

Sustainable Housing Development – Road to Net Zero

APSE Energy Summit 2023

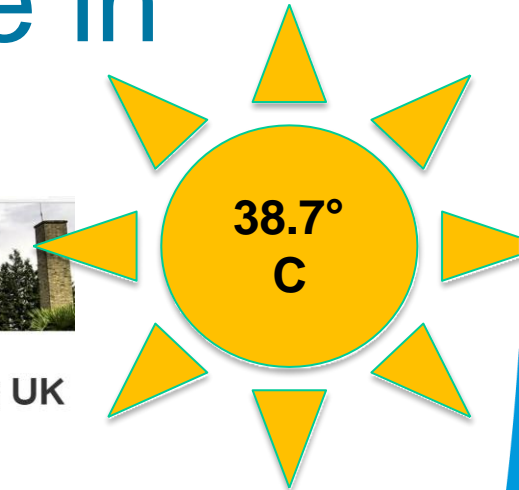
Fiona Bryant, Director Enterprise and Sustainable Development



A Challenging Environment



Impacts of climate change in Cambridge



New official highest temperature in UK confirmed

Author: Press Office
16:55 (UTC+1) on Mon 29 Jul 2019

A recording of  at Cambridge Botanic Garden on Thursday 25 July has become the highest temperature recorded in the UK.

UK heatwave: Met Office confirms record temperature in Cambridge

© 29 July 2019



Cambridge flooding: Shops close and library roof damaged

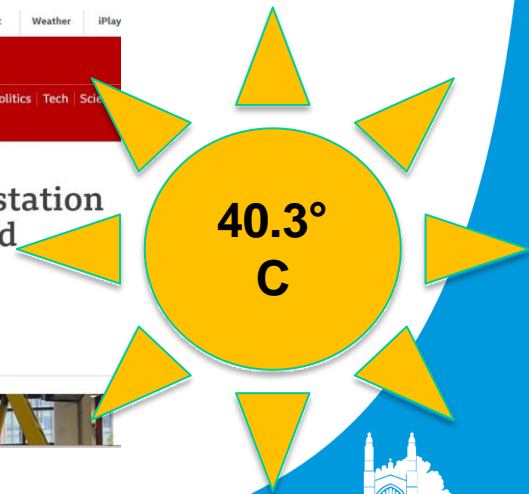
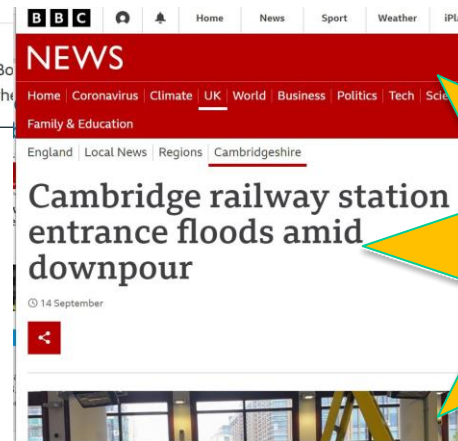
© 25 August 2012



Torrential rain in Cambridge city centre has led to shops closing and part of a library ceiling collapsing.

Shops including H&M in Christ Lane and Lakeland Limited on Sidney Street were forced to close early due to the flash flooding.

The heavy downpour also caused part of the Central Library ceiling to collapse and caused "minor damage" to stock.



500 home programme







FOUNDATION 200



cambridge.gov.uk

facebook.com/camcitco

twitter.com/camcitco



CIP's Iain Liversage won 'Construction Specialist of the Year 2021'



CIP won 'Best Development Team' (South) – Inside Housing Development awards



10 year home programme

1. 1,000 net Council rented units to be delivered over 10 years in a total programme of 1933
2. includes shared ownership/intermediate tenure and private sales/private rental schemes
3. grant support for the programme is assumed
4. Buro Happold to look at sustainability options
5. Technical constraints may restrict sustainability



Constraints



Land Availability



Historical Design



Funding



Managing Expectations



Engaging the hard to reach



New Build / Retrofit



Achieving Net Zero



Skills and Capability/Partnerships



- CIP Board has equal representation and leads on vision.
- CIP Investment team lead on the day to day decision making.
- Site specific team responsible for project delivery.



Policy Trade offs



Climate emergency

- Need to reduce carbon
- Low carbon housing is more expensive
- Build less?

Housing Emergency

- 2000 on waiting list
- Need lower energy bills
- Need to build more?

Constraints

Not all sites suited for Passivhaus due to orientation, other design and planning constraints

Council will have less design control over S106 sites

Limited experience from designers, contractors and supply chains

Difficult to control tenant behaviour

EHO restrictions on ASHP

Energy and carbon reduction limited if tenants and E&F are not able to operate or maintain new technology

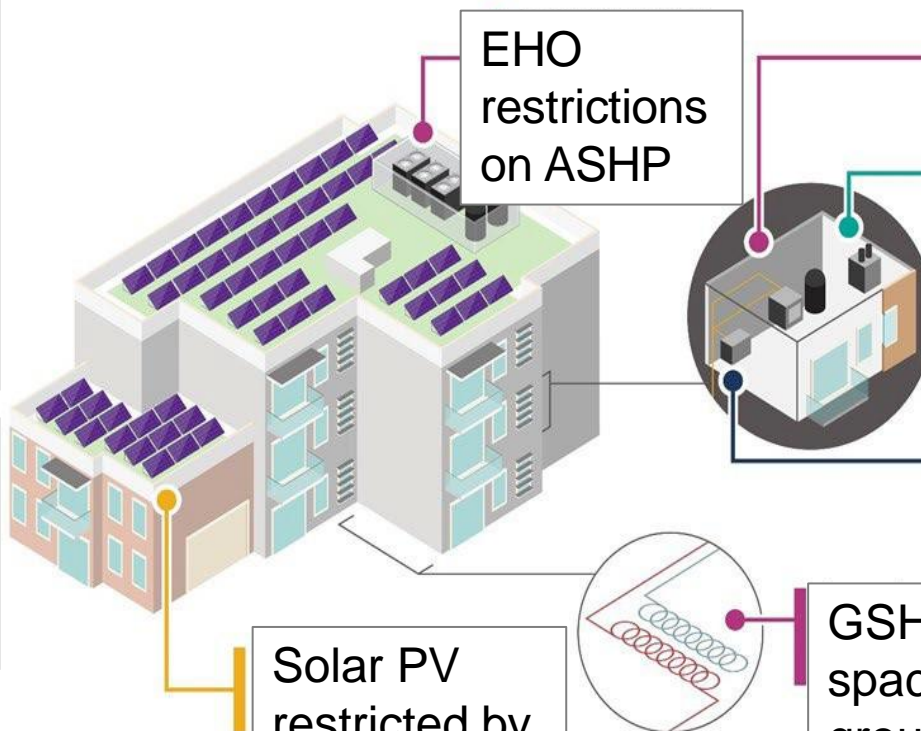
Significant storage space required for technology

GSHP need lots of space or the right ground conditions

Solar PV restricted by roof space

Water restrictions and lack of car parking may be unpopular

Biodiversity easier on brownfield and greenfield sites but not overgrown sites



Adopt the roadmap to Net Zero Carbon

2020

National standards

2020

Cambridge Local Plan & SHDG

2025

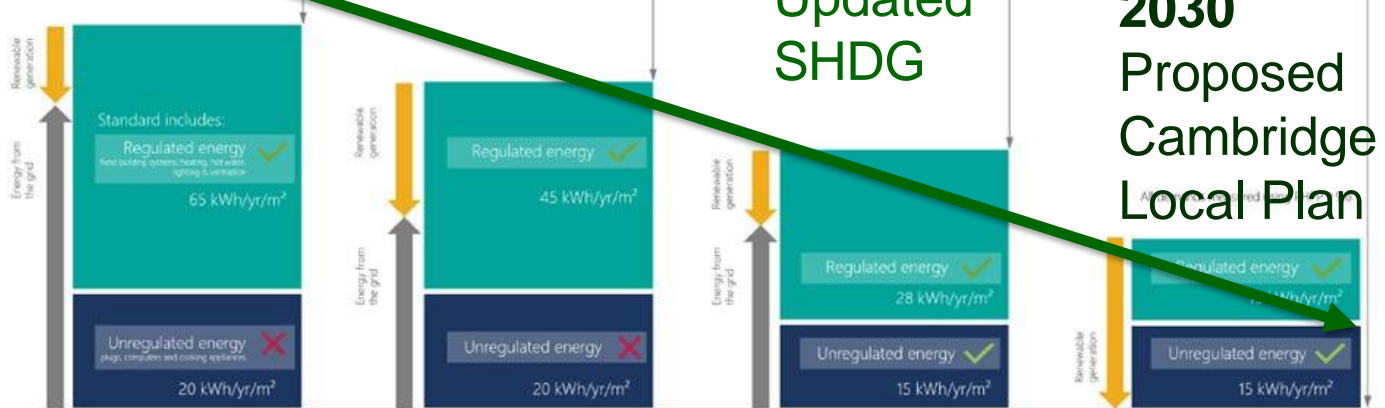
National Standards

2021

Proposed Updated SHDG

2030

Proposed Cambridge Local Plan



Local Plan

Local Plan Plus

Passivhaus

Net Zero Carbon



Cost, tenant bills and carbon trade off

Local Plan

Local Plan Plus

Passivhaus

Net Zero Carbon



Fabric ++
Technology +++

Fabric ++++
Technology ++

Fabric ++++
Technology +++++

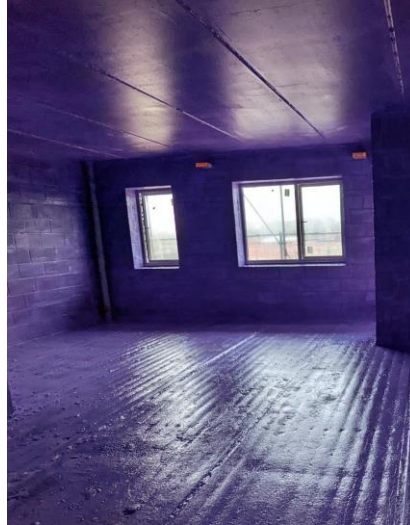
Risk:
E&F: +++
Contractor: +
Tenant: +++

Risk:
E&F: ++
Contractor: +++
Tenant: ++

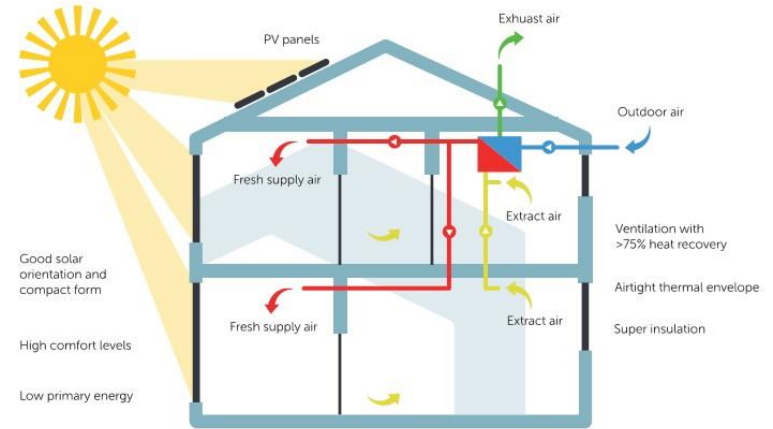
Risk:
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Building better & stronger together



PassivHaus Principles



- PassivHaus Pilot schemes, Passive Purple, combined MVHR/Heat Pumps.
- Form factor analysis on all projects from inception.
- PHPP as a design tool, open discussions on the benefits of certification. Forum for innovation.
- Maintenance Team working with Hill.
- Competitive on market sites.

Resources



THE HEART OF A NEW DISTRICT IN CAMBRIDGE



May
2021

love every drop
anglianwater



U+I TOWN.

Our Promises



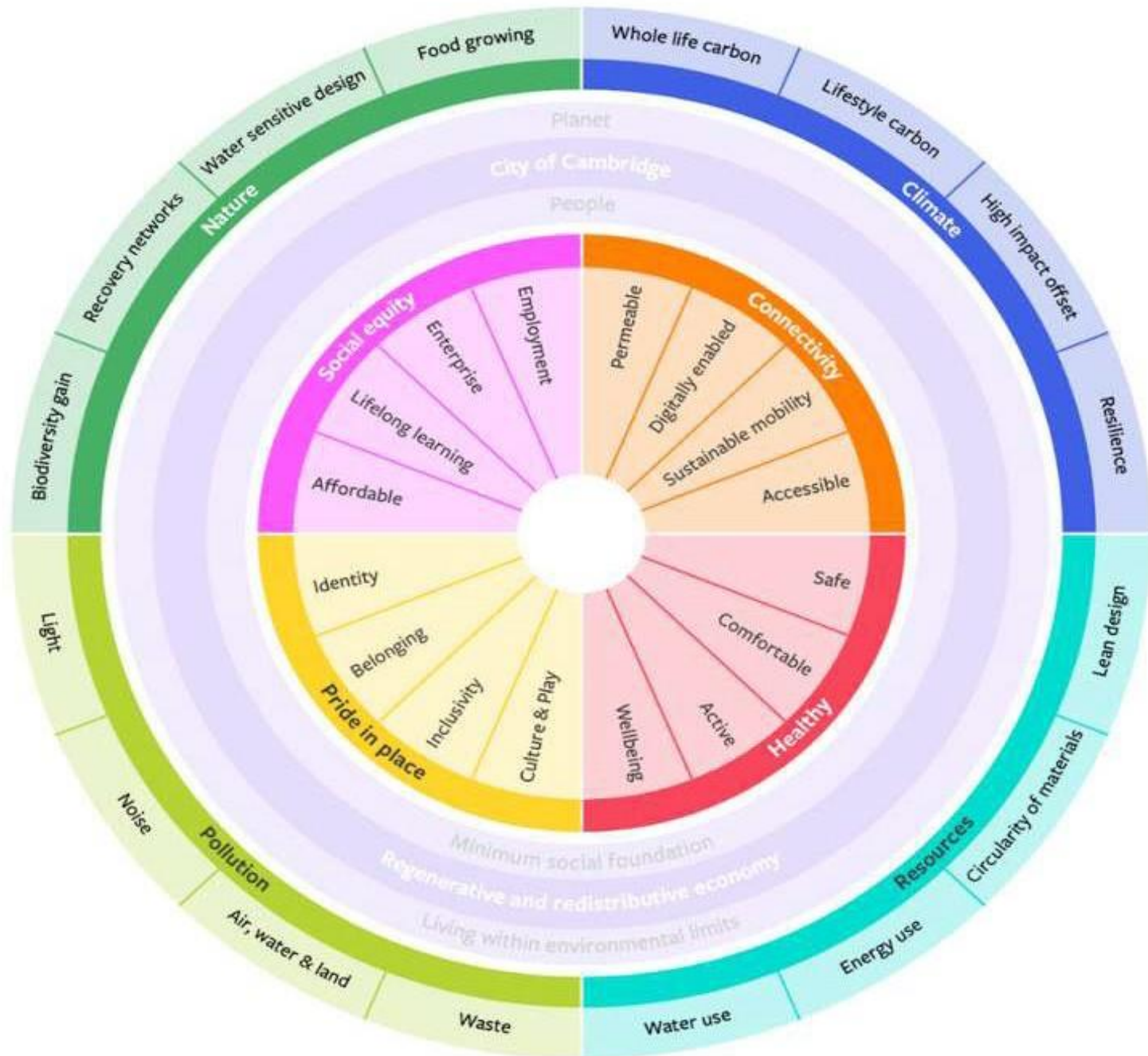
Support the **health, happiness and wellbeing** of the people who will live, work and spend time here



Be an **integral new quarter** of Cambridge, taking inspiration from the city, engaging with citizens' present needs and helping shape the future of Greater Cambridge



Be an **exemplar for development** fit for the challenges of the 21st Century, **enabling sustainable lifestyles**, enhancing nature and accelerating the **transition to a net zero carbon world**



The Vision

- To deliver an Electric Vehicle Charging Network that will meet the growing demands of residents, businesses and visitors over the coming years
- The Council and Connected Kerb are working together towards the deployment of circa 600 EV units across the parking portfolio by year eight, with 177 in year one
- To ensure the charging network has capacity for further expansion
- To ensure a renewable energy source for all charge points on City Council land
- Encourage the uptake of electric vehicles through public engagement initiatives
- Educating and influencing are keystones in Connected Kerb's offer to create real modal change in vehicle ownership
- Additionally, Connected Kerb acting as a critical friend for the Operational Hub, EV fleet solution, EV car club



The procurement was for a Contractor to lead and work in partnership on the implementation and operation of an EV charging infrastructure network within the Council car parks portfolio



The Contract is for an initial 15 years with up to 10 years extensions based on 5 years increments. Total duration to a maximum of 25 years



Fully funded model = NO CAPEX or OPEX & Council will retain parking rental income on car park spaces and once utilisation usage reaches to 25% a 3.5% Gross Revenue share income across all chargers.

Thank you for listening

Any questions?

