

Turning up the volume

Working with the volume house builders to
boost sustainable performance

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Head of Design and Sustainability



1. Overview of Ebbsfleet's Sustainability programme

2. Working with the volume house builders

The neighbourhoods // Right house, in the right place

The homes // maximising sustainable performance of homes



Progress to date



Over 5,000 homes completed and 15,000 new residents living in Ebbsfleet (2.99)



Three new primary schools already open
Two new Primary Schools open in September 26
Secondary School Campus opens in September 2026

Two community centers, Pub, cafés, pharmacy, beauticians, convenience stores, hotel all open
2 extra community centres.



Strong pipeline with detailed planning permission for 3,658 homes



Weldon Heart

Opened February 2026



COMMUNITY BUILDINGS DELIVERY

Redefining a new scale of community infrastructure

Under construction : Opening 2026

Alkerden Secondary School



Under construction : Opening 2026

Alkerden Sport Hall



Alkerden Primary School

Under construction : Opening 2026



Weldon Community Hub

May 2026



Alkerden Hub

2028



EBBSFLEET'S SUSTAINABILITY FRAMEWORK



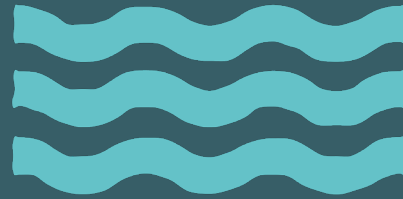
Carbon//

**NET-ZERO CARBON
ON COMPLETION**



Waste//

**ENABLE THE
CIRCULAR
ECONOMY IN NORTH
KENT**



Water//

**MINIMISE WATER
SUPPLY FROM
OUTSIDE
EBBSFLEET**



Green infrastructure//

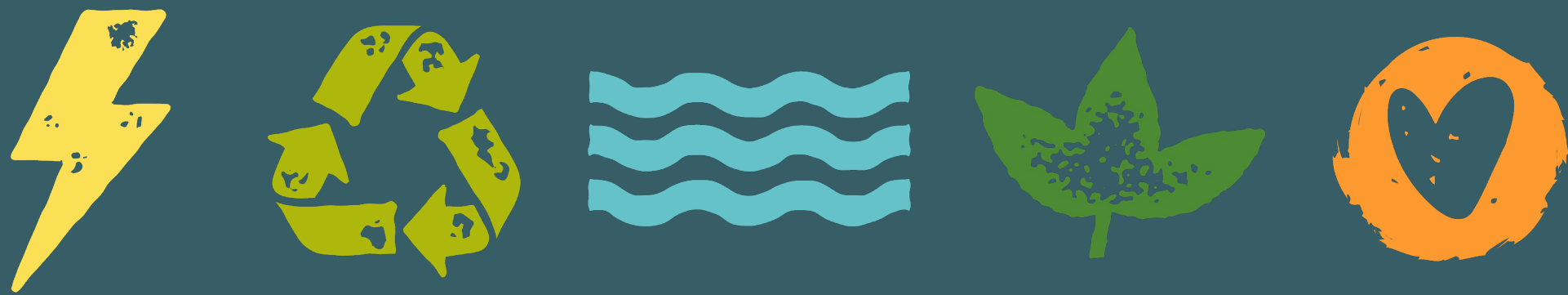
**DELIVER 400 HA OF
GREEN OPEN SPACE
& 10% INCREASE IN
BIODIVERSITY**



Health + Wellbeing

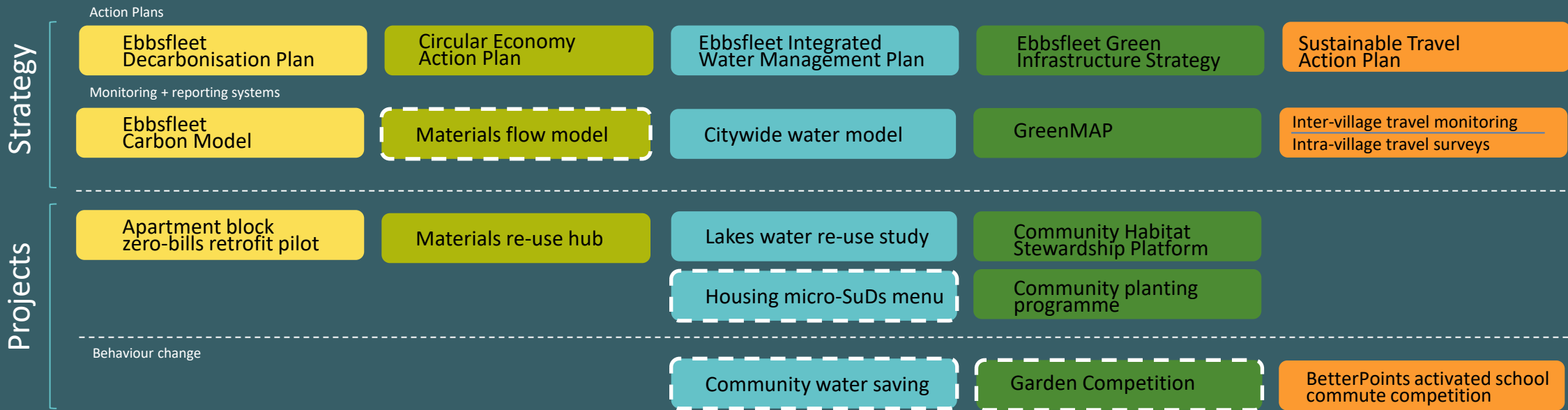
**A HEALTHY AND
HAPPY CHOICE FOR
EVERY JOURNEY.**

UNDERSTANDING AND EVOLVING SUSTAINABLE SYSTEMS



Sustainable Performance Framework (EDC project specification)

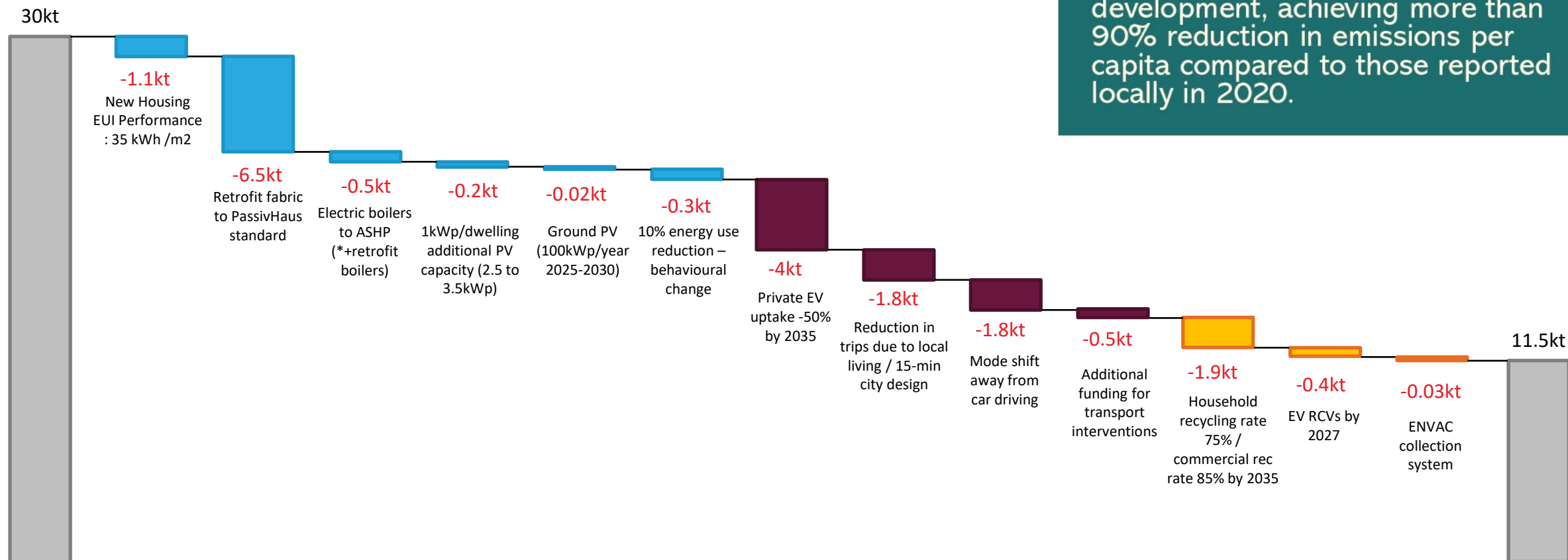
Sustainable Assessment System (Planning applications)





DECARBONISATION PATHWAY

Annual emissions reductions by action across Ebbsfleet



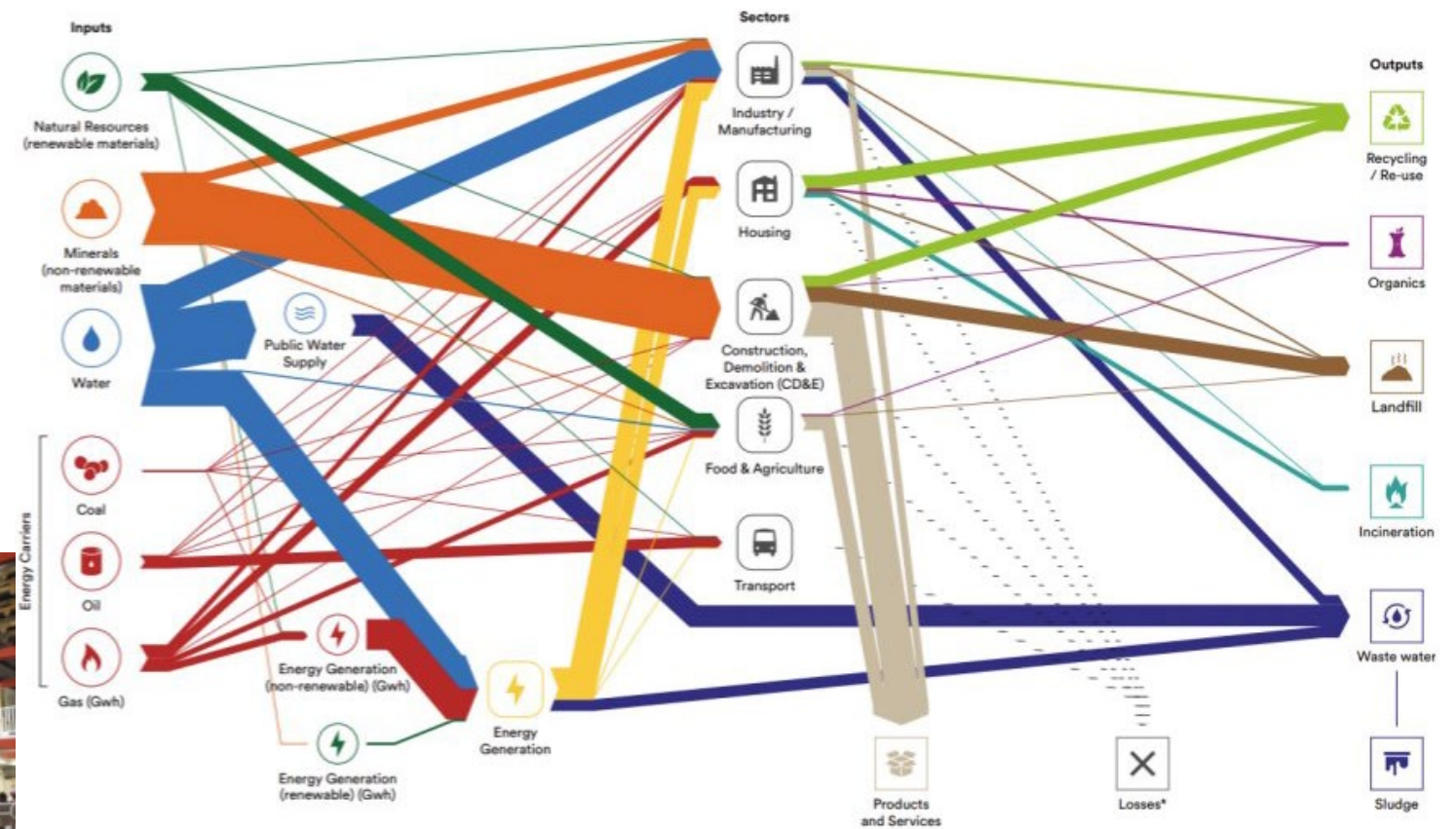
Ebbsfleet Carbon Ambition

When completed, Ebbsfleet will aim to be a net zero carbon development, achieving more than 90% reduction in emissions per capita compared to those reported locally in 2020.



CIRCULAR ECONOMY

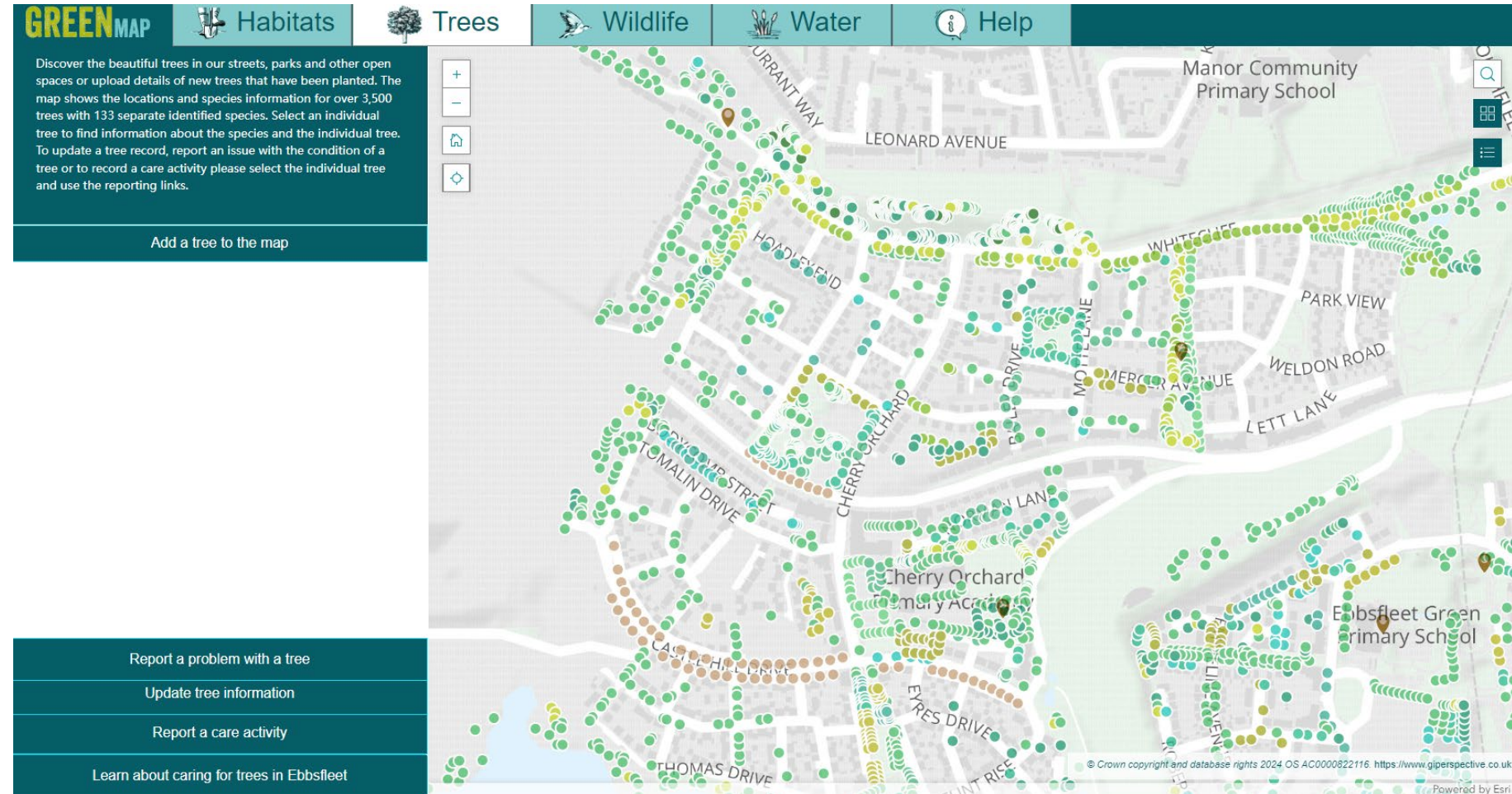
- Less waste → fewer vehicle movements and less pollution
- Reuse hubs → affordable materials and local jobs





GREEN INFRASTRUCTURE

- Digital mapping of blue and green infrastructure
- GIS-based public facing resource
- Next stage is to move towards promoting and facilitating community stewardship.



Establishing walkable neighbourhoods

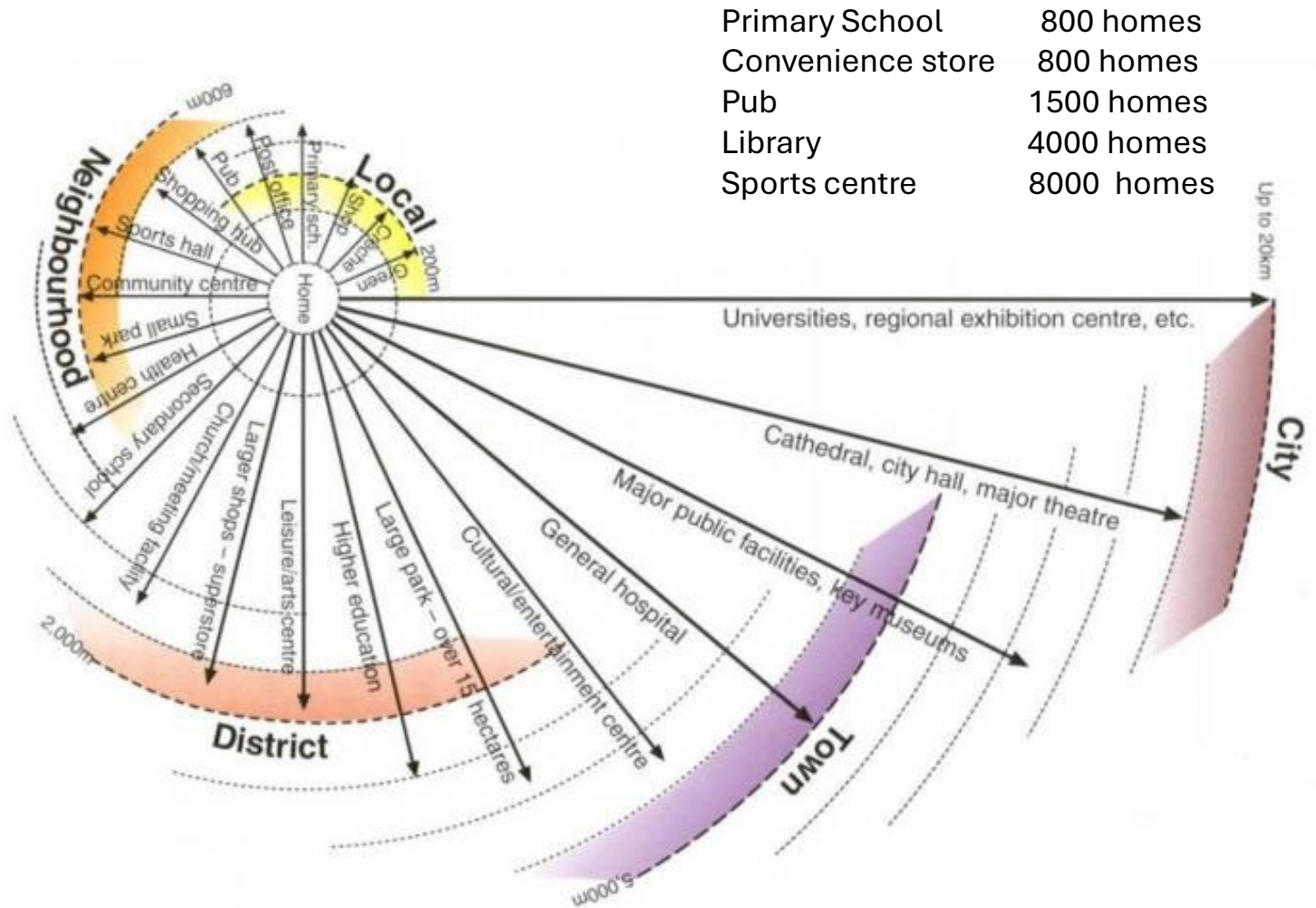
Building at a higher density enables residents to walk to local amenities, take advantage of easier travel further afield and relax in shared, inclusive, open green spaces close to home.

Density drives viability, affordability and sustainability

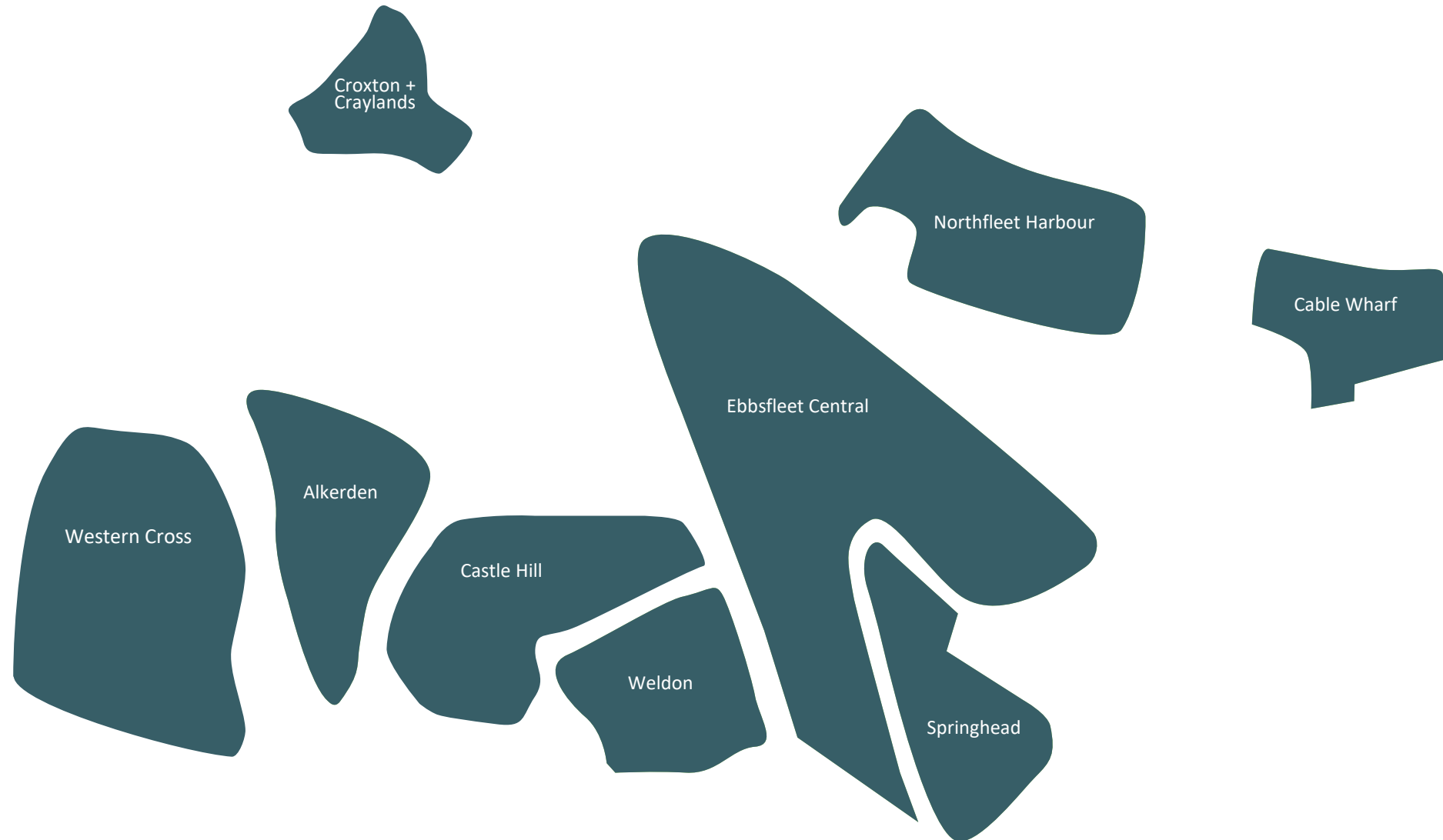
Boosting average density of new villages in Ebbsfleet to > 60dph supports viable local centres, shops, services and public transport

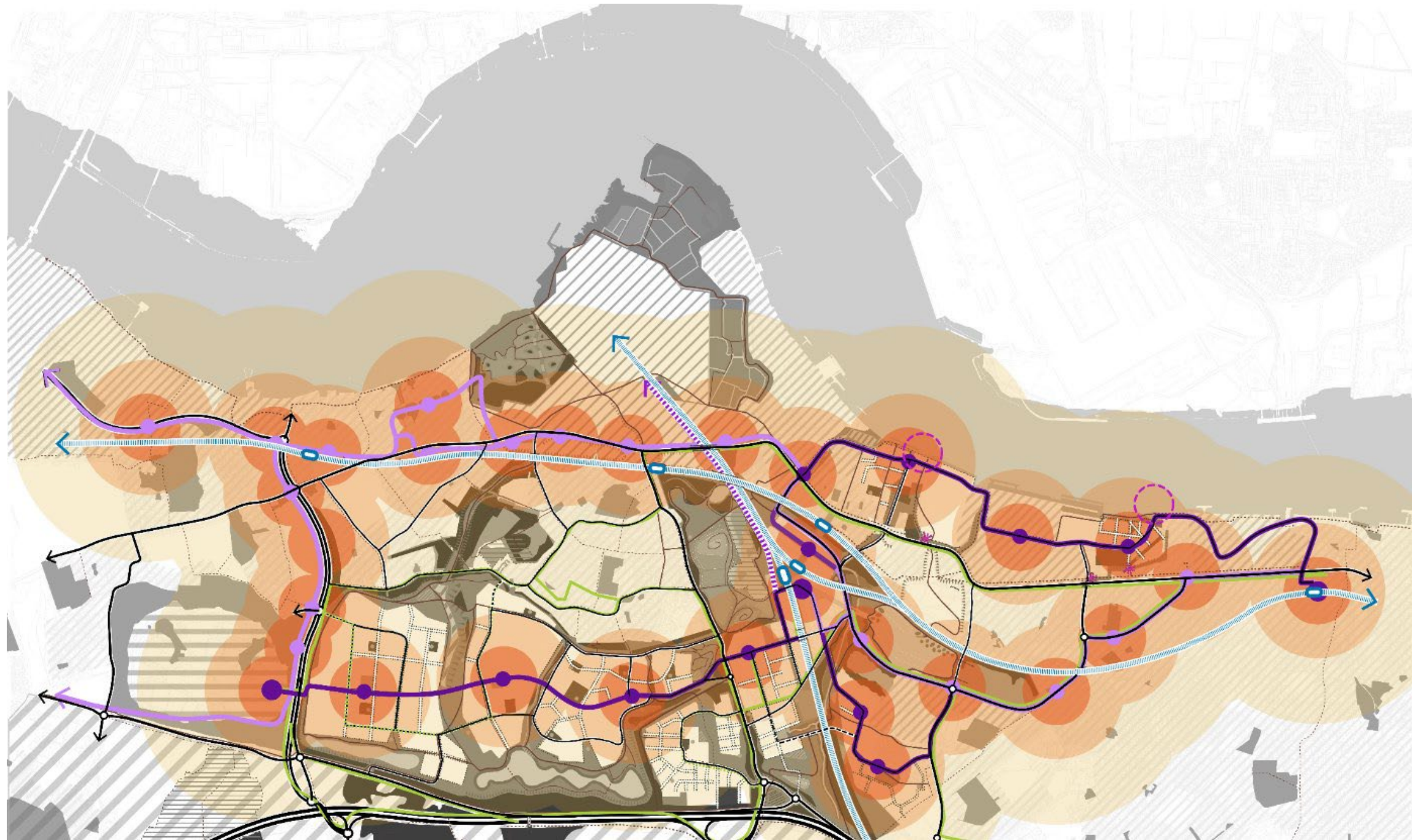
Density is the interplay of use mix, house types, street types and types of outdoor space

We are pushing for a broader range of house types and street types to create a balanced community and different character areas.



Establishing walkable neighbourhoods

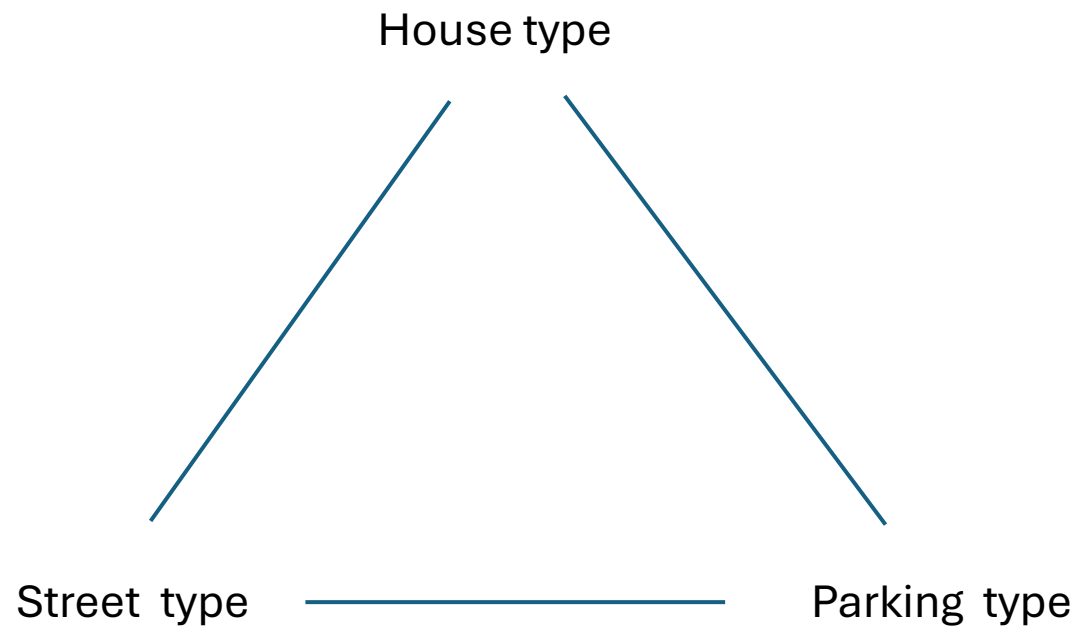




Walkable neighbourhoods

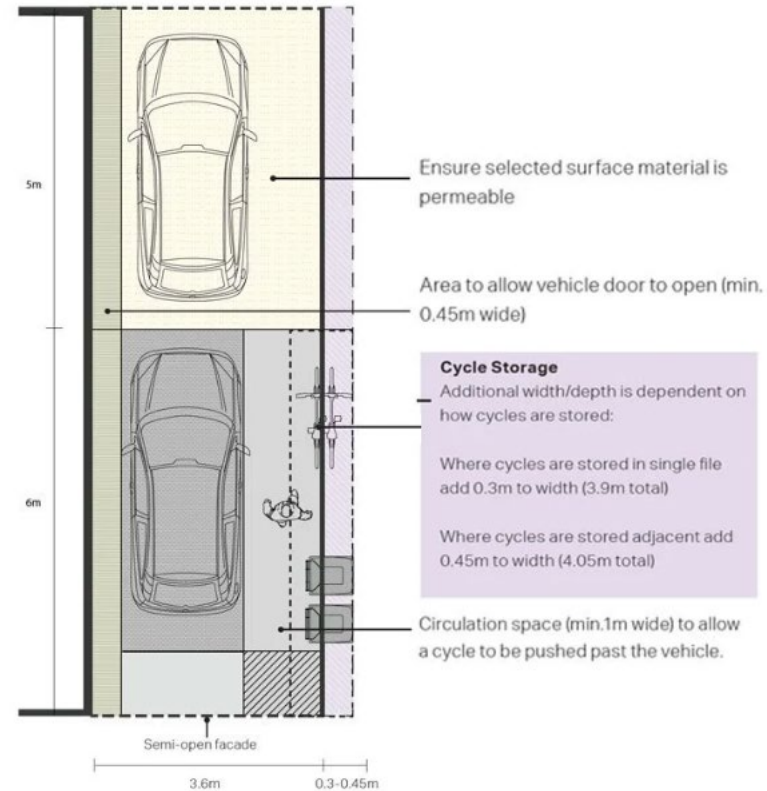
	Springhead	Cable Wharf	Harbour Village	Weldon	Castle Hill	Alkerden	Western Cross	Ebbsfleet Central
Local Shop	Sainsbury's Hypermarket 7 mins walk.	Two retail units		Co-op	Co-op Coffee shop Beauty salon Pharmacy			
Nursery			None					
Primary School	2020	2026	None	2022	2018	2026		
Community Centre	Scale C	Scale A-	Scale A-	Scale B Scale D	Scale B Scale C	Scale D Scale C Scale A	Scale B Scale B	A x 3 B x 2 C D
Pub / cafe	None	Café/bar	Café/bar	Pub Cafés	At risk	Pub + Café/bars	Café/bar	Pubs, Cafes/ bars
Local Centre	Negotiated out before EDC est.		None	Negotiated out prior to EDC est.				

Housing density



House types / parking types

- Promoting integrated parking within house footprints where possible.
- A second parking space only allowed if tandem parking.
- Tandem parking only supported if comprehensive parking management planned and provided for through stewardship strategy.
- Second space not counted in parking calcs if in a tandem.
- 3m min width to garages.



Street types // Design coded streets



Annual Assessment // Street Design

Key assessment tool : Public Realm Strategy

2020-2021

Number of applicable projects		2	4	2	4	2
KPI		Level 1 Street	Level 2 Street	Level 3 Street	Level 4 Street -Mews	Level 4 - Lanes
No. of trees		100%	50%	50%	75%	50%
Footway width		100%	50%	100%	100%	100%
Cycle Lane width		50%	50%	N/A	N/A	N/A
Verge Width		0%	100%	100%	100%	100%
Front boundary		100%	100%	100%	75%	50%
Tree spacing		100%	100%	N/A	N/A	N/A

2019-2020

Number of applicable projects		5	4	4	4	1
KPI		Level 1 Street	Level 2 Street	Level 3 Street	Level 4 Street -Mews	Level 4 - Lanes
No. of trees		100%	75%	25%	75%	0%
Footway width		0%	0%	0%	0%	0%
Cycle Lane width		0%	0%	N/A	N/A	N/A
Verge Width		0%	25%	0%	25%	0%
Front boundary		40%	75%	50%	75%	100%
Tree spacing		100%	75%	N/A	N/A	N/A

Street types



Primary distributor
Castle Hill (2018)
25-33 dph



Primary distributor
Western Cross (2021)
55 dph

17% more homes
43% less hard surfacing
More space for planting and cycle tracks

Street types



Castle Hill (2016) 25-33 dph



Ashmere (2021) 55-63 dph

Practicing what you preach.....

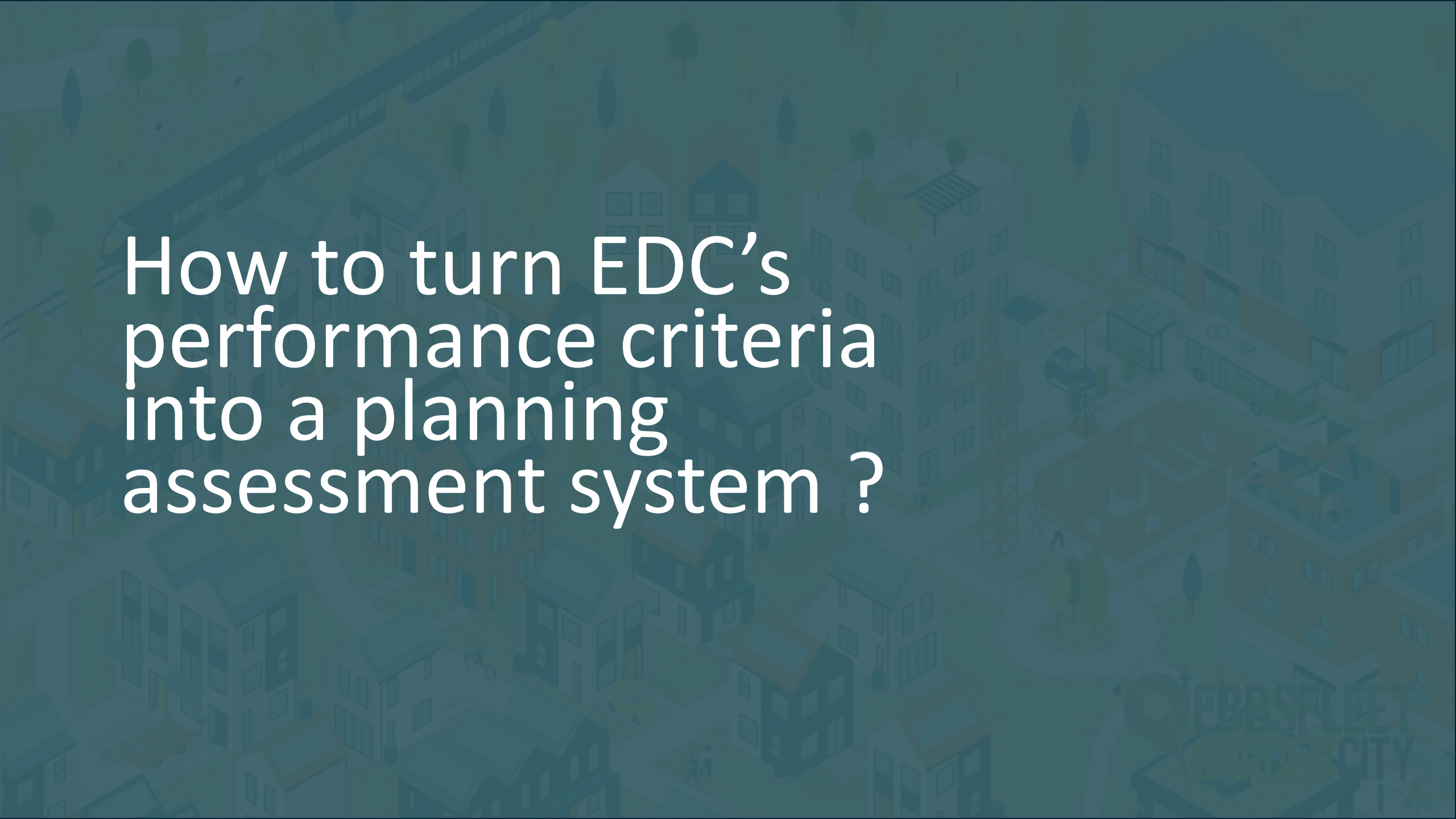
Ebbsfleet Sustainable Performance Framework

- In 2021 EDC developed a performance spec for our own projects across 5 sustainability performance areas.
- These performance levels were derived from national guidance (LETI, RIBA 2030, RICS etc) other major public sector development performance levels.
- This established 87 performance criteria across 5 priority areas.

3.2 Carbon and energy

Performance requirements

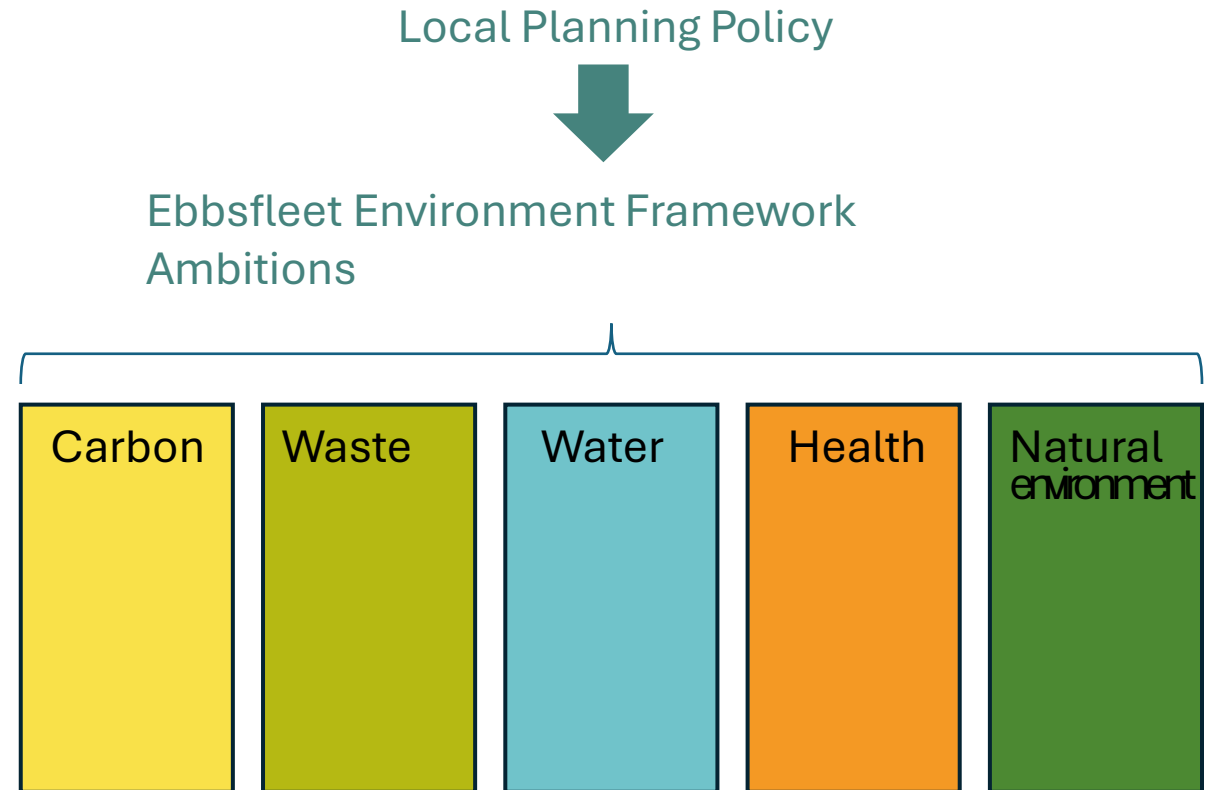
Theme	Target	Metric	Implement from	Target applied to asset				Operation	Context / Reference
				Public realm and infrastructure	Residential	Commercial	Schools & Community buildings		
Net Zero	Upfront carbon	Upfront carbon (A1-A5) kgCO ₂ e/m ² (GIA)	2025	Establish RIBA Stage 2 baseline and demonstrate reduction path in line with PAS2080 methodology. Benchmark baseline against the US EPA UEOSSP dataset construction carbon budget of 0.171 kgCO ₂ e/\$ spend	<500 kgCO ₂ e/m ²	<600 kgCO ₂ e/m ²		Track carbon impacts of estate and maintenance	Upfront carbon includes the production stage of the materials including the extraction, transport to the factory and manufacturing and also the carbon association with the construction stage, which includes transportation to the site and install Targets taken from best practice LETI 2020-30 targets
			2030		<300 kgCO ₂ e/m ²	<350 kgCO ₂ e/m ²	<300 kgCO ₂ e/m ²		
	Basements	Basement construction	2025	Review carbon impacts of basement construction and optimise design to reduce embodied carbon				N/A	Basements are typically carbon intensive. Understanding the impacts can help optimise design or seek alternatives.
	Space heating	Space heating kWh/m ²	2025	N/A	15 kWh/m ²			N/A	Target taken from Passivhaus Institute requirements for space heating energy demand in new buildings.
	Energy Use Intensity (EUI)	kWh/m ² /y GIA	2025	N/A	≤35 kWh/m ² /y	≤55 kWh/m ² /y		N/A	EUI is all the energy that is used in a space and includes regulated and non regulated, excluding space heating. Taken from RIBA 2030 climate challenge best practice guidance. Adopting best practice guidance is essential to ensure that minimise the need for energy during operation.
	Renewables	Amount of on site renewable energy generation / procurement of renewable energy in operation	2025	Consider on site solar array	Maximise renewables so that 70% of the roof area is covered	Maximise renewables to generate the annual energy requirement for at least two floors of the development on-site		100% renewable energy following UKGBC three principle hierarchy	Maximising renewable energy is needed to be net zero carbon. This requirement follows LETI 2030 targets for PV cover and the UKGBC Renewable Energy Procurement and offsetting guidance for operational guidance.

The background of the slide is a detailed, isometric illustration of a city. It features a variety of buildings, including residential houses and commercial structures, some with balconies and solar panels. There are also trees, a winding road, and a bridge in the distance. The entire scene is rendered in a muted, teal-blue color palette, giving it a modern and professional look.

How to turn EDC's
performance criteria
into a planning
assessment system ?

1. Mapping of local policy

Our starting point was to map across current planning policies to the sustainability focus areas in Ebbsfleet's Sustainable Performance Framework, to understand how they align, and assess policy support across all areas.



2. Assessing anticipated performance levels of local planning policy

We have assessed current sustainability policies in Dartford and Gravesham to identify any defined performance levels, and the extent to which they will deliver the targets of Ebbsfleet's Sustainability Framework

Virtually all policies set a target/outcome in principle (e.g. mitigation of climate change), but without a minimum or maximum performance level.



Dartford Local Plan 2024

Policy M3.1

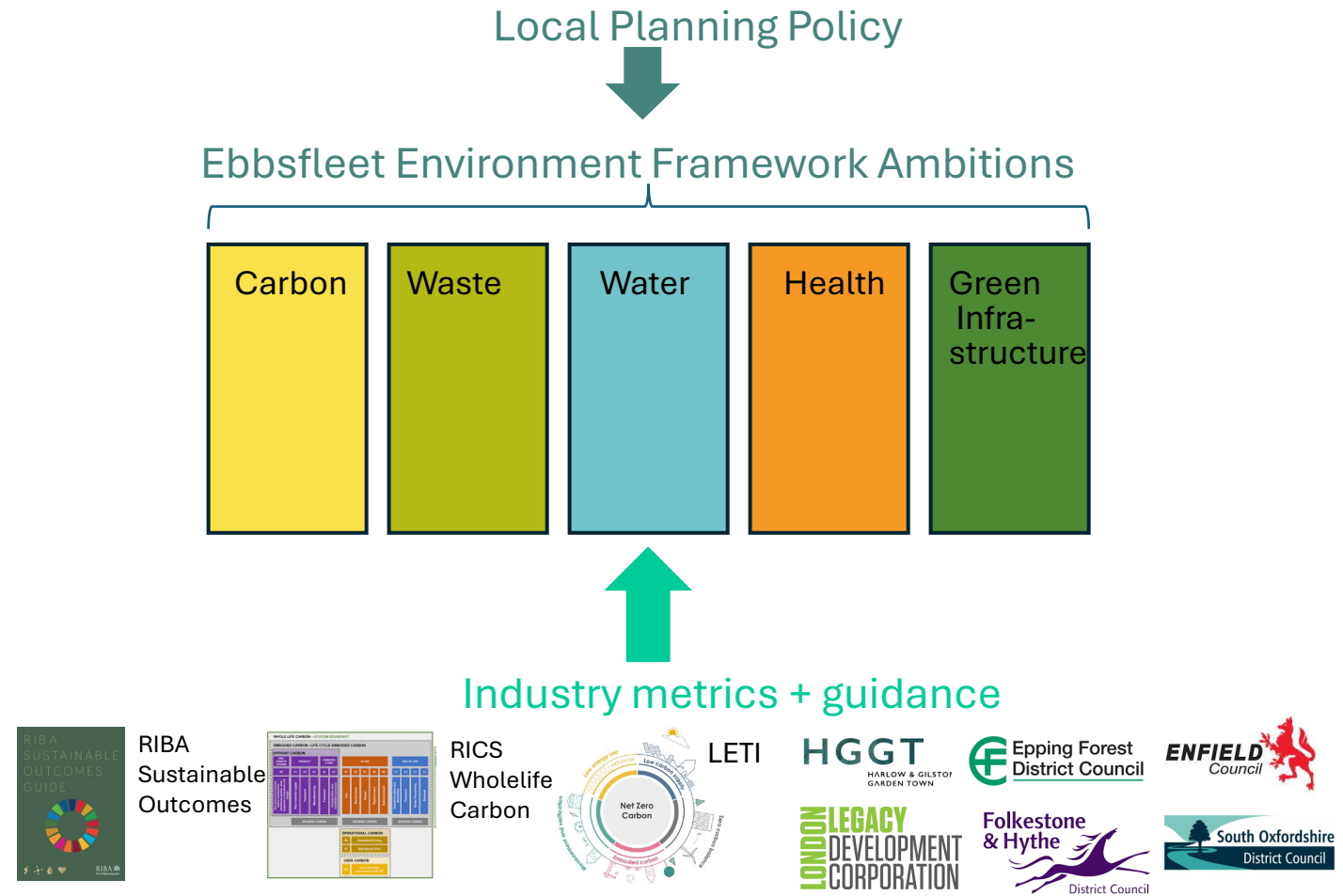
The design, construction and whole life carbon cost of development must contribute to the mitigation of, and adaption to, climate change. This includes, but is not limited to, reducing embodied and operational carbon emissions, improving energy performance and preserving water. Applicants should demonstrate **best endeavours to use recognised assessment tools / quality standards.**

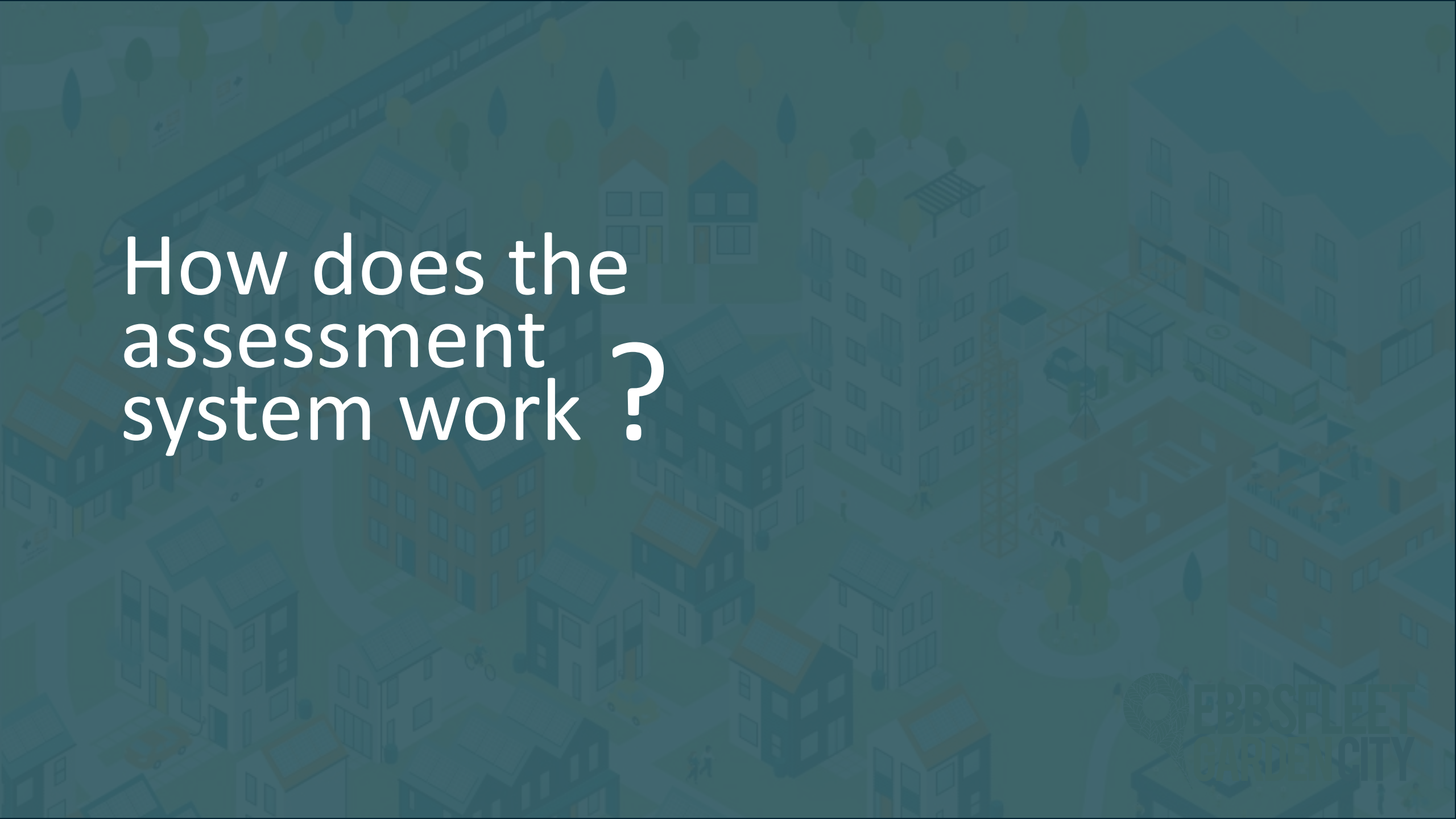
3. Review of established expected performance levels within the industry.

We have then looked across industry in the south east to identify any quantitative performance levels for key sustainability criteria that are becoming more generally established.

We looked at national and local design guidance, performance standard of large scale developments in the south east, and planning authorities that have established defined quantitative performance levels.

Soon became clear there is an emerging consensus across most of these around key performance area.



An isometric illustration of a city with various buildings, trees, and a train track, serving as a background for the text.

How does the
assessment
system work ?

Step 1 > Select a project type



Residential Buildings



Commercial Buildings



Schools & Community Buildings



Public realm + Infrastructure

Step 2 > Consult assessment tables

Ebbsfleet Sustainability Framework Theme heading

Carbon and Energy

Sustainable Performance Assessment

< Guidance

Performance measure	Will not deliver Net-Zero Ebbsfleet	Towards Net-Zero	Net-zero best practice
Whole Life Carbon CO2 emission from both embodied and operational stages- (modules A-C, excluding B6- B7) CO2 e / m2 (GIA)	>800 kgCO2 e/m2	≤800 kgCO2 e/m2 (RIBA 2030 outcomes)	≤450 kgCO2 e/m2 (LETI targets)
Upfront carbon Upfront carbon (A1-A5) kg CO2 e / m2 (GIA)	>500 kgCO2 e/m2 (LETI targets)	≤500 kgCO2 e/m2 (LETI targets / RIBA 2030 outcomes)	≤300 kgCO2 e/m2 (LETI targets / RIBA 2030 outcomes)
Energy Efficiency Energy Use Intensity (EUI) Annual measure of the total energy consumed in a building. kWh / m2 / y (GIA)	>60 kWh/m2/y	≤60 kWh/m2/y	≤35 kWh/m2/y

Click on guidance box to go to related design guidance for delivering that measure, including info on submission requirements

Describes the name of each sustainability performance measure and a quantitative metric for measuring performance and delivery.

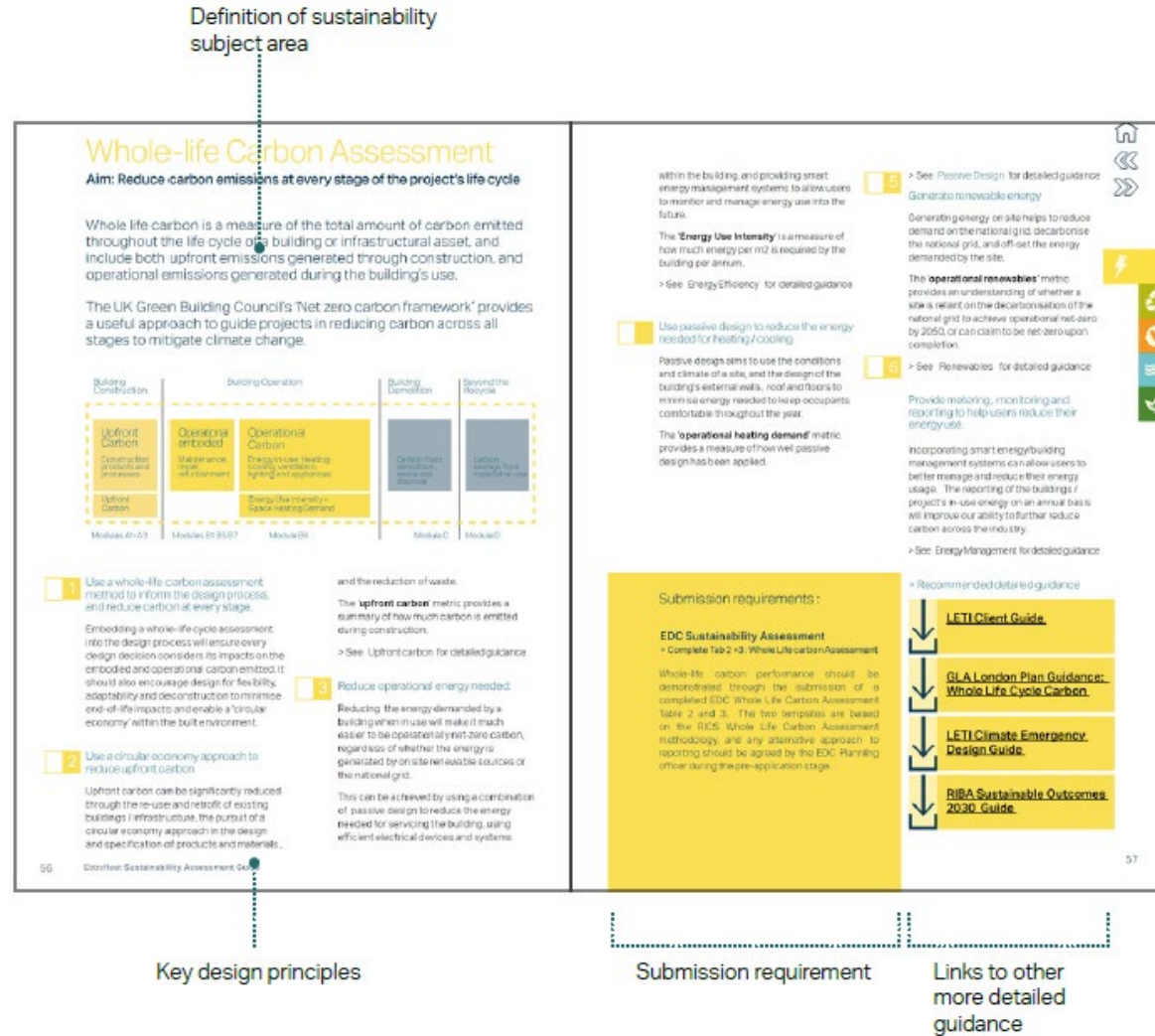
Minimum level of performance that maybe policy compliant

Intermediate performance level that maybe policy compliant

Optimum level of performance that would deliver net-zero development, and recognised as policy compliant

- Carbon and energy
- Waste and materials
- Health and wellbeing
- Water
- Natural environment

Step 3 > Use the design guidance (as needed)



Step 4 > Submit Summary Assessment Table

Complete
planning
application
project info

Application Assessment Summary

Project Name: _____ Date: _____

Sustainability Themes / Performance Measure	Please select Sustainability Level achieved in each measure		
Carbon & Energy			
Whole life Carbon	☐	☐	☐
Upfront Carbon	☐	☐	☐
Energy efficiency : Energy Use Intensity (EUI)	☐	☐	☐
Passive Design : Space heating	☐	☐	☐
Renewables	☐	☐	☐
Energy Management	☐	N/A	☐
Waste & Materials			
Circular sourcing	☐	☐	☐
Responsible sourcing	☐	☐	☐
End of life reusability		N/A	☐
Construction waste	☐	☐	☐
Offsite Manufactured, MMC, Pre-manufactured			
Health & Wellbeing			
Cycle parking & facilities	☐	N/A	☐
Car club	☐	N/A	☐
Transport connections		N/A	
Healthy materials			
External daylight and sunlight			
Internal daylighting	☐	☐	☐
Overheating	☐	☐	☐
Water			
Sustainable Urban Drainage Systems (SuDs)	☐		☐
Surface water run off	☐	☐	☐
Potable Water use			
Water Collection	☐	☐	☐
Natural Environment			
Biodiversity Net Gain	☐	☐	☐
Urban Greening Factor	☐	N/A	☐
Tree Canopy cover			
Green Roof coverage	☐	☐	☐
Food growing	☐		☐
Drought resistance		☐	

Sustainability level
check boxes, from
lower performance
that won't achieve
net zero (left) to net
zero best practice
(right).
Check the box
that reflects the
selected level for
each measure.



Step 5 > Provide supporting evidence

Ebbfleet Sustainable Assessment Summary Table

Single page easy to digest summary

Ebbfleet Sustainable Assessment Spreadsheet

Key data (e.g. energy and carbon modelling) allows for verification of reported performance in the Summary

Energy
Statement

Whole Life Carbon

EUI + SHD

Overheating
report

Circular
Economy
Statement

Refuse and
Recycling
Storage
Statement

Landscape
Strategy

Biodiversity
Plan/Survey
/Report

Urban Green
Factor

Flood Risk
Statement

Foul Sewage+
Surface Water
Drainage
Strategy

Design +
Access
Statement

Accessible and
Adaptable Homes
Statement

Daylight and
Sunlight
Assessment

Detailed reports- provides opportunity for applicants to explain how sustainability has been considered and applied to scheme design, and justification for lower performance levels.

Ashmere Phase 2

Sustainability Themes / Performance Measure	Please select Sustainability Level achieved in each measure		
Carbon & Energy			
Upfront Carbon	☐	☐	☐
Operational: Space heating	☐	☐	☐
Operational: Energy Use Intensity (EUI)	☐	☐	☐
Operational: Renewables	☐	☐	☐
Whole life Carbon	☐	☐	☐
Perform as Designed	☐	N/A	☐
Water			
Sustainable Urban Drainage Systems (SuDs)	☐	☐	☐
Surface water run off	☐	☐	☐
Potable Water use	☐	☐	☐
Water Collection	☐	☐	☐
Waste & Materials			
Circular sourcing	☐	☐	☐
Responsible sourcing	☐	☐	☐
End of life reusability	☐	☐	☐
Construction waste	☐	☐	☐
Offsite Manufactured, MMC, Pre-manufactured	☐	☐	☐
Health & Wellbeing			
Local Amenities	☐	☐	☐
Cycle parking & facilities	☐	☐	☐
Car club	☐	N/A	☐
Transport connections	☐	N/A	☐
Housing Quality	☐	☐	☐
Healthy materials	☐	☐	☐
External daylight and sunlight	☐	☐	☐
Internal daylighting	☐	☐	☐
Overheating	☐	☐	☐
Dual aspect	☐	☐	☐
Natural Environment			
Biodiversity Net Gain	☐	☐	☐
Urban Greening Factor	☐	N/A	☐
Tree Canopy cover	☐	☐	☐
Green Roof coverage	☐	☐	☐
Food growing	☐	☐	☐
Drought resistance	☐	☐	☐

Unable to assess

Unable to assess

Alkerden Phase 5B

Sustainability Themes / Performance Measure	Please select Sustainability Level achieved in each measure		
Carbon & Energy			
Upfront Carbon	☐	☐	☐
Operational: Space heating	☐	☐	☐
Operational: Energy Use Intensity (EUI)	☐	☐	☐
Operational: Renewables	☐	☐	☒
Whole life Carbon	☐	☐	☐
Perform as Designed	☐	N/A	☐
Water			
Sustainable Urban Drainage Systems (SuDs)	☐	☐	☐
Surface water run off	☐	☐	☐
Potable Water use	☐	☐	☐
Water Collection	☐	☐	☐
Waste & Materials			
Circular sourcing	☐	☐	☐
Responsible sourcing	☐	☐	☐
End of life reusability	☐	☐	☐
Construction waste	☐	☐	☐
Offsite Manufactured, MMC, Pre-manufactured	☐	☐	☐
Health & Wellbeing			
Local Amenities	☐	☐	☒
Cycle parking & facilities	☐	☐	☐
Car club	☐	N/A	☒
Transport connections	☐	N/A	☒
Housing Quality	☐	☐	☐
Healthy materials	☐	☐	☐
External daylight and sunlight	☐	☐	☐
Internal daylighting	☐	☐	☐
Overheating	☐	☐	☐
Dual aspect	☐	☐	☒
Natural Environment			
Biodiversity Net Gain	☐	☐	☐
Urban Greening Factor	☐	N/A	☐
Tree Canopy cover	☐	☐	☐
Green Roof coverage	☐	☐	☐
Food growing	☐	☐	☐
Drought resistance	☐	☐	☐

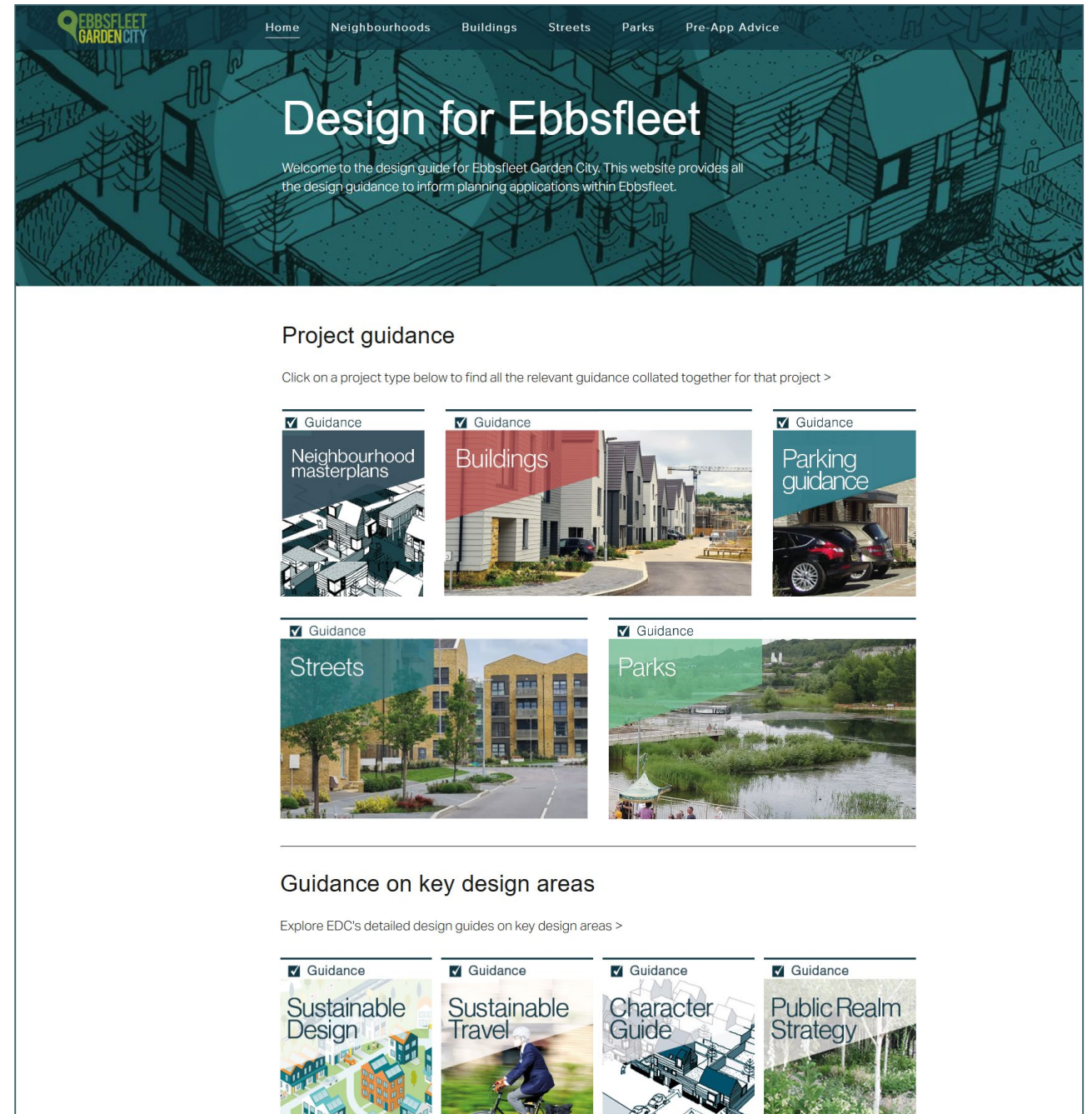
Unable to assess

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EBBSFLEET'S DESIGN GUIDANCE

www.designforebbsfleet.org

- Single hub for all of EDC's guidance (avoid applicants having to read lengthy PDFs)
- Guidance is framed by project type (Building, Streets, Parks or Neighbourhoods) or by design subject (sustainable travel, sustainability, accessibility etc)
- New guidance co-developed with Planning Committee to ensure shared vision and understanding of preferred design outcomes



Key takeaways....

- Masterplanning walkable neighbourhoods and integrated land-use / travel planning remain the most impactful way of embedding sustainability into future new towns and developments.
- Using existing industry systems , standards and metrics aligned with wider practice creates greater consistency and understanding across industry, and has enabled better uptake from the volume house builders.

Simon Harrison

www.ebbsfleetdc.org.uk

www.designforebbsfleet.org

www.egctrust.org

