

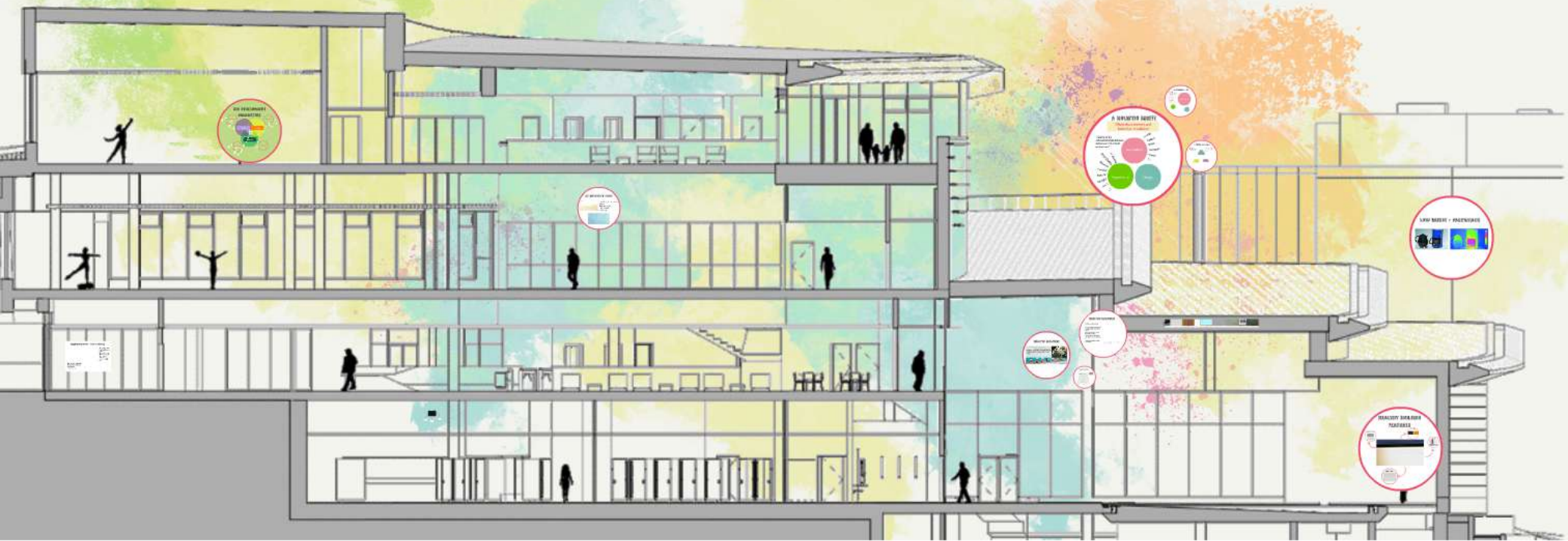
DELIVERING SUSTAINABLE ENERGY EFFICIENT PUBLIC BUILDINGS



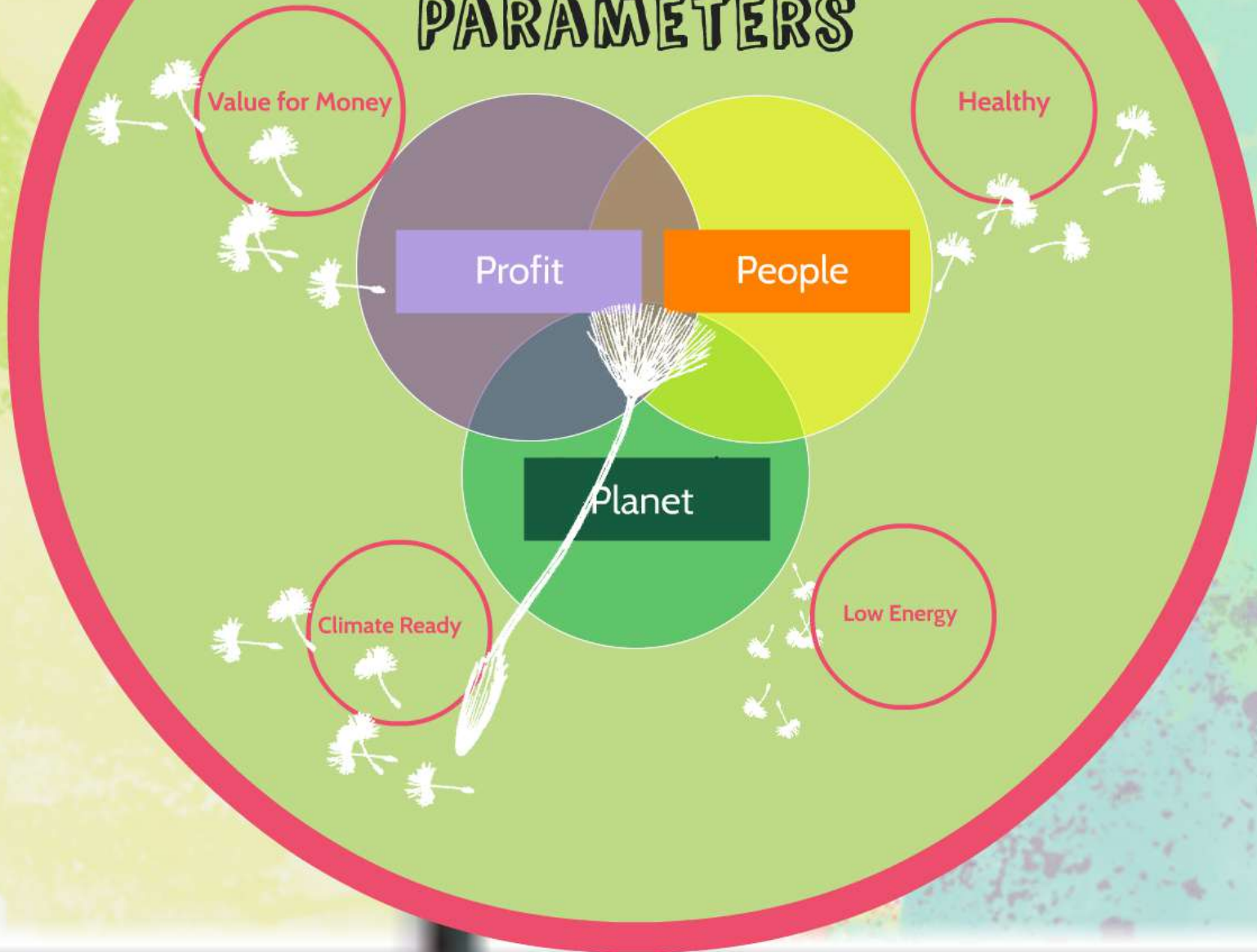
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DELIVERING SUSTAINABLE ENERGY EFFICIENT PUBLIC BUILDINGS



ECC DEVELOPMENT PARAMETERS



ST SIDWELL'S POINT



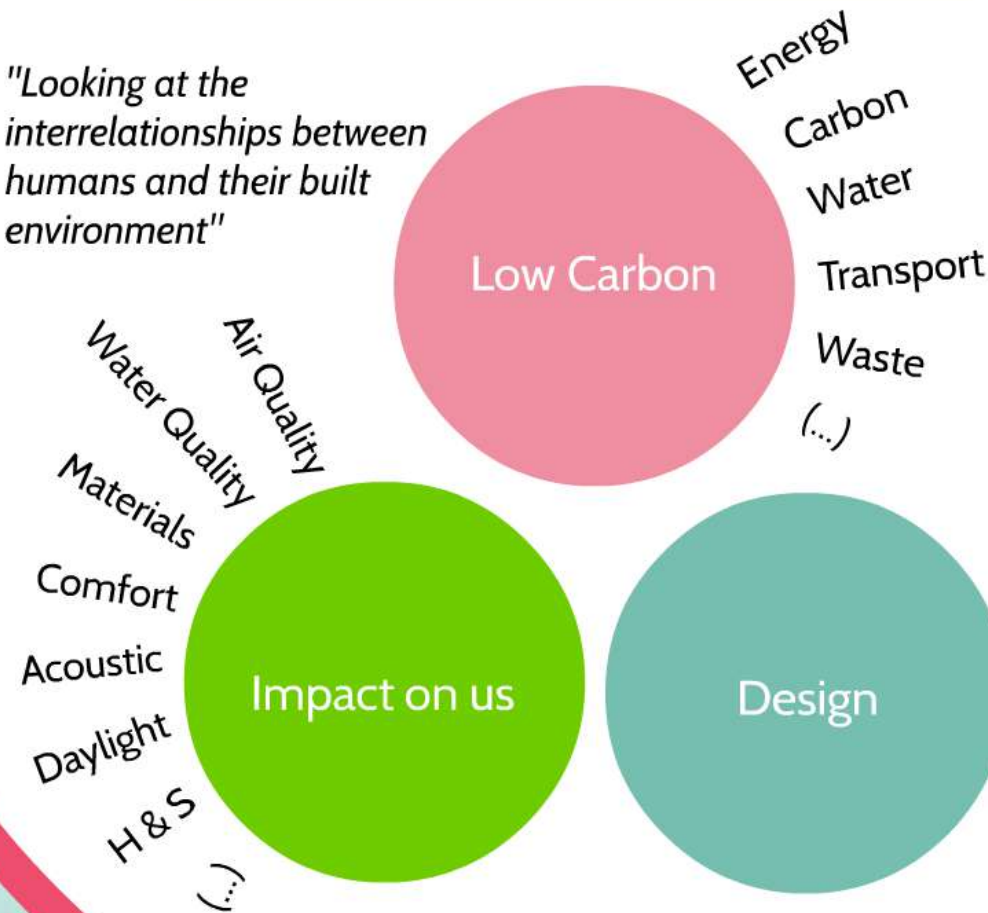
£25 million Leisure Centre
3 Pools
150 station gym
Fitness studios
Rooftop spa



A HOLISTIC BRIEF!

Often disconnected and
looked at in isolation

"Looking at the
interrelationships between
humans and their built
environment"



A HOLIST

"Looking at the
interrelationships between
humans and their built
environment"



A HOLISTIC BRIEF!

"Looking at the interrelationships between humans and their built environment"

**Tunnel
Vision
creates
imbalance...**

Low Carbon

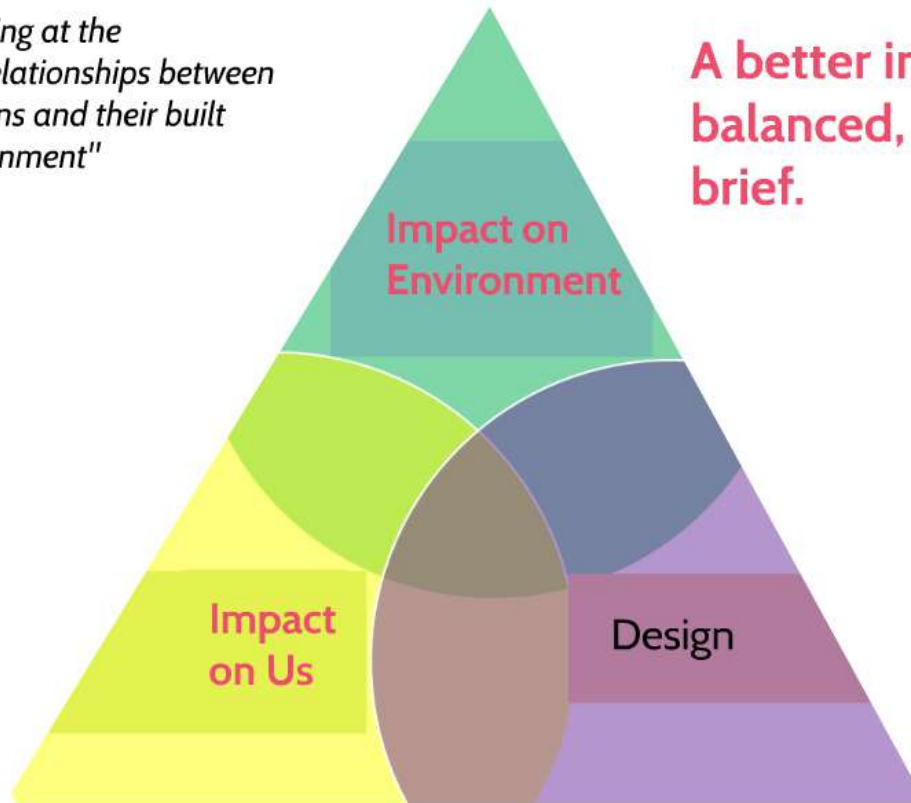
H&S

Design

A HOLISTIC BRIEF!

"Looking at the interrelationships between humans and their built environment"

A better informed, balanced, holistic brief.



HEALTHY BUILDINGS



During a 45 minutes swimming lesson a child swallows about a pint of pool water



HEALTHY BUILDINGS

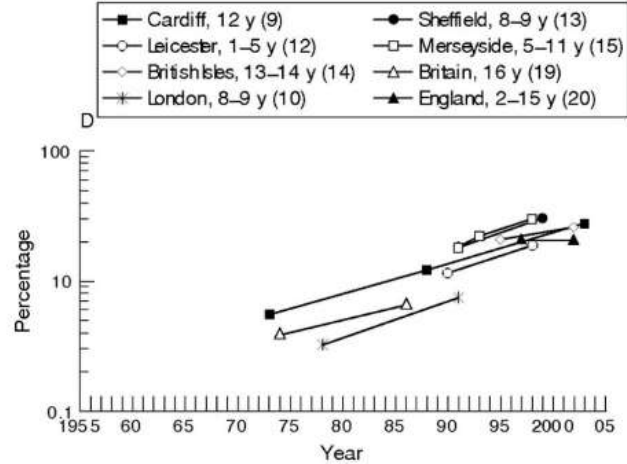
Asthma – UK trends

The UK has the highest prevalence rates of asthma symptoms among children worldwide.

Medical research in the UK suggests links to pool water quality

On average there are three children with asthma in every classroom in the UK.

Asthma attacks hospitalise someone every 8 minutes



50 years of asthma: UK trends from 1955 to 2004
(R.Anderson, 2006)

HEALTHY BUILDINGS

What makes a healthy building?

Daylight ? BREEAM uses daylight factor calculations to assess health benefits



Low VOC ? BREEAM <300 µg /m3
Well Building <500 µg /m3



Germany 200-300 µg /m3 'normal'



SBM 2015 <100 µg /m3



“air with no known contaminants at harmful concentrations” (CIBSE)

What is a non-harmful concentration for a carcinogenic, mutagenic or reprotoxic agent?

HEALTHY BUILDING FEATURES

ULTRA FILTRATION



EMR FREE



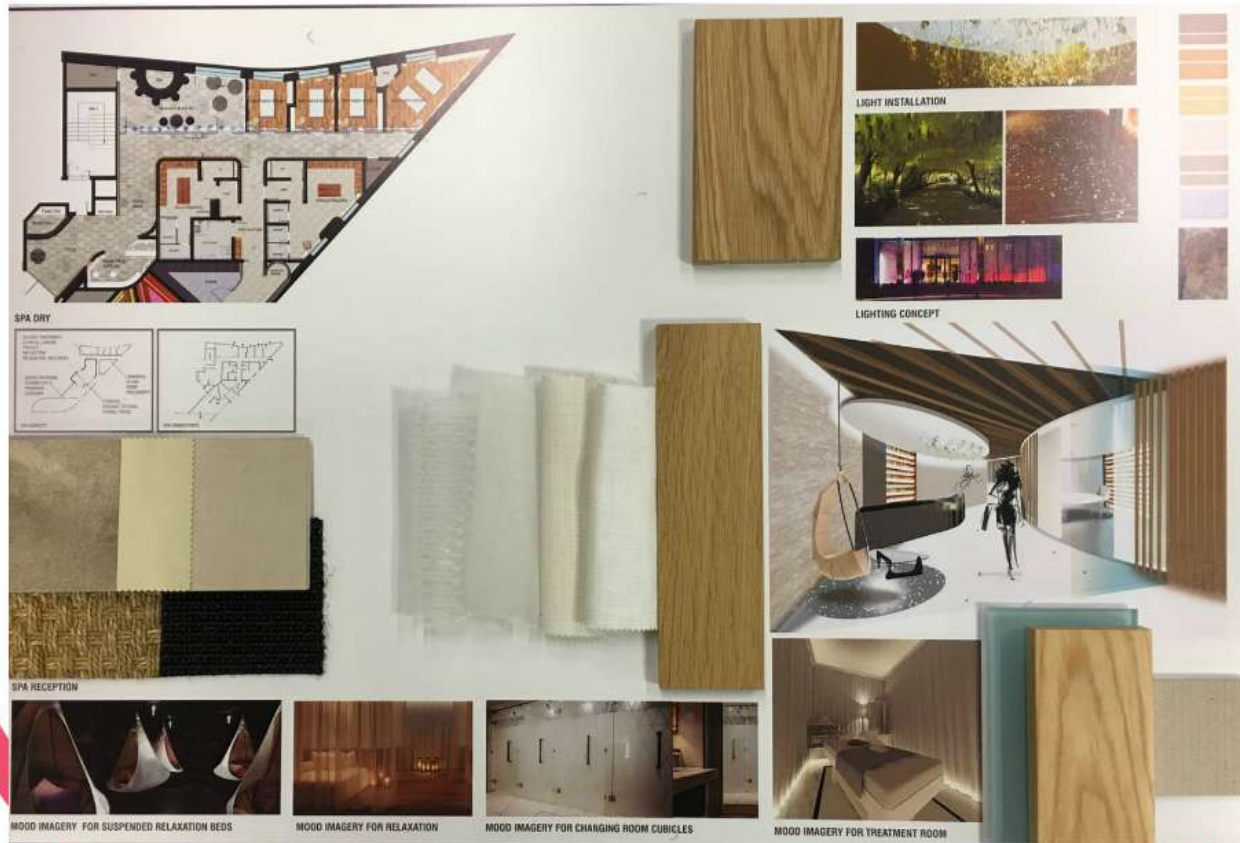
FULL SPECTRUM
DAYLIGHTING



LOW VOCs



LOW VOCS



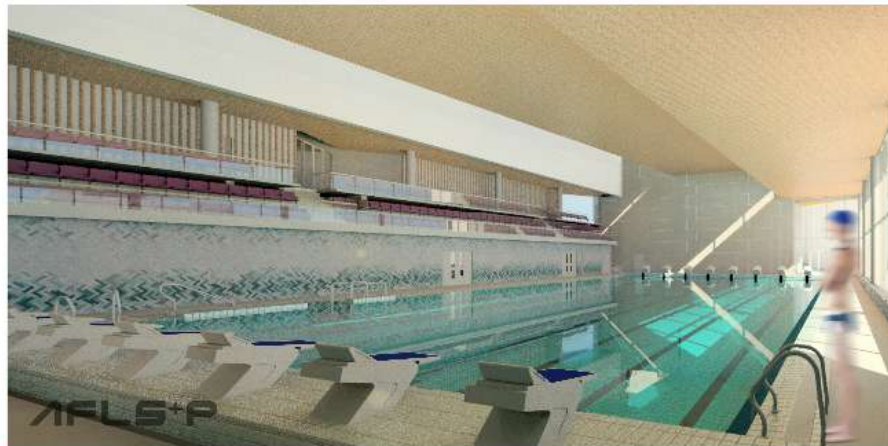
FULL SPECTRUM DAYLIGHTING



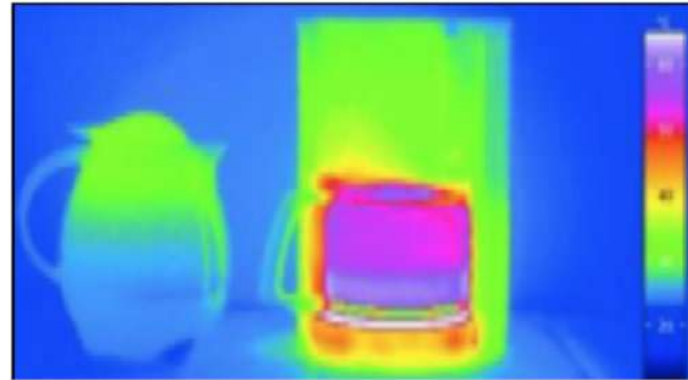
EMR FREE



ULTRA FILTRATION



LOW ENERGY - PASSIVHAUS



PASSIVHAUS POOL - KEY ELEMENTS



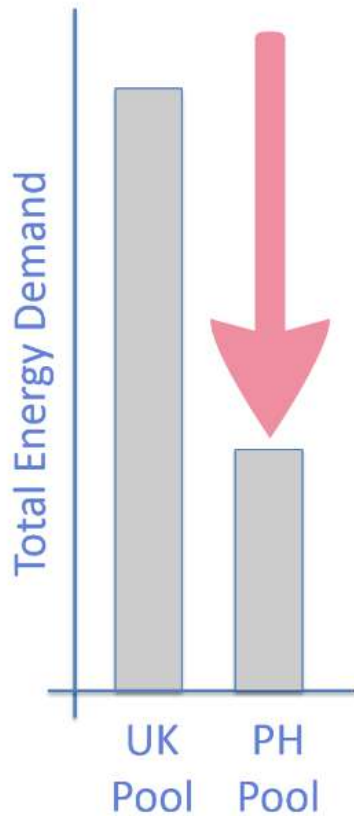
- High Performance Passivhaus building fabric
- High performance windows and doors
- High levels of airtightness
- Compact building form

- Optimum solar orientation
- Highly efficient ventilation heat recovery
- Internal zoning

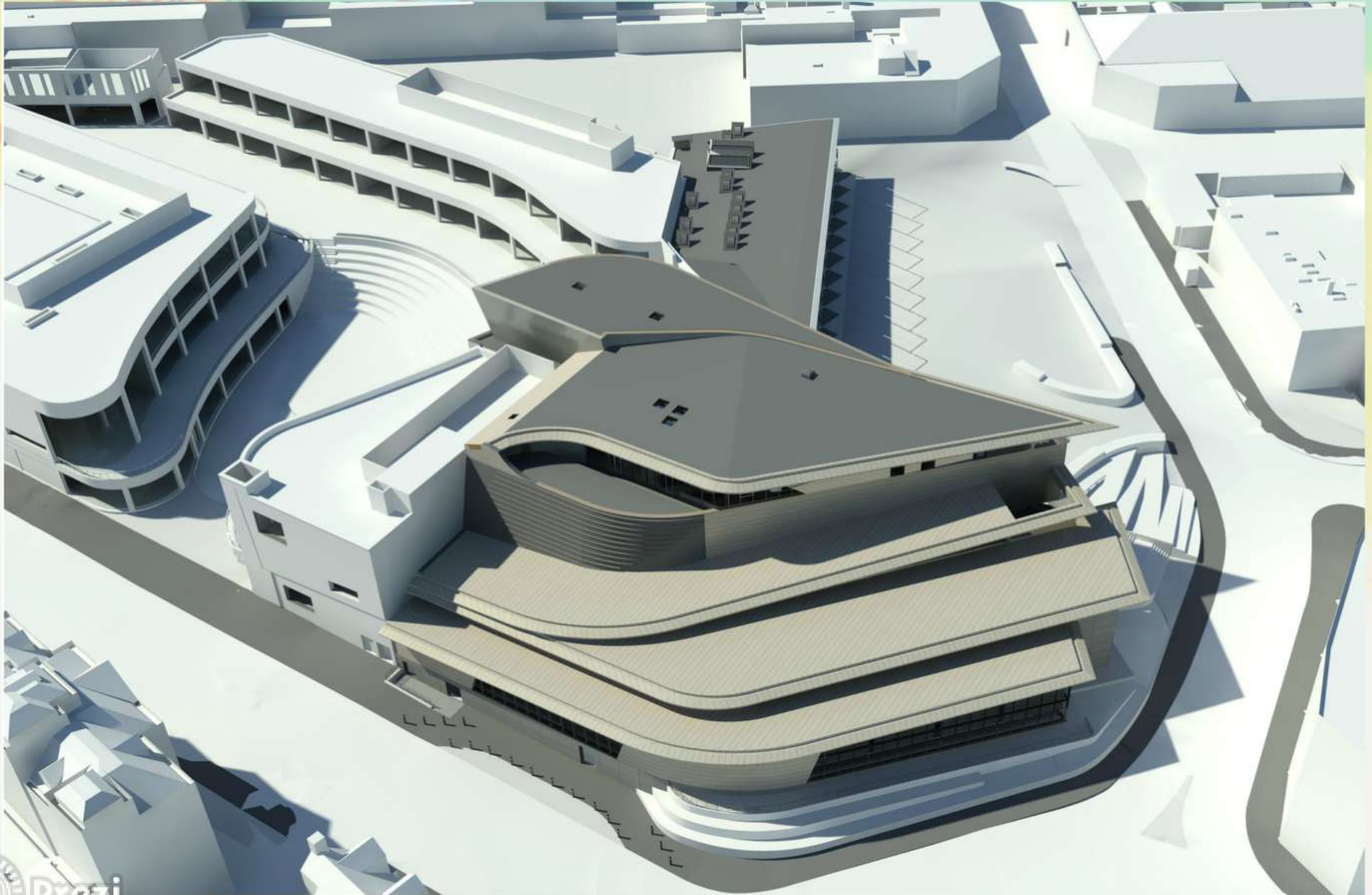


PASSIVHAUS POOL = COST EFFECTIVE

- 75% energy savings - £185,000 per annum
- Higher relative humidity
- Reduced evaporation rates and reduced ventilation rates
- Economic ventilation/ducting
- Reduced electrical energy demand



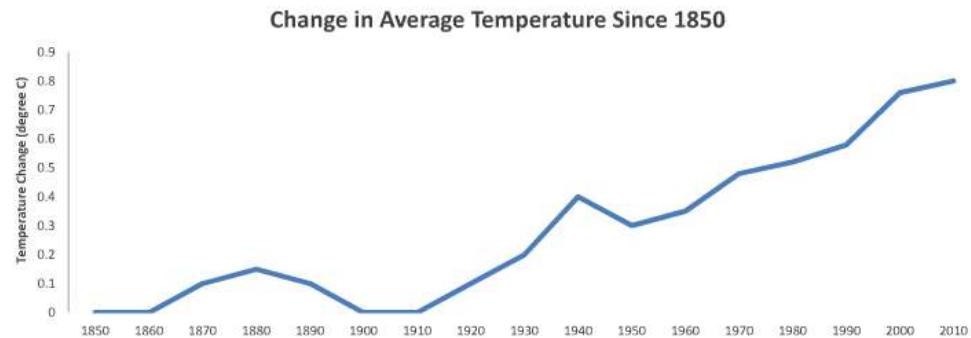
CLIMATE READY PUBLIC BUILDINGS



CLIMATE CHANGE

What is predicted in the UK?

- Since 1960's the average temperature in UK has risen
- Average summer temperature increase of 4-6 degree by 2100
- Increase in UV radiation
- Events of extreme rainfall and flooding have become more frequent and this trend is predicted to increase

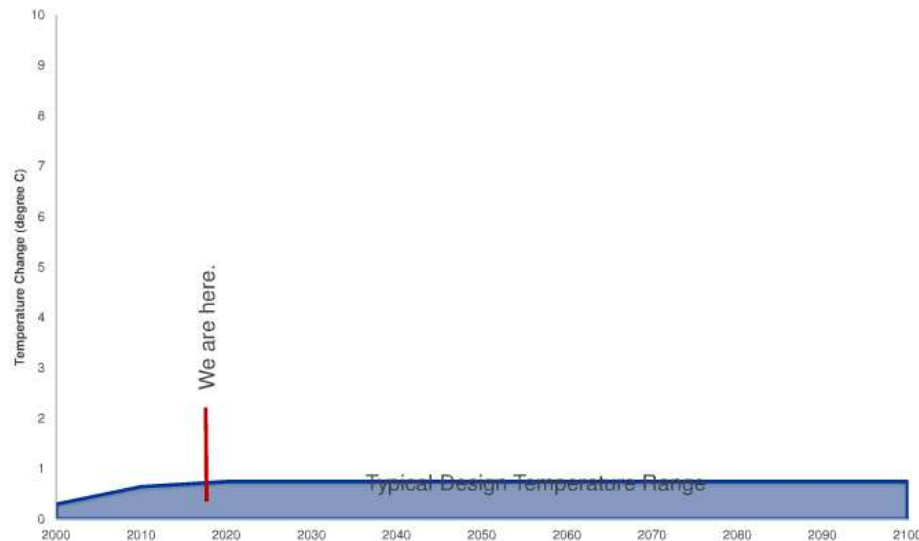


CLIMATE CHANGE

What about climate change?

Building designers typically use weather data that is based on past experience to predict the future performance of a building.

The building is then designed to maintain optimum comfort and (*ideally*) to use minimal energy over the lifetime of the building.

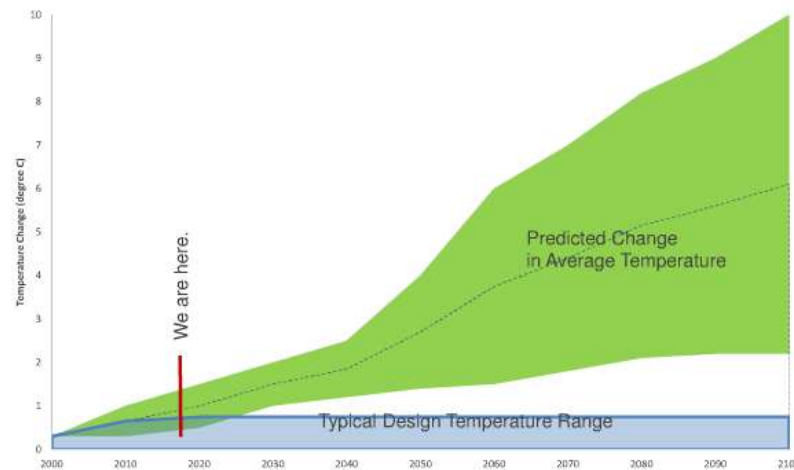


Ignoring the evidence that the climate is changing.

CLIMATE CHANGE

What about climate change?

Building designers typically use weather data that is based on past experience to predict the future performance of a building.



ECC uses probabilistic future weather data from Exeter University's *Prometheus Project* which were derived from the latest climate projections for the UK (UKCP09).

The projections are probabilistic in nature instead of deterministic so as to allow users to assess the level of risk.

OTHER ECC

PUBLIC BUILDINGS



2010
Prezi

**OTHER EGG
PUBLIC BUILDINGS**



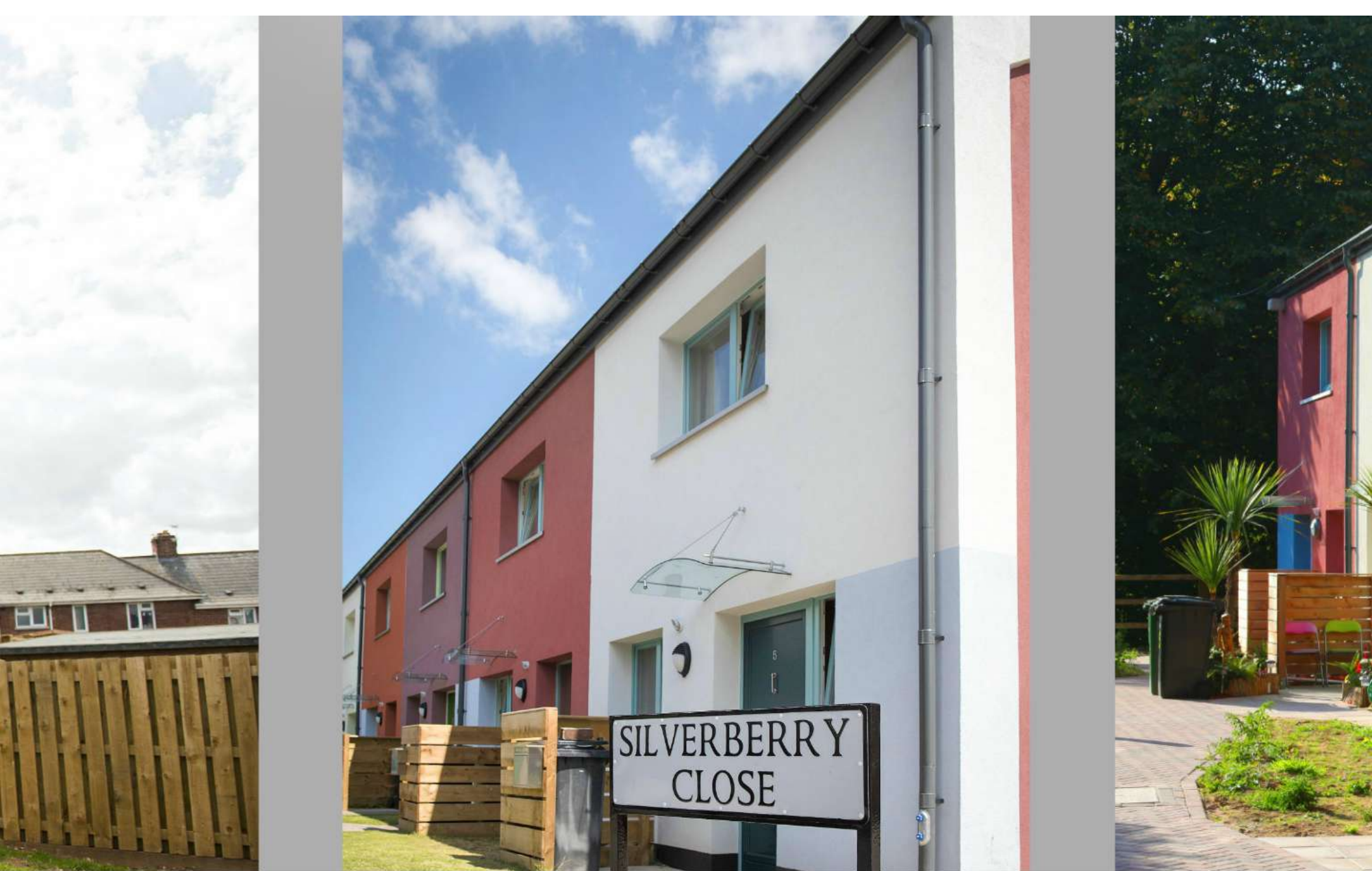
2010 - Rowan House



2011 - Knights Place



2015 - Barberry Close



2015 - Silverberry Close



2015 - Reed Walk



2017 - Chester Long Court



2019 - New Extra Care Scheme



2017 onwards - Development Company





2020 - St Sidwell's Point

DELIVERING SUSTAINABLE ENERGY EFFICIENT PUBLIC BUILDINGS

