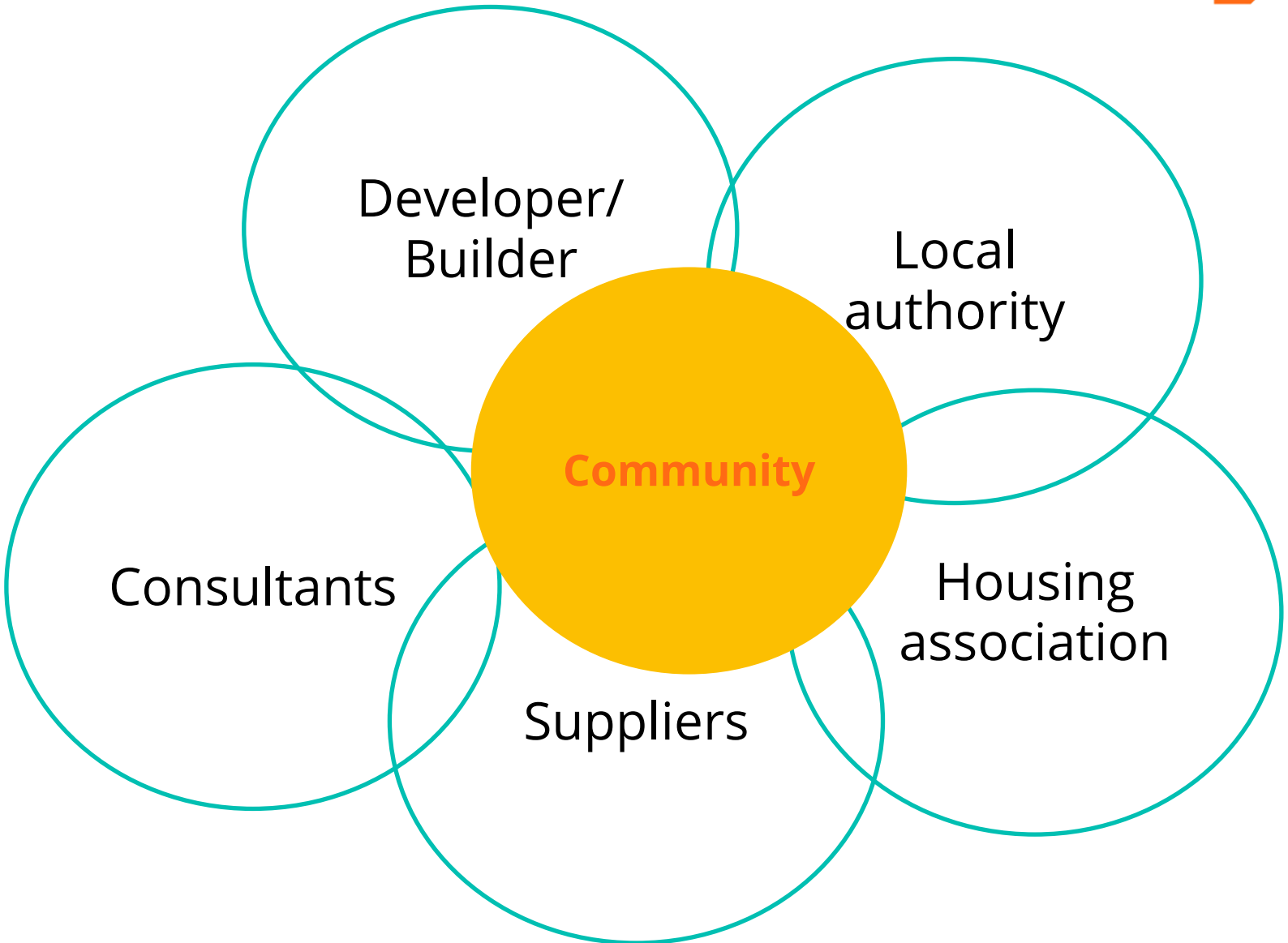
Chief Executive, Community Land Trust Network

COMMUNITY LAND TRUST NETWORK

Community-led action to accelerate change

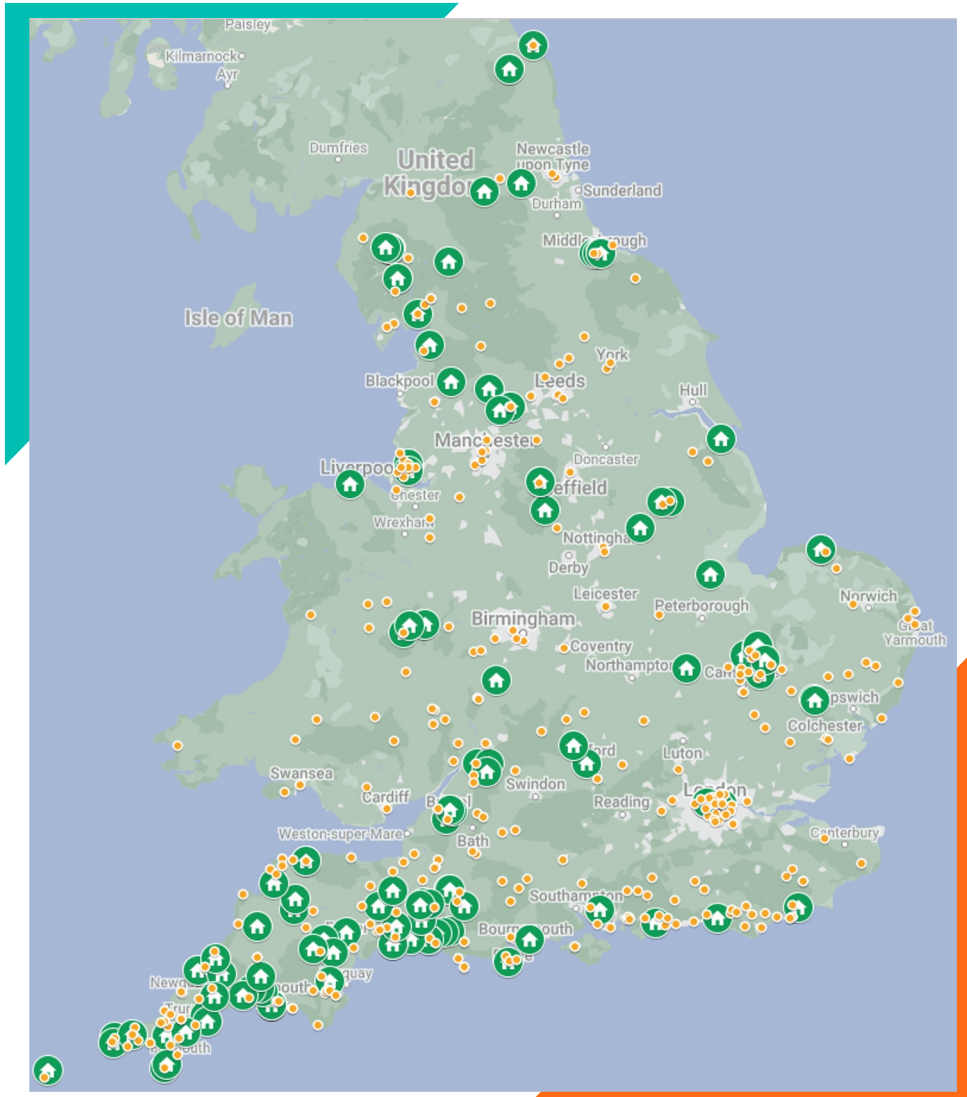
Tom Chance, Chief Executive
Community Land Trust Network

COMMUNITY AGENCY MATTERS



VISION -> COLLECTIVE ACTION
IN PRACTICE

COMMUNITY LAND TRUST NETWORK



VISION -> COLLECTIVE ACTION
IN PRACTICE

COMMUNITY LAND TRUST NETWORK

VISION -> COLLECTIVE ACTION
IN PRACTICE

VISION -> COLLECTIVE ACTION
IN PRACTICE

COMMUNITY LAND TRUST NETWORK

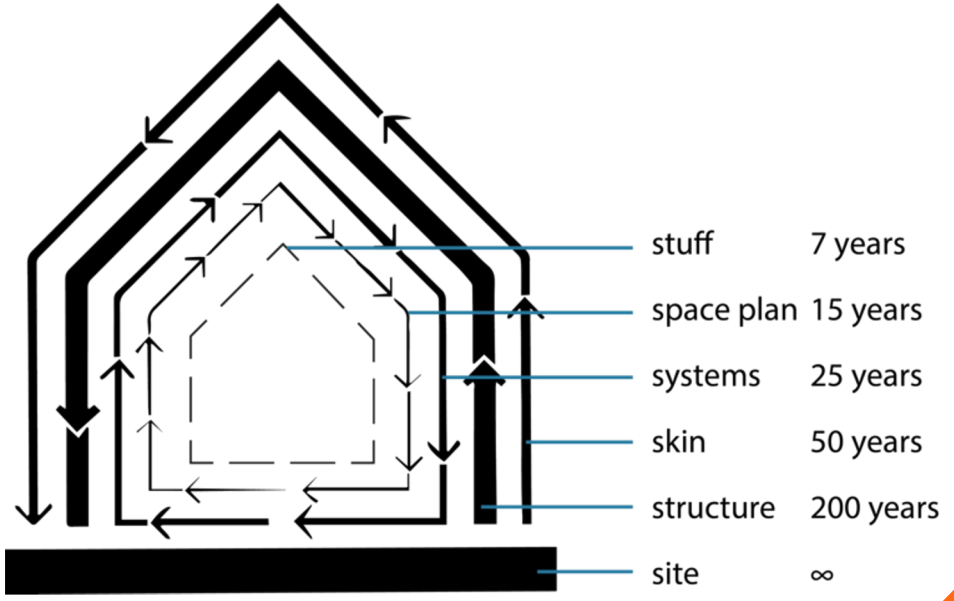
VISION -> COLLECTIVE ACTION
IN PRACTICE

COMMUNITY LAND TRUST NETWORK

ROLE IN TACKLING CLIMATE EMERGENCY

COMMUNITY LAND TRUST NETWORK

If (inputs)	→ Then (outputs)	→ Meaning (outcomes)
Communities shape or control asset development	Greater priority is given to housing affordability	Better access to genuinely affordable housing
Communities own & steward the land and other assets	Greater priority is given to environmental considerations and sustainable lifestyles	Less greenhouse gas emissions, resource extraction, impact on local ecology
Communities have the capacity and expertise to be active agents	Local people become active agents in local change and in community activity	More social cohesion, reduced loneliness and better physical and mental health
	More emphasis is given to local views and insights	Opposition to new development is reduced



AN AMBITIOUS POLICY
THE TARGET

- 5% of housing supply should be community-led development

AN AMBITIOUS POLICY
THE STRATEGY

- Growth Lab to develop new ‘products’ and enabling services
- Growth Fund to de-risk and reduce cost of finance
- Changes to NPPF, AHP, regulations to incentivise partnership with communities
- Industry giving this a go - speak to us!

Embodied Carbon

Seb Laan Lomas

Associate and Passivhaus Designer, Architype/ Coordinator, Architects Climate Action Network (ACAN)

“Why Embodied Carbon?”

Because it is 11% of global emissions

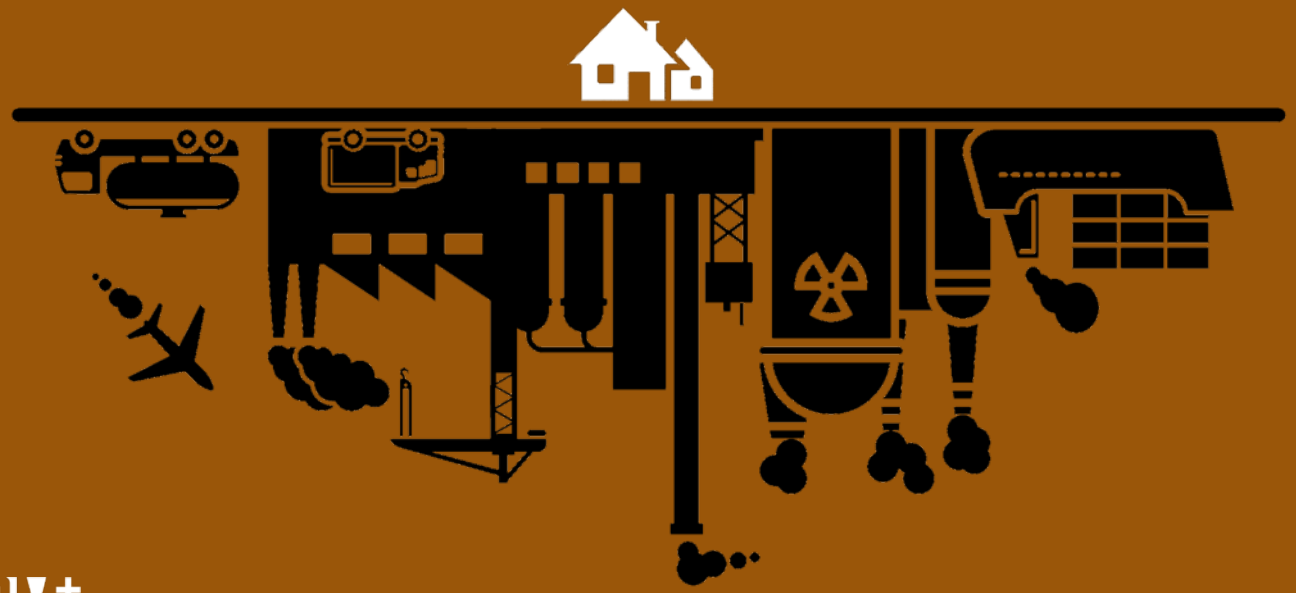
ACAN Carbon Footprint of Construction 2021

ARCHITYPE/PERFORM+

ARCHITECTS! CLIMATE ACTION NETWORK

“Is the construction industry ready?”

Yes! It has the tools, the skills, and the ambition!



ARCHITYPE/PERFORM+

ARCHITECTS! CLIMATE ACTION NETWORK

“How would we set targets for it?”

2026: Whole Life Carbon reporting
2028: Upfront Carbon limits

ARCHITYPE/PERFORM+

ARCHITECTS! CLIMATE ACTION NETWORK

“What other benefits would it bring the UK?

It will empower our Just Transition to a bio-based, circular, and #RetrofitFirst industry

ARCHITYPE/PERFORM+

ARCHITECTS! CLIMATE ACTION NETWORK

“What does Government need to do?”

Follow Netherlands, France, Sweden, Norway, Finland, Denmark, USA, and Canada, and regulate embodied carbon!

ARCHITYPE/PERFORM+

Building Performance In-use

George Martin

Chair, Building Performance Network

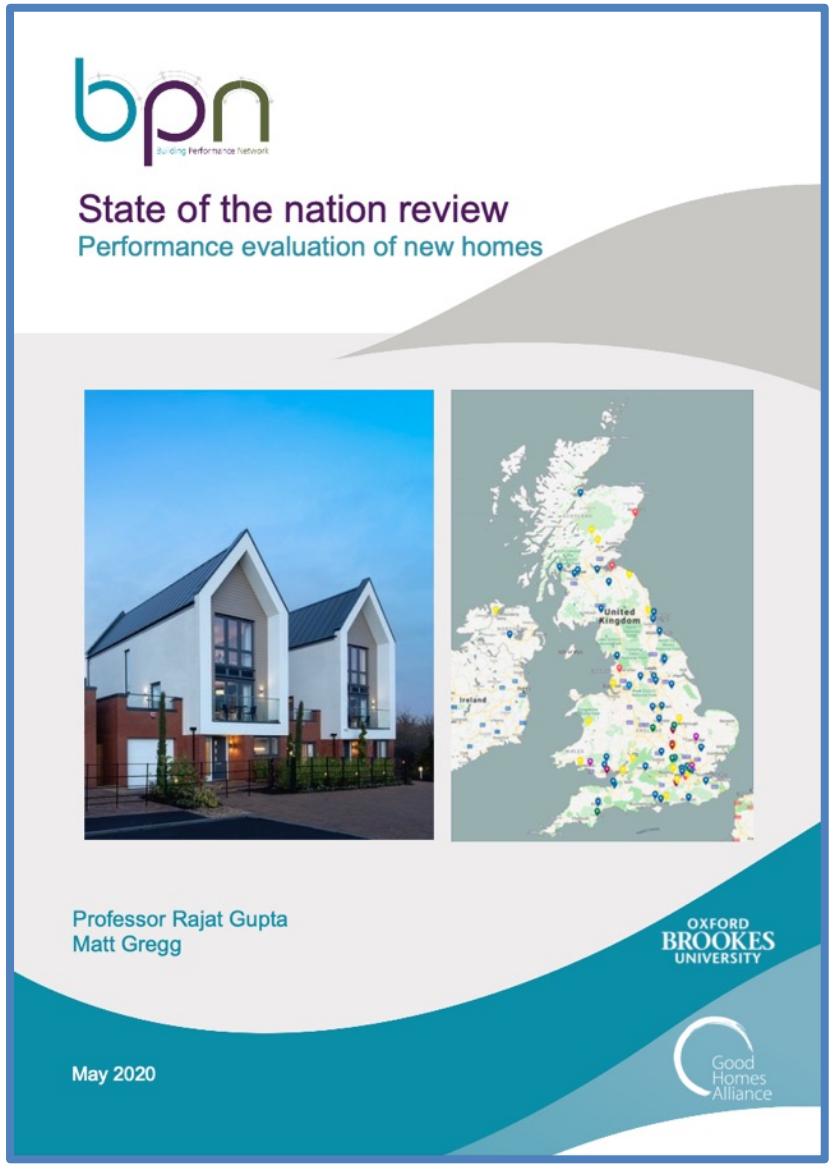
Building Performance in use.

George Martin

Chair building Performance Network

6th February 2024

State of the Nation Review



This State of the Nation study provides an accessible review of key studies on new-build housing performance and the building performance evaluation methods adopted.

Reducing the performance gap will provide lower bills and lower carbon emissions thus helping with both the cost of living crisis and the climate emergency.

The BPE British Standard

British Standard BS40101:2022

Funding from the UKRI Transforming Construction Challenge

- Chair: Dr Kerry Mashford OBE - Interfacing Ltd.
- Dr Zachary Gill - SOAP Retrofit Ltd.
- Prof Fionn Stevenson – BPN & formerly University of Sheffield

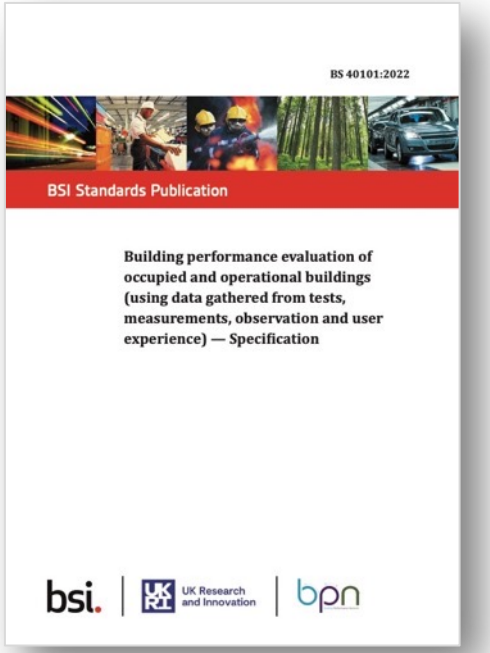
UK Research and Innovation

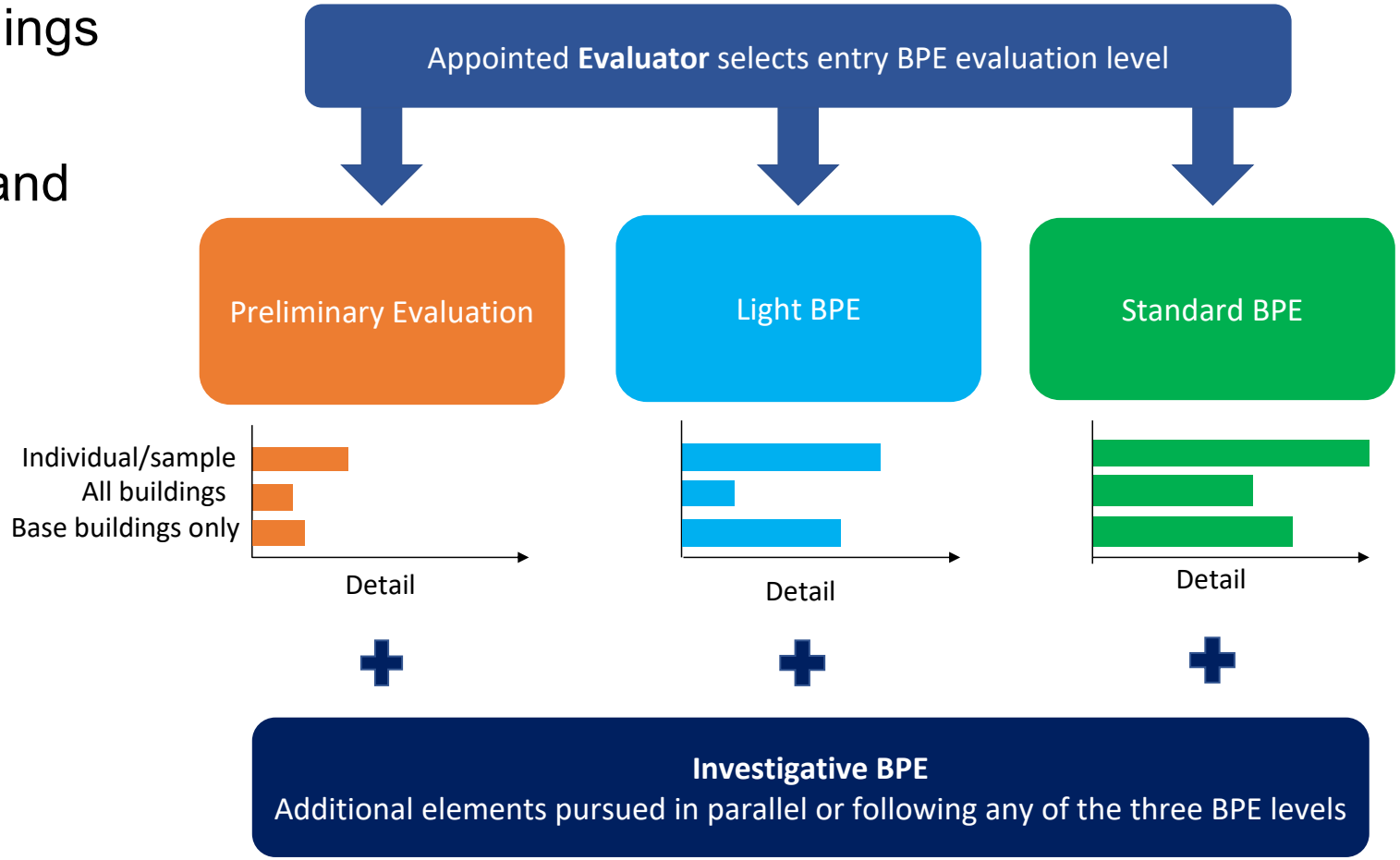
bsi.

The first British Standard for BPE

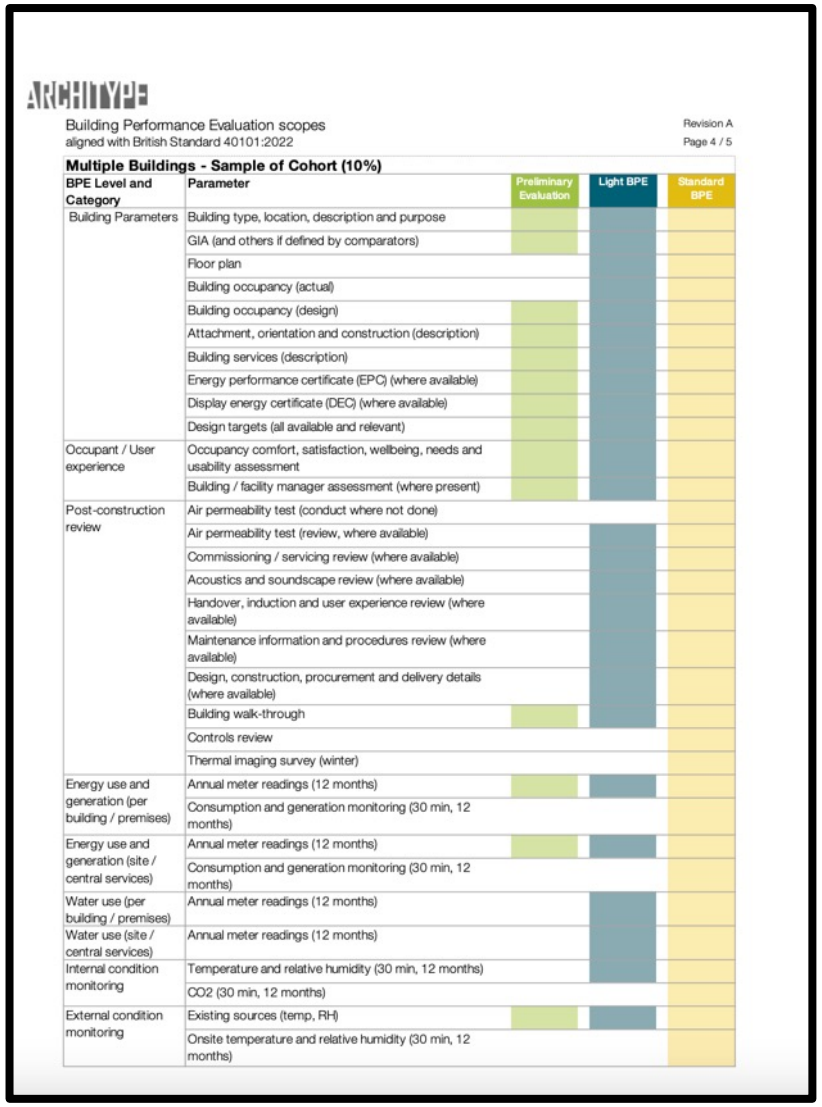
British Standard BS40101:2022

- Domestic and non-domestic buildings
- Focus on BPE in practice
- Beyond measurement, to action and communication





BS 40101



ARCHITYPE

Building Performance Evaluation scopes
aligned with British Standard 40101:2022

Revision A
Page 4 / 5

Multiple Buildings - Sample of Cohort (10%)

BPE Level and Category	Parameter	Preliminary Evaluation	Light BPE	Standard BPE
Building Parameters	Building type, location, description and purpose			
	GIA (and others if defined by comparators)			
	Floor plan			
	Building occupancy (actual)			
	Building occupancy (design)			
	Attachment, orientation and construction (description)			
	Building services (description)			
	Energy performance certificate (EPC) (where available)			
	Display energy certificate (DEC) (where available)			
	Design targets (all available and relevant)			
Occupant / User experience	Occupancy comfort, satisfaction, wellbeing, needs and usability assessment			
	Building / facility manager assessment (where present)			
Post-construction review	Air permeability test (conduct where not done)			
	Air permeability test (review, where available)			
	Commissioning / servicing review (where available)			
	Acoustics and soundscape review (where available)			
	Handover, induction and user experience review (where available)			
	Maintenance information and procedures review (where available)			
	Design, construction, procurement and delivery details (where available)			
	Building walk-through			
	Controls review			
	Thermal imaging survey (winter)			
Energy use and generation (per building / premises)	Annual meter readings (12 months)			
	Consumption and generation monitoring (30 min, 12 months)			
Energy use and generation (site / central services)	Annual meter readings (12 months)			
	Consumption and generation monitoring (30 min, 12 months)			
Water use (per building / premises)	Annual meter readings (12 months)			
Water use (site / central services)	Annual meter readings (12 months)			
Internal condition monitoring	Temperature and relative humidity (30 min, 12 months)			
	CO2 (30 min, 12 months)			
External condition monitoring	Existing sources (temp, RH)			
	Onsite temperature and relative humidity (30 min, 12 months)			

Architype have developed this attractive form to highlight the parameters required for a housing development for a sample cohort of 10% of units.

We are going to look this year at graphically re-imagining BS40101 to make it more approachable to users

Energy House 2.0 University of Salford

Figure 2. Energy House 2.0 external

ENERGY HOUSE 2.0

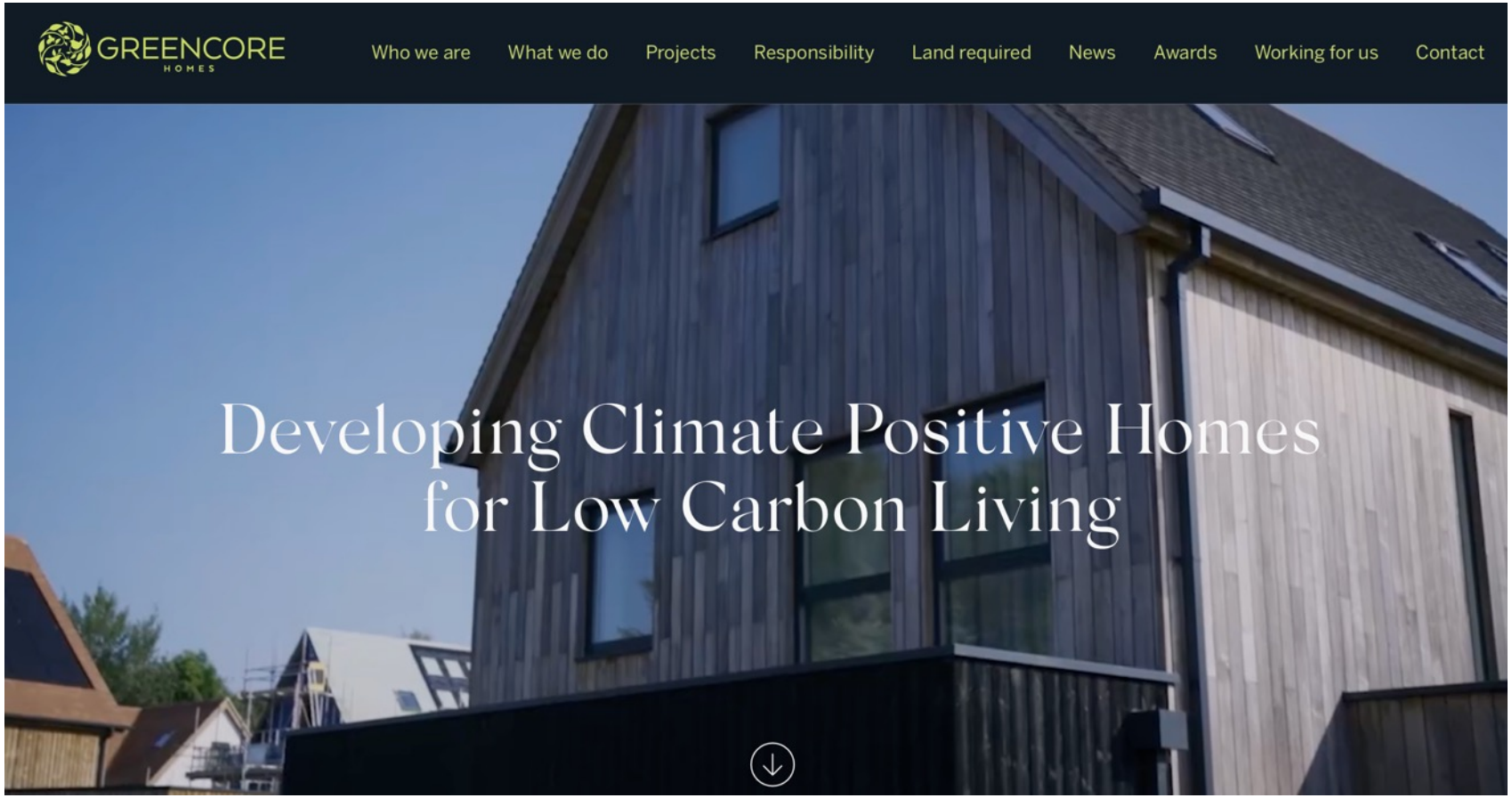
University of Salford MANCHESTER

UK Research and Innovation

BARRATT DEVELOPMENTS PLC

Bellway

Few developers use ‘low carbon’ in marketing literature!

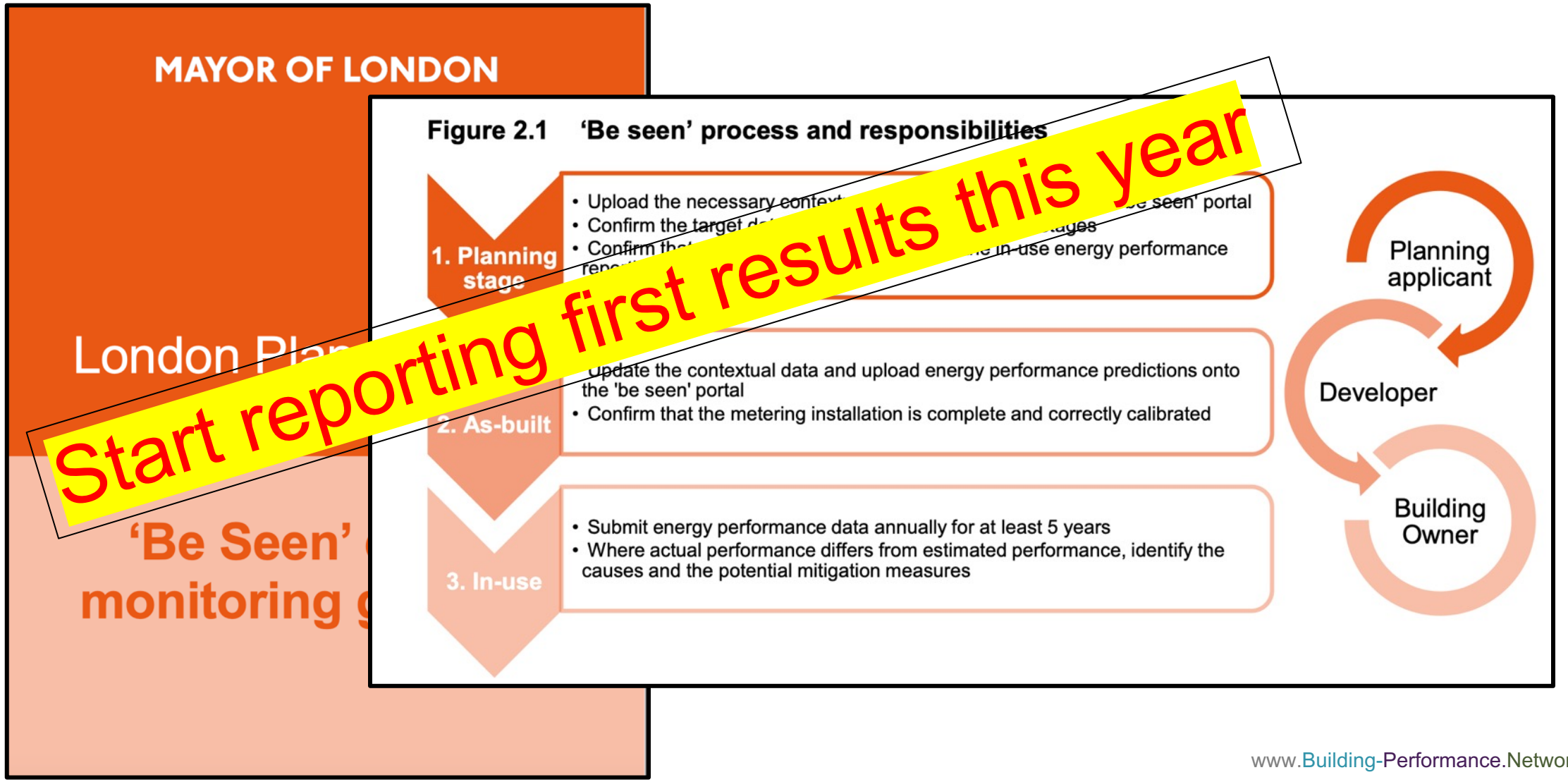


Future Homes Hub – Ready for Zero

One Recommendation

Develop performance measurement techniques to better understand 'as built' performance as designed performance improves.

GLA Monitoring Programme.



The Future Homes and Buildings Standards: 2023 consultation

compulsory

Question 40. Do you think that we should introduce voluntary post occupancy performance testing for new homes?

a. Yes
b. Yes, and I'd like to provide further information
c. No (please provide justification)

d. None of the above

Question 40: Compulsory Building Performance Evaluation using BS 40101

Perhaps housebuilders could have a contingency applied which is lifted if they demonstrate performance in use….???

Please respond to the Th
Future Hom ings
2023 consultation
by the 6th March 2024.

Compulsory Building Performance Evaluation using BS 40101

Building Performance Network

e: info@building-performance.network
w: building-performance.network
LinkedIn: building-performance-network
Twitter: @BuildPNUK

Circular Economy

Katherine Adams

Technical Director, The Alliance for Sustainable Building Products (ASBP)

ASBP The Alliance for Sustainable Building Products

Circular Economy

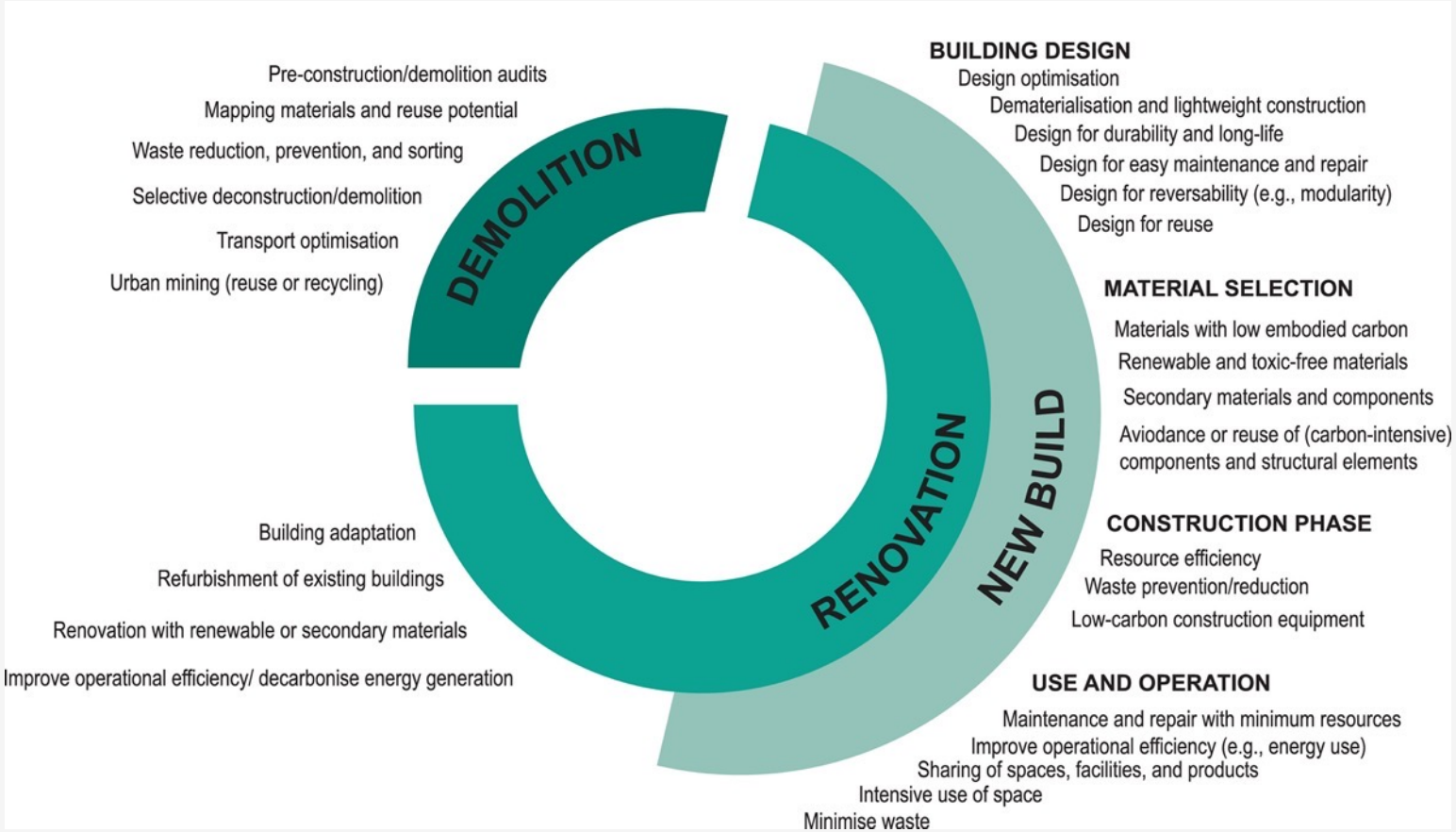
Good Homes Alliance Conference 2024

6th February, 2024

Dr Katherine Adams, Technical Director

@asbp_uk

Circular economy in construction



Circular economy and the climate emergency

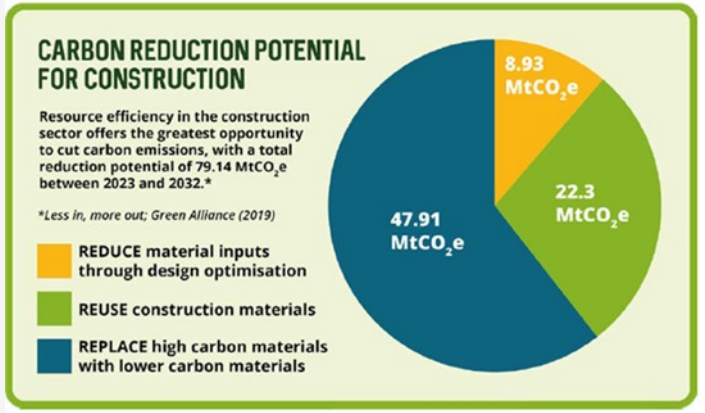
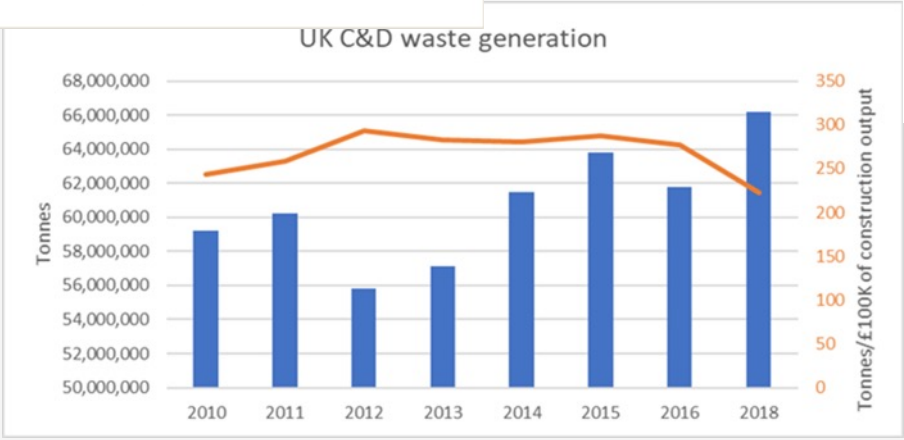


Figure 5
Opportunities from increasing resource efficiency in construction

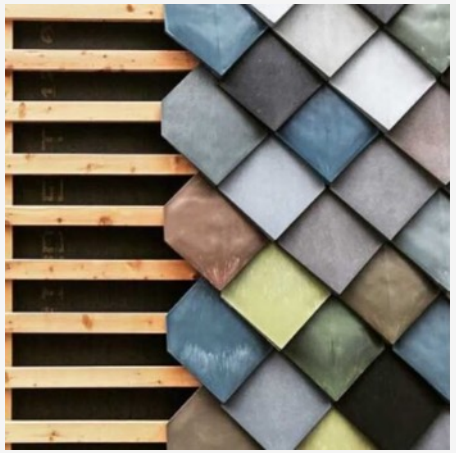
Element	Base Specification	kg CO_2e/m^2	Improved Specification	kg CO_2e/m^2	Reduction
Foundations	OPC concrete	135	40% PFA concrete	115	15%
Upper floors		10		10	
Roof	Clay roof tiles	40	Concrete roof tiles	25	37.5%
External walls	Brick and block	135	Reclaimed brick PFA in blocks	65	52%
Windows & ex doors	u-PVC	43	Alu-clad timber	38	11.6%
Internal walls		13		13	
Internal doors & finishes		59		59	
M&E		40		40	
External works	Asphalt (virgin)	125	Asphalt (50% recycled planings)	120	4%
Reduced waste		0	50% reduction in waste*	-35	50%
TOTAL		**600**		**450**	**25%**

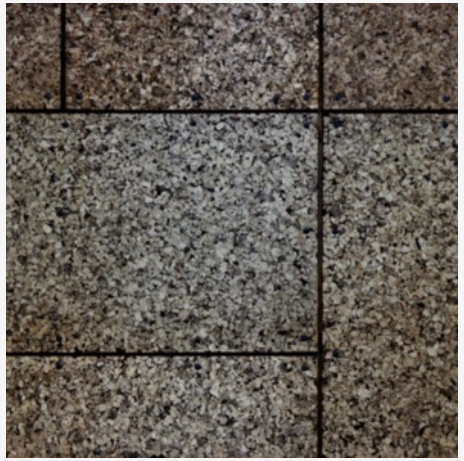


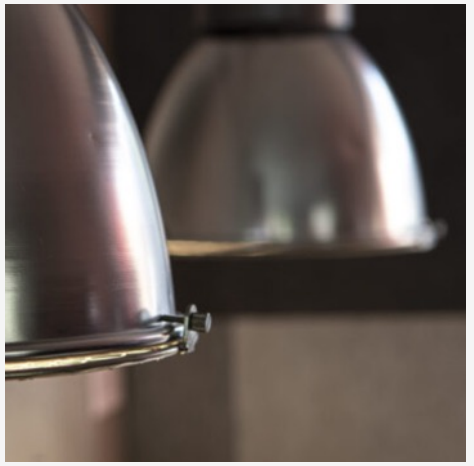
Circle House (Denmark)

- 90% of the project's housing materials to be reusable without loss of value



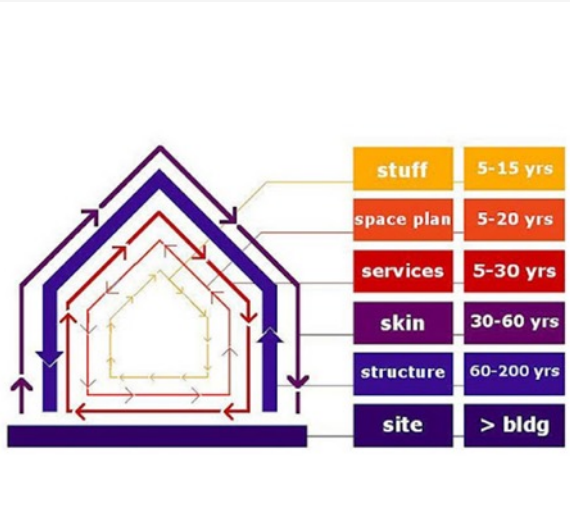


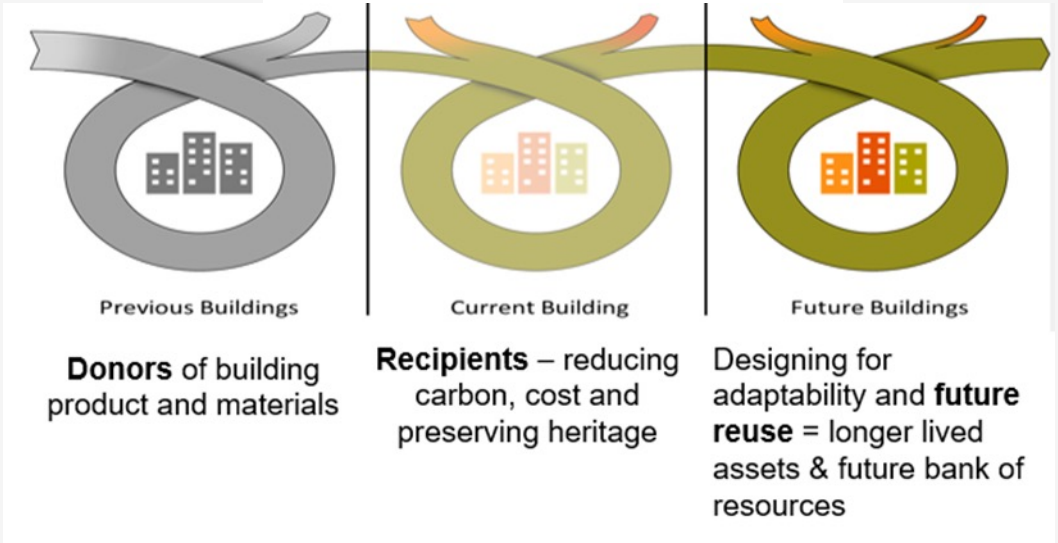



Vision

- All (social) housing to be designed with circularity principles throughout their whole life cycle by 2027 including:
  - Use of reclaimed materials and recycled materials (urban mining)
  - Designing for adaptability and flexibility (how the house grows with the occupants)
  - Designing for durability and longevity (financial sense)
  - Designing for next use (components and building (in layers))
  - Effective utilisation (space and sharing)





How

Require (planning/land purchases)

- Pre-redevelopment audits (justification of demolition)
- Pre-demolition audits (what can be reused/recycled (higher value)
- Design reviews to include circularity
- Scenario modelling for adaptability
- Project targets – reclaimed content, recycled content, reusable potential, material intensity per bedrooms etc
- Require (planning/land purchases)

Enablers

- Collaboration
- Industry take back schemes/reuse business models
- Support to innovative circular products
- Better evidence of whole life cycle (true) costs and social gains
- Community and occupant engagement
- Systematic change

ASBP The Alliance for Sustainable Building Products

Thank you

5th February, 2024

Dr Katherine Adams, Technical Director

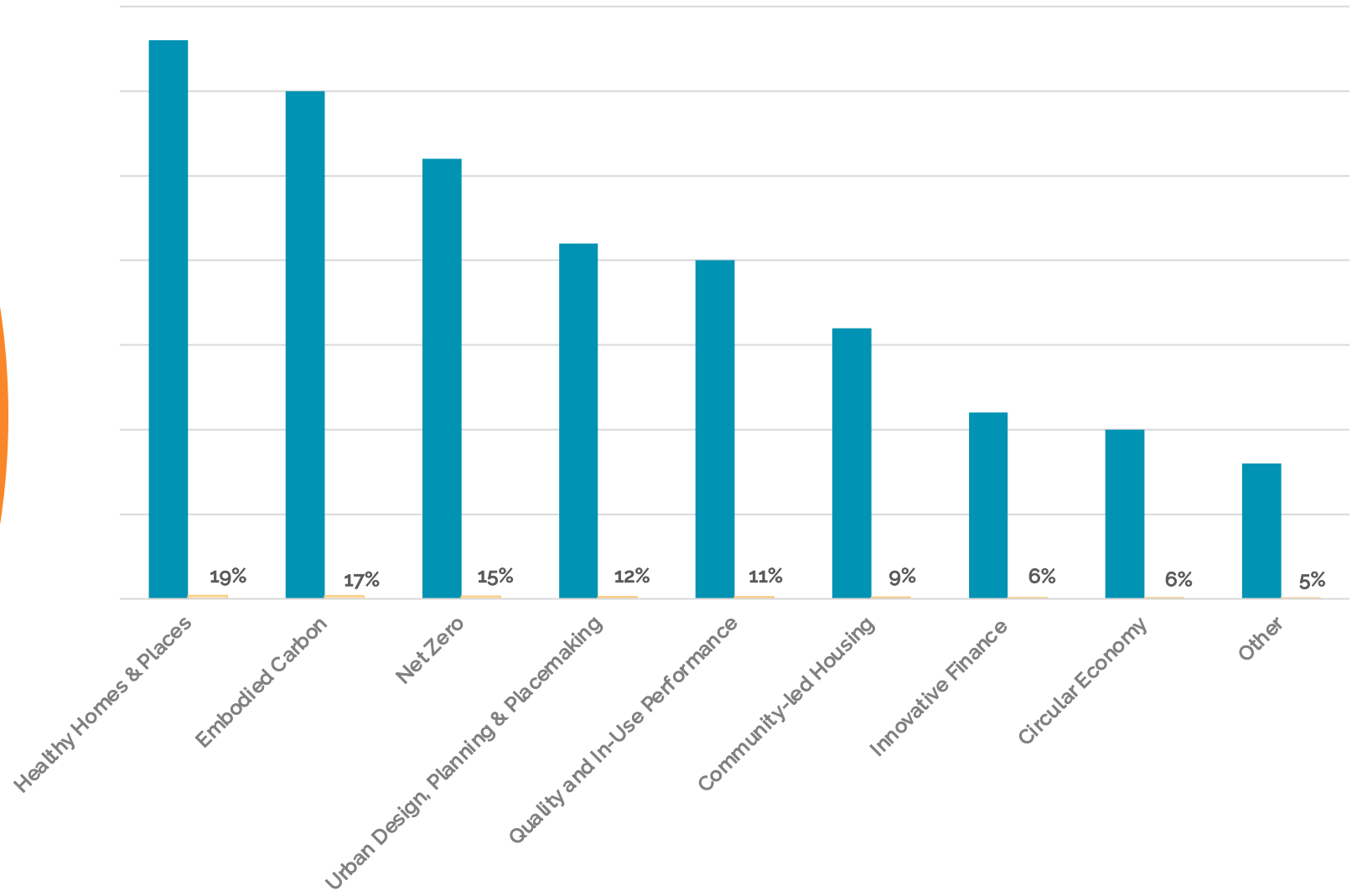
@asbp_uk

Discussion

Poll - Slido

- **From the policy asks discussed this afternoon, select the 3 you believe are most important and should be at the forefront of future policy.**

Results


19%
17%
15%
12%
11%
9%
6%
6%
5%
Healthy Homes & Places
Embodied Carbon
Net Zero
Urban Design, Planning & Placemaking
Quality and In-Use Performance
Community-led Housing
Innovative Finance
Circular Economy
Other

Closing comments from the chair

Lynne Sullivan OBE, Chair,
Good Homes Alliance

Good Homes Alliance

GHA 2024 Conference

06/02/2024, London

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"Near the tipping point... How industry must act NOW to help avert climate disaster"

Chaired by Lynne Sullivan OBE,

Chair, Good Homes Alliance

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