

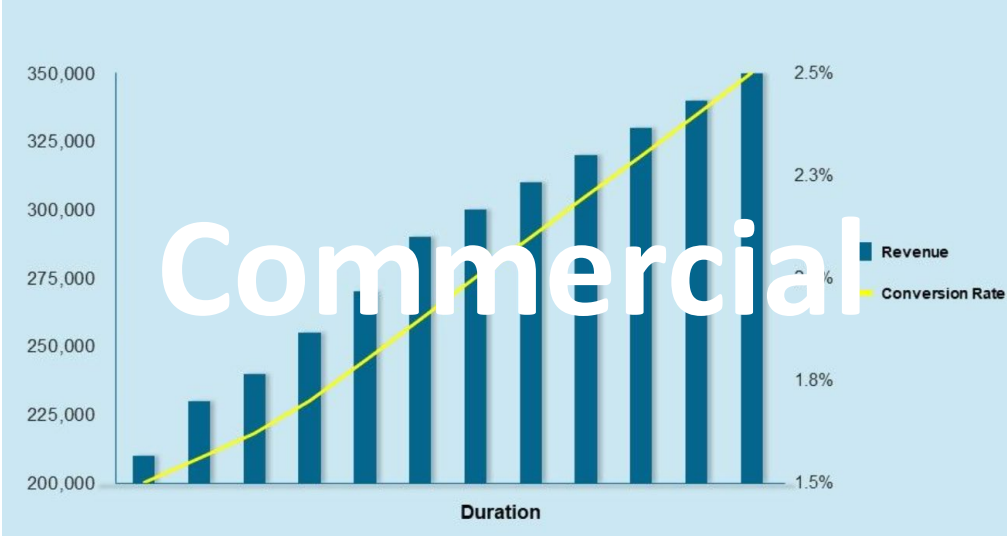
An indoor swimming pool with a wooden beam ceiling and large windows. The pool is surrounded by a tiled deck and has a glass railing on the left side. The text "SPACE & PLACE" is overlaid in the center of the image.

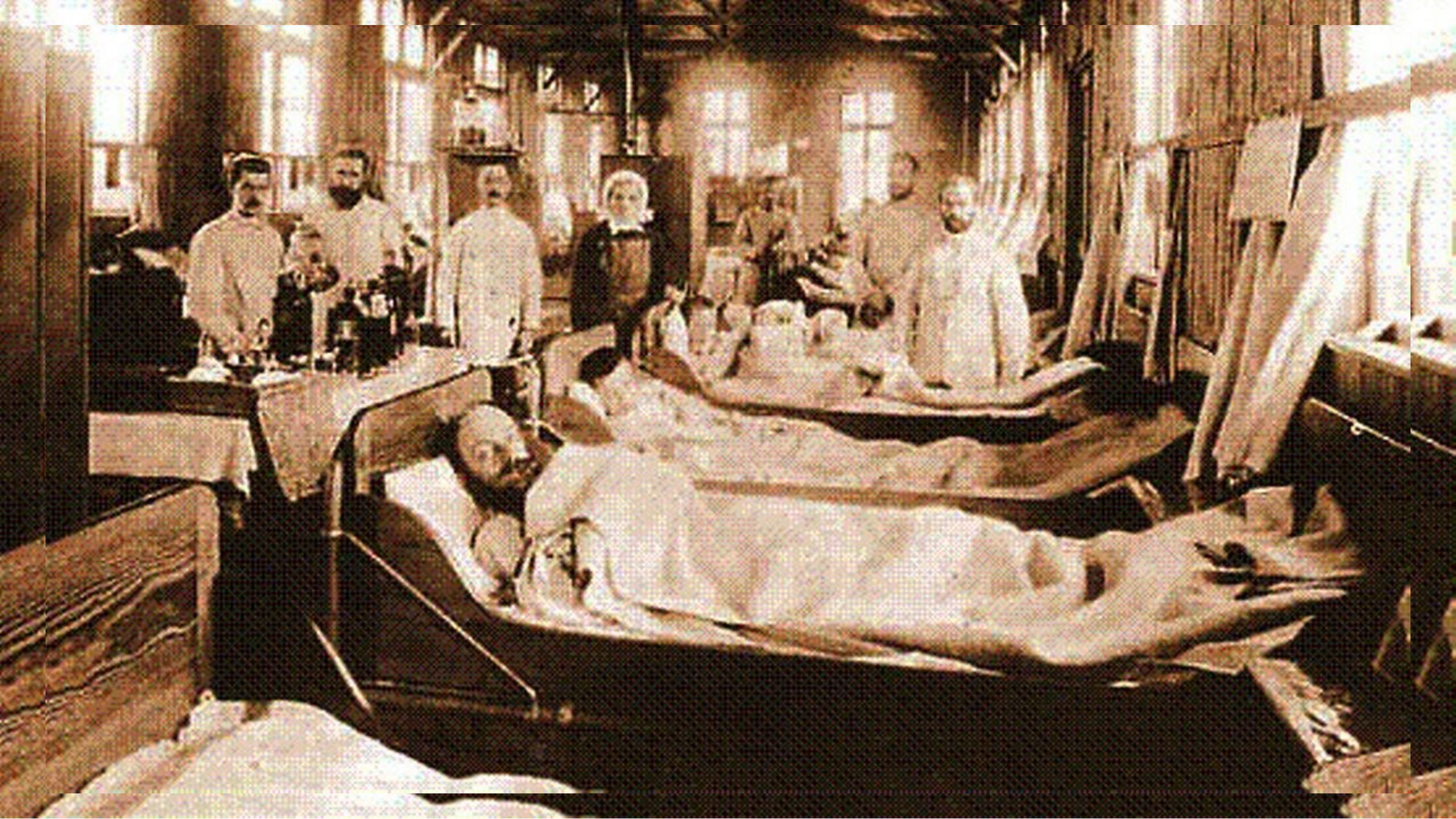
SPACE & PLACE

Keith Ashton
Jan 25

Sustainable buildings for social outcomes

Environmental innovation in facilities design









8719-056260208-082379

Good luck for your
1 x Sat draw
on Sat 14 Nov 15
2 plays x £2.00 for 1 draw
£4.00



Your numbers

A	10	17	22	24	41	45
B	07	20	27	35	51	53



Local Government Act 1972
CHAPTER 70

LONDON
HER MAJESTY'S STATIONERY OFFICE
£2.55 net



Local Government
CHAPTER 7
1972

DEVOLUTION

LONDON
HER MAJESTY'S STATIONERY OFFICE
£2.55 net



**A POLICY FOR
THE ARTS**
THE FIRST STEPS

*Presented to Parliament by the Prime Minister
by Command of Her Majesty
February 1965*

.992
8p

mand. 2601

LONDON
HER MAJESTY'S STATIONERY OFFICE
PRICE 1s. 6d. NET

We have a systems designed to fulfil
funding and procurement criteria

Rather than solutions defined by
your community

GROWTH GROWTH GROWTH



Serious
Leisure



Casual
Leisure



Project
based
Leisure

Outcome based thinking

VS

Bottom line thinking

SROI
Social Return On
Investment

$$= \frac{\left(\begin{array}{c} \text{Tangible} \\ \text{Value to the Community (TV)} \end{array} + \begin{array}{c} \text{Intangible} \\ \text{Value to the Community (IV)} \end{array} \right)}{\left(\begin{array}{c} \text{Clock} \\ \text{Total} \end{array} + \begin{array}{c} \text{Dollar} \\ \text{Total} \end{array} \right)}$$



SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD

1 NO POVERTY

2 ZERO HUNGER

3 GOOD HEALTH AND WELL-BEING

4 QUALITY EDUCATION

5 GENDER EQUALITY

6 CLEAN WATER AND SANITATION

7 AFFORDABLE AND CLEAN ENERGY

8 DECENT WORK AND ECONOMIC GROWTH

9 INDUSTRY, INNOVATION AND INFRASTRUCTURE

10 REDUCED INEQUALITIES

11 SUSTAINABLE CITIES AND COMMUNITIES

12 RESPONSIBLE CONSUMPTION AND PRODUCTION

13 CLIMATE ACTION

14 LIFE BELOW WATER

15 LIFE ON LAND

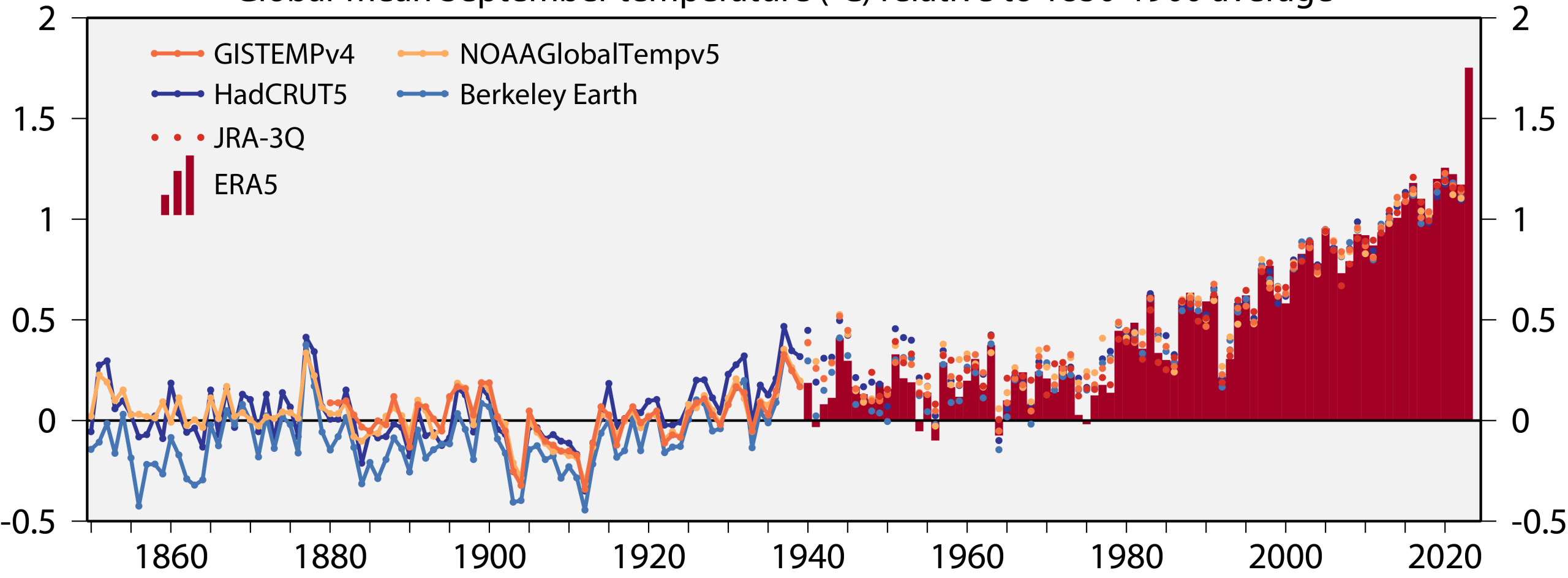
16 PEACE, JUSTICE AND STRONG INSTITUTIONS

17 PARTNERSHIPS FOR THE GOALS


SUSTAINABLE DEVELOPMENT GOALS

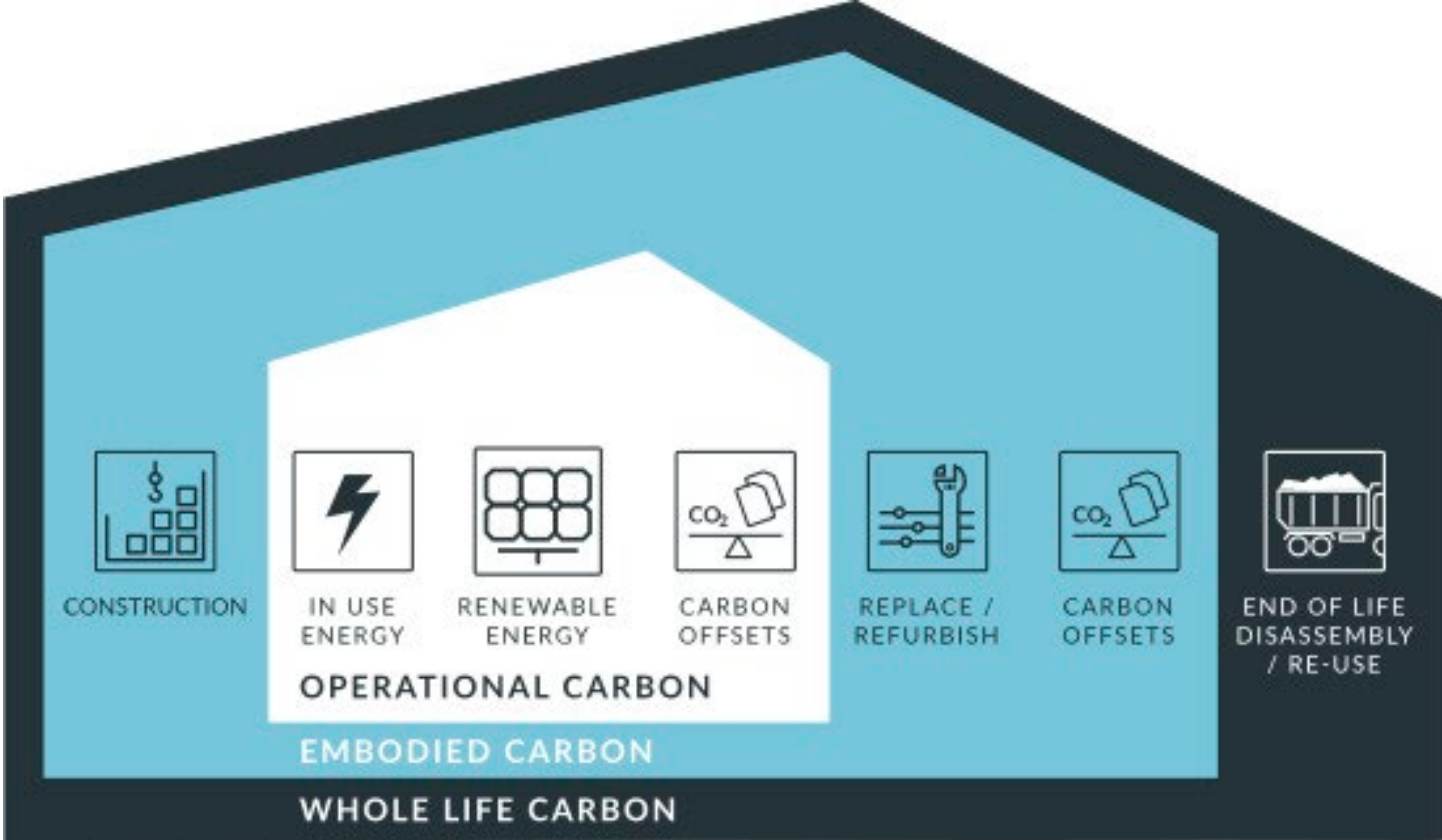
Social Environment Economic Measurements

Global-mean September temperature (°C) relative to 1850-1900 average





What is net-zero carbon development?



An aerial photograph of a dense evergreen forest, likely spruce or fir, with a rich green color palette. The trees are packed closely together, creating a textured, layered appearance. The lighting is bright, highlighting the tops of the trees and creating a sense of depth. Centered over the forest is the text "£60,000.00 per Leisure Centre" in a clean, white, sans-serif font.

£60,000.00 per Leisure Centre



Flame Retardant Flame Retardant Flame Retardant Flame Retardant Flame Retardant Flame Retardant Flame Retardant Flame Retardant Flame Retardant Flame Retardant

THIS IS NOT AN ORDINARY PROJECT. BUT IT NEEDS TO BE.

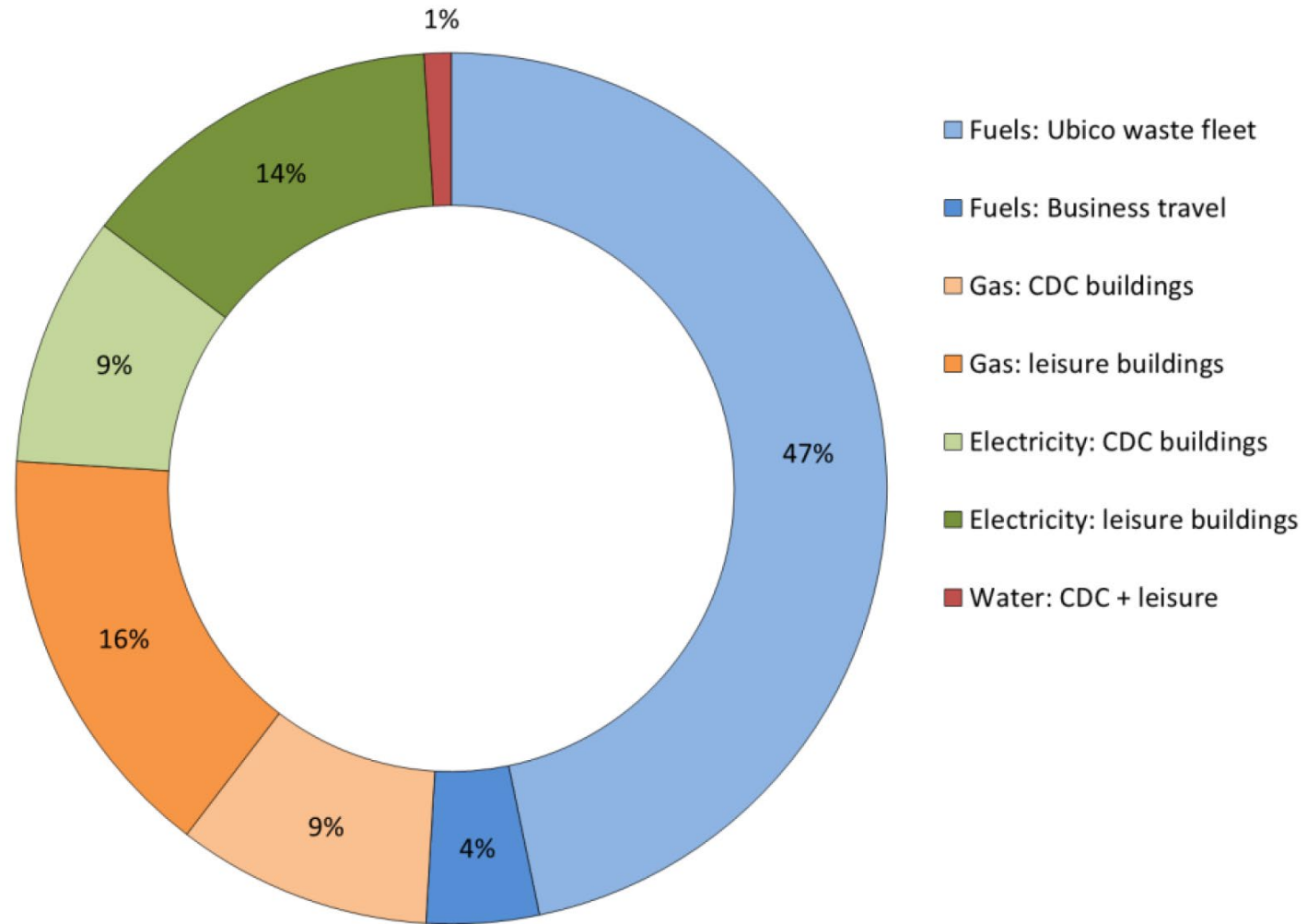
The time is now.

Together we can be extraordinary. Together we can build a better world.

#BuildingChange | #Entopia | @CCSL_Cambridge

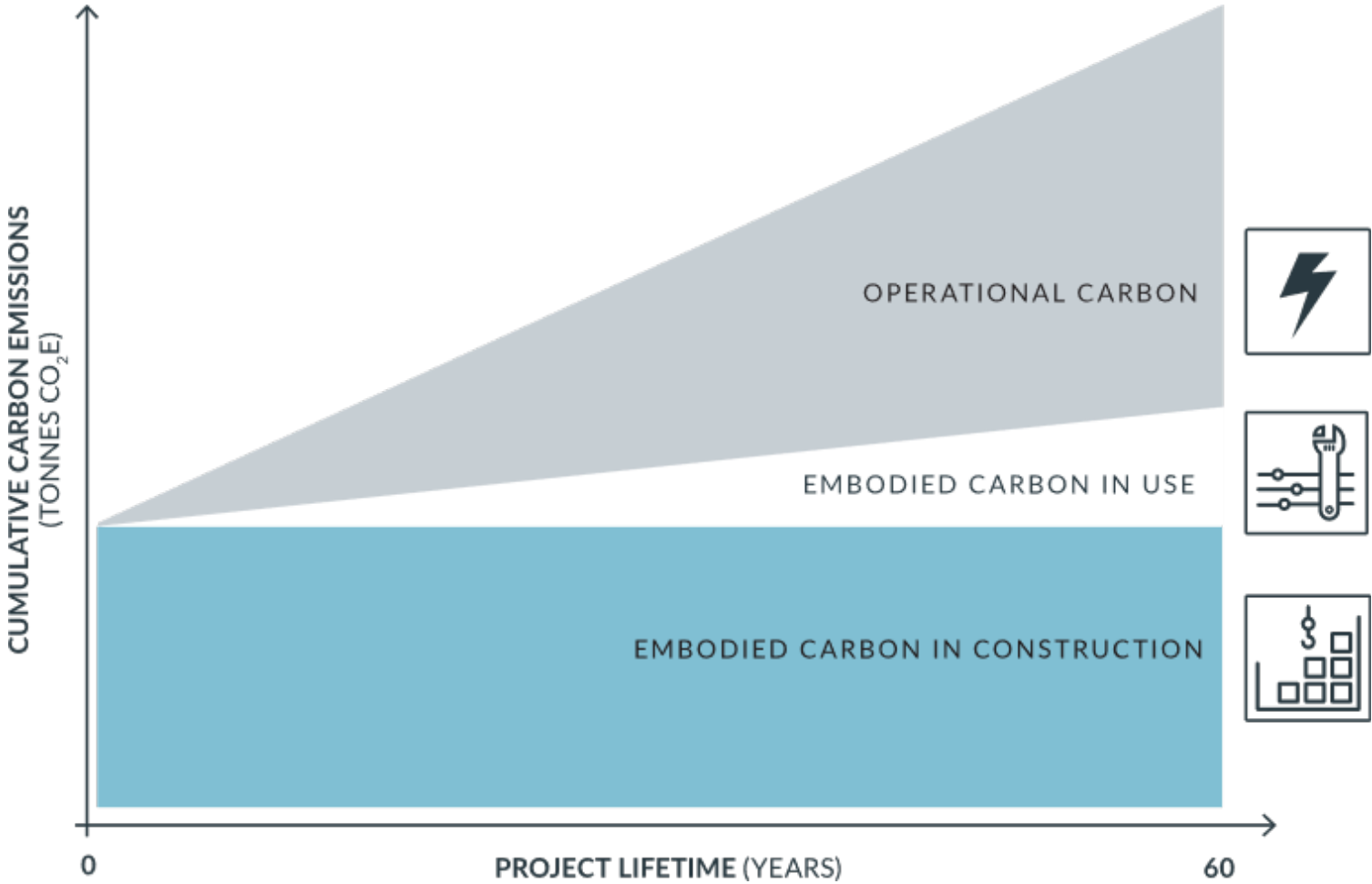


Cotswold District Council corporate emissions by source 2019/20



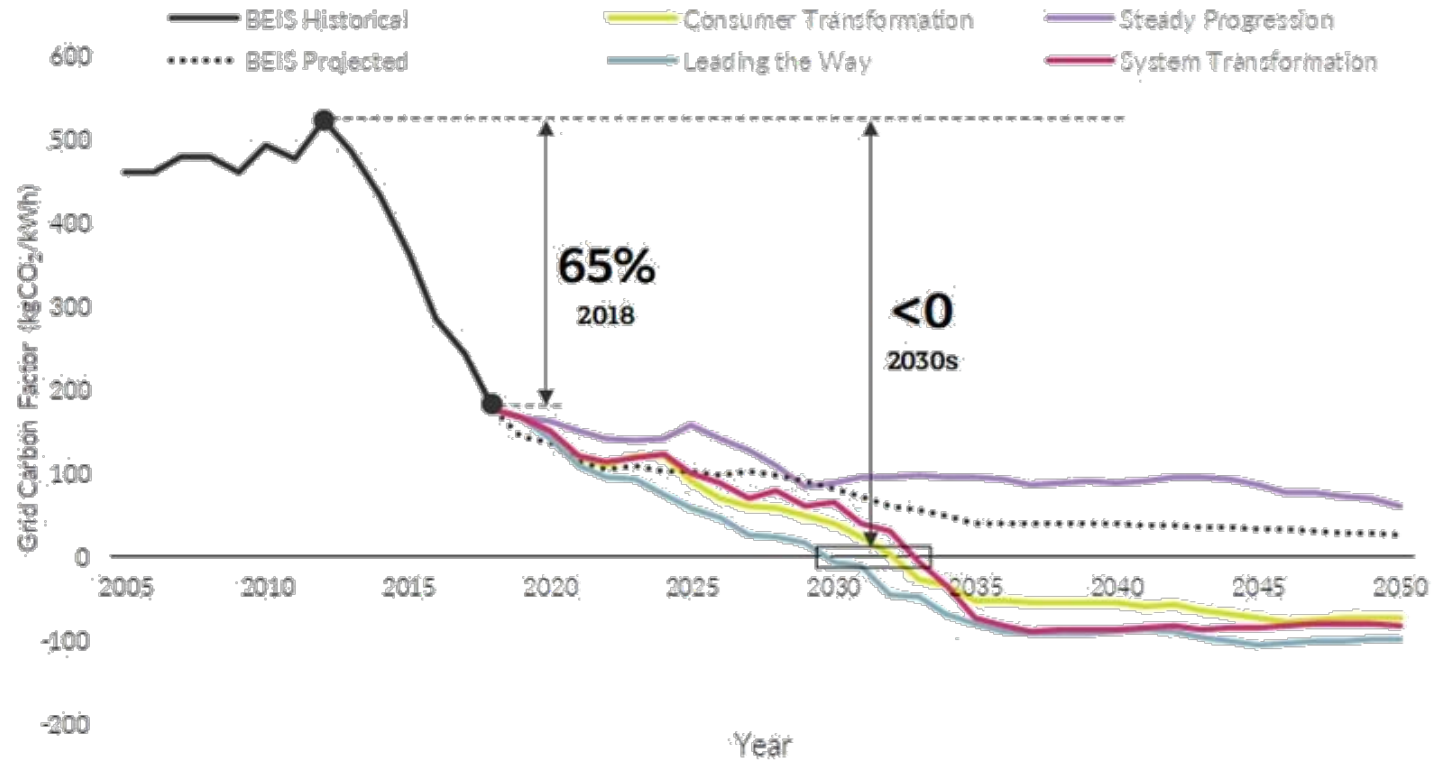
Net Zero Carbon.
Whole life assessment.

Cumulative carbon emissions.
Typical 60-year whole life assessment.





Grid decarbonisation.



2025 : UK
GAS BOILER BAN

2030 : IPCC
CARBON NEUTRAL TARGET TO
ACHIEVE MAXIMUM +1.5°C.



Department for
Business, Energy
& Industrial Strategy

65 % reduction in carbon emissions
since 2012 to 2018

0.05 kgCO₂/kWh likely by 2035



kWh



14

B99D

240 V

40A MAX

50 c/s

S 200·16

WATTHOUR METER

250 revs/kWh

IPH 2W

SANGAMO WESTON LTD.
ENFIELD
MIDDX

F.L.
S ←

F.L.
→ F

FLOTON®



EV CHARGING ONLY



NO PARKING

EV CHARGING ONLY



NO PARKING

Reduce energy load

SUSTAINABLE DEVELOPMENT

UN Development Goals



Development Framework



Define Sustainable Development Goals

1. ENERGY PERFORMANCE
2. NET ZERO CARBON
3. GOOD HEALTH AND WELLBEING
4. SUSTAINABLE WATER USAGE
5. ECOLOGY AND BIODIVERSITY
6. CONNECTIVITY AND TRANSPORT
7. SUSTAINABLE COMMUNITIES
8. SOCIAL VALUE
9. OTHER ?

Define Accreditations and/or Assessments



Minimum Targets with certification

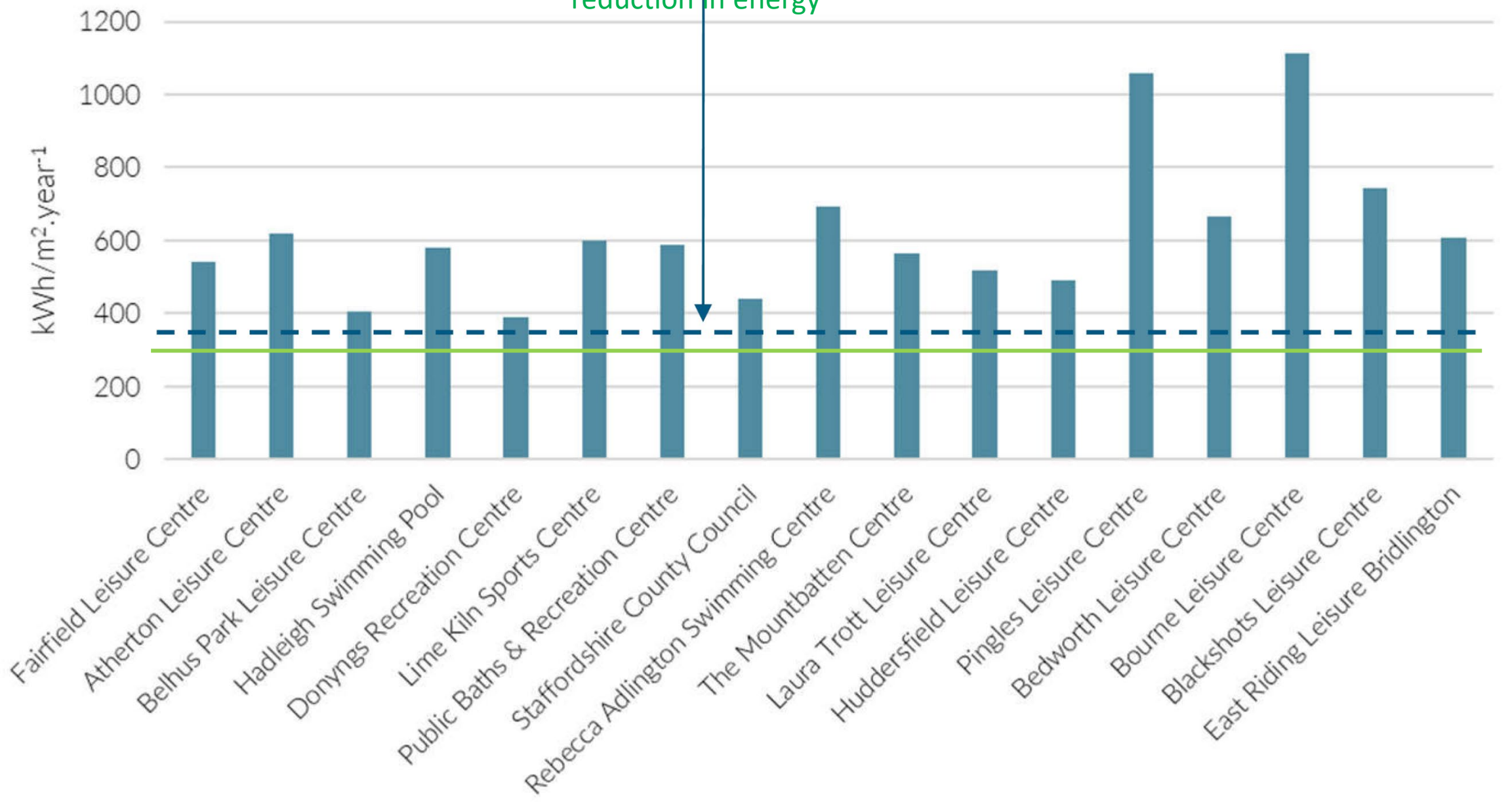
	Min CO2 saving target	Capex uplift	On site renewables
BREEAM Very Good	n/a	base	n/a
BREEAM Excellent	25%	7.5% over Breeam VG	n/a
BREEAM Outstanding	40%	No Data	n/a
Passivhaus Classic	Circa 70% (increased saving with off-site renewables)	15% over Breeam VG	n/a (promotion of off-site renewables)
Passivhaus Plus	100%	No Data	≥ 60kWh/m ² .yr
Passivhaus Premium	Above 100%	No Data	Renewable Energy +ve generator
N.B. Water consumption	Estimated 50% as a consequence of PH certification		

Carbon / Energy Limits – The Future



	Commercial Residential		Culture & Entertainment			Data Centres		Healthcare	Higher Ed.	Homes	Hotels	Offices (either /GIA or /NIA metrics may be used)							
	Student resi.	Care homes	Perfor-mance	-	Archives	Low utilisation	High utilisation		-	Single family homes	Flats	-	General	Call Centres	Trading Floors	Supermarket			
unit	kWh/m ² GIA/yr	kWh/m ² GIA/yr	kWh/m ² GIA/yr	kWh/m ² GIA/yr	kWh/m ² GIA/yr	PUE	PUE		kWh/m ² GIA/yr	kWh/m ² GIA/yr	kWh/m ² GIA/yr	kWh/m ² GIA/yr	kWh/m ² NIA/yr	kWh/m ² GIA/yr	kWh/m ² NIA/yr	kWh/m ² GIA/yr	kWh/m ² NIA/yr	kWh/m ² GIA/yr	
2033	62	124	67	50	5	1.35	1.15	As per NHS-NZ Standard	79	40	38	101	64	80	94	118	109	137	152
2034	60	120	65	48	5	1.34	1.14		76	39	37	98	61	77	90	113	104	130	146
2035	59	117	64	47	5	1.34	1.14		74	39	37	95	59	74	85	107	99	124	140
2036	57	114	62	46	5	1.33	1.13		71	38	37	92	56	70	81	102	94	118	134
2037	55	110	60	44	5	1.32	1.12		68	37	36	89	53	67	77	97	89	112	128
2038	54	107	59	43	5	1.32	1.12		66	37	36	86	51	64	73	92	84	105	122
2039	52	104	57	42	5	1.31	1.11		63	36	36	83	48	60	69	87	79	99	116
2040	50	100	55	40	4	1.3	1.1		60	35	35	80	45	57	64	80	74	93	110
2050	50	100	55	40	4	1.3	1.1		60	35	35	80	45	57	64	80	74	93	110

Passivhaus (Exeter St Sidwells) 76%
reduction in energy



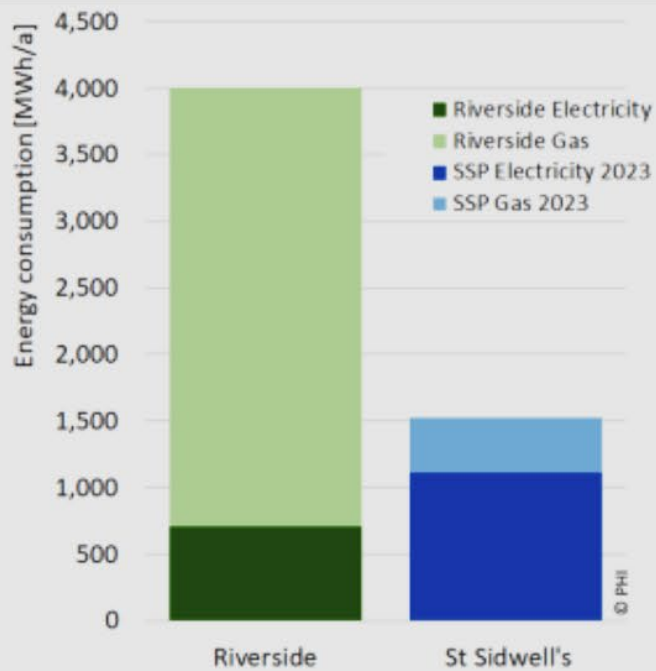


Figure 2: Comparison of annual final energy consumption of Riverside and St Sidwell's Point Leisure Centres.

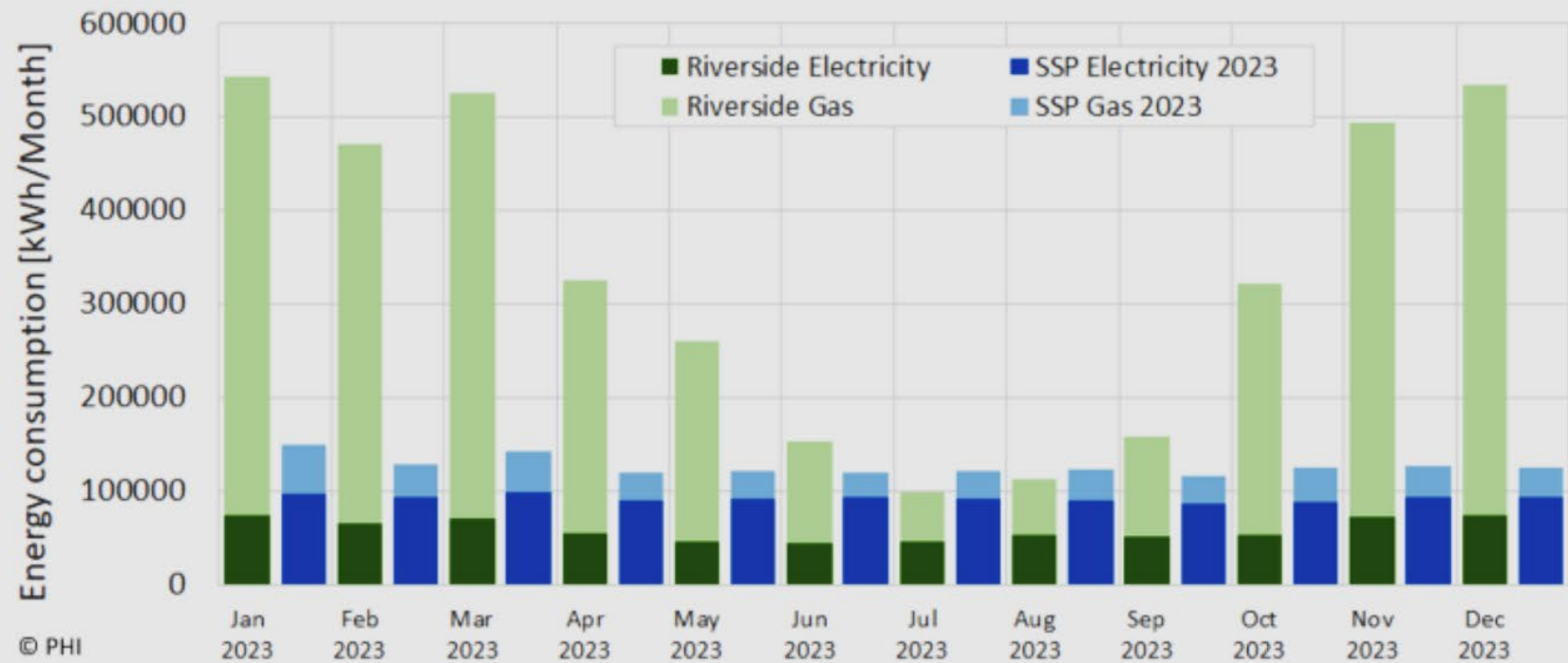


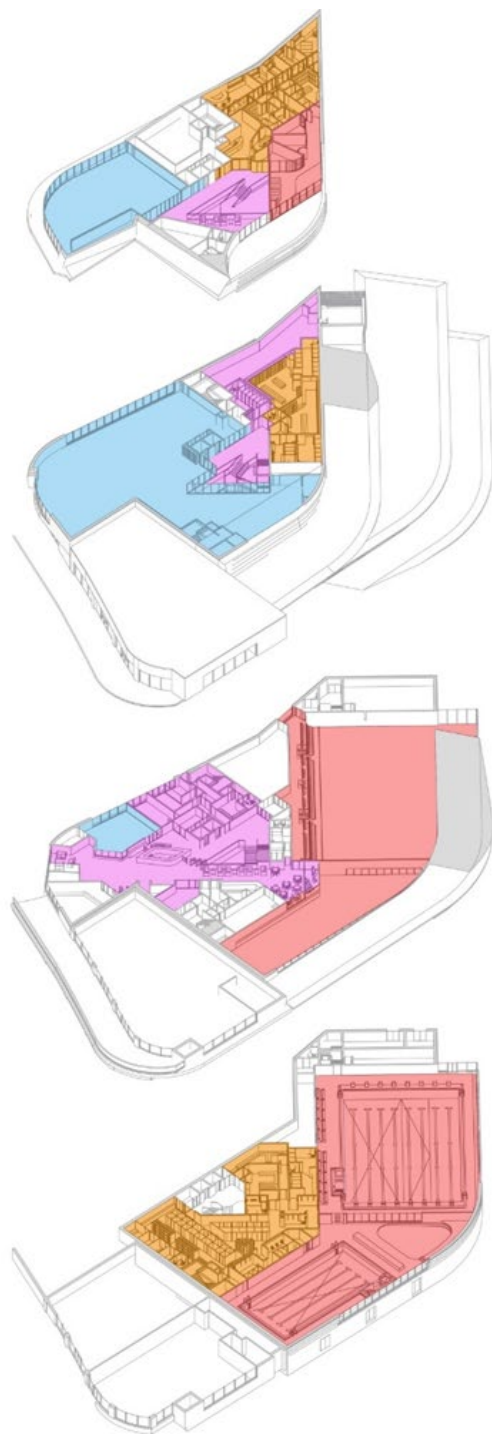
Figure 3: Comparison of monthly final energy consumption of Riverside and St Sidwell's Point Leisure Centres.

The Passivhaus Zoning Concept

- Reduce energy demand through planning
- Thermal zones minimise heat transfer
- Extensive glazing to maximise daylight
- Vertical core natural ventilation

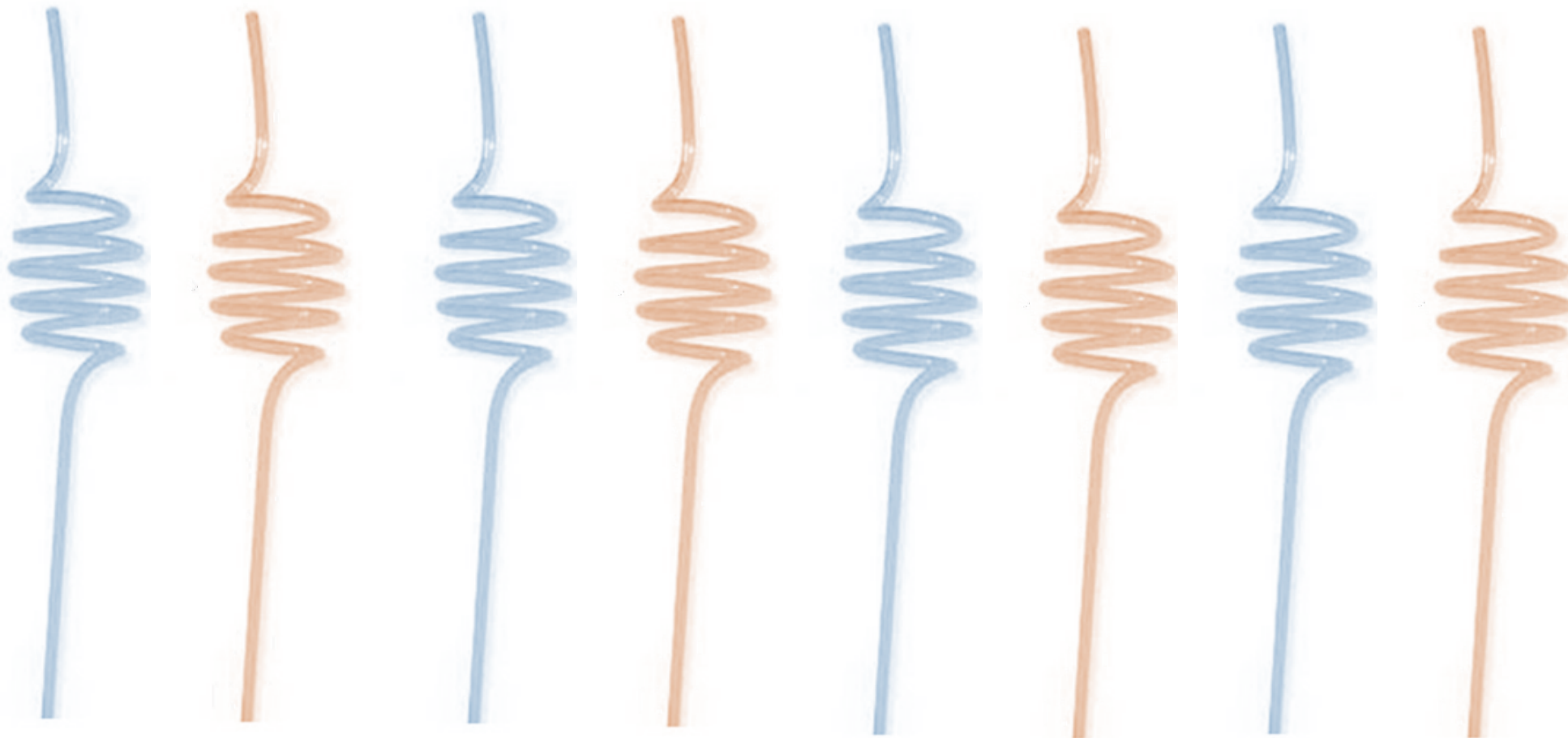
Thermal zoning :

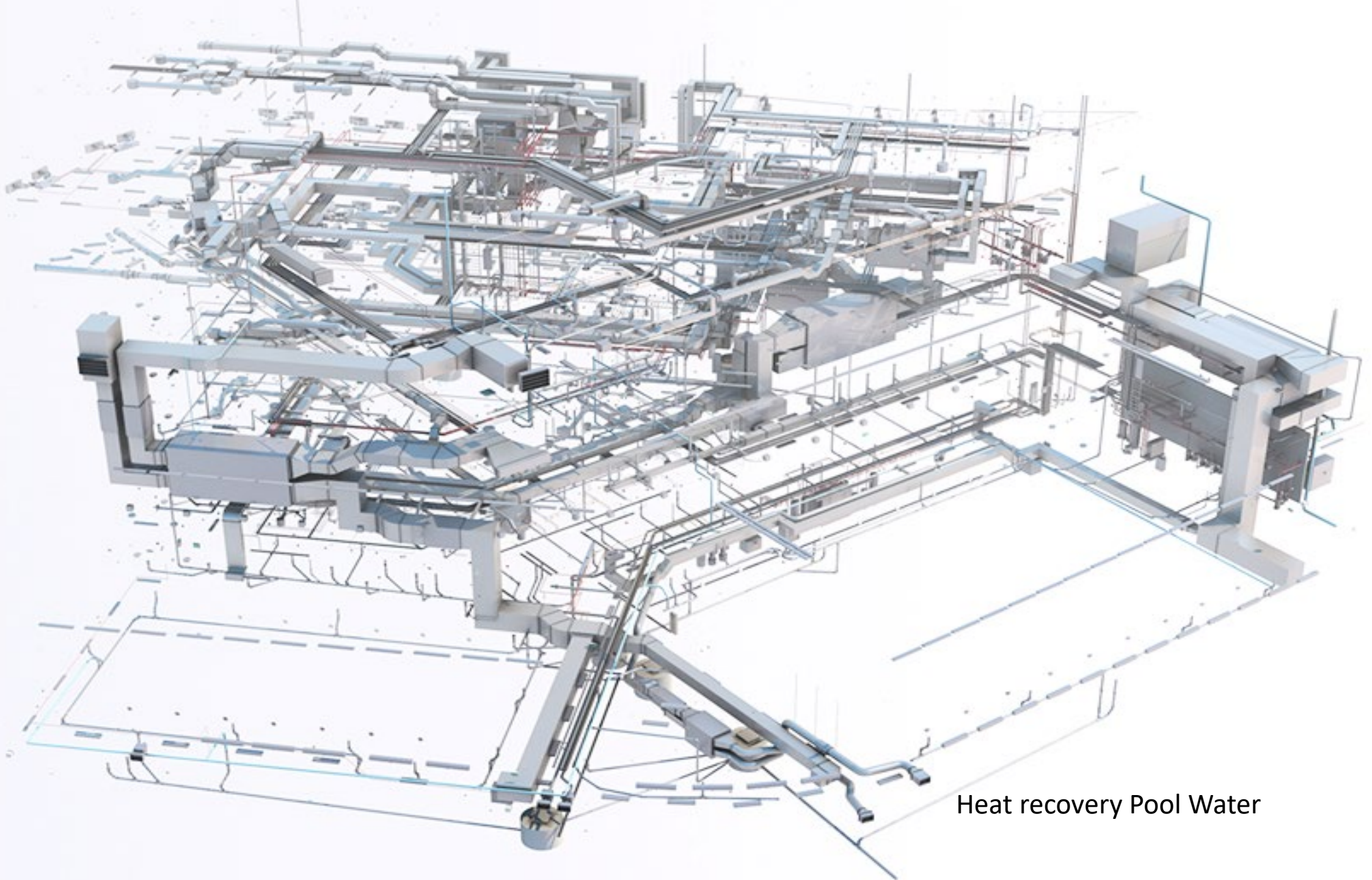
hot
warm
temperate
cooled



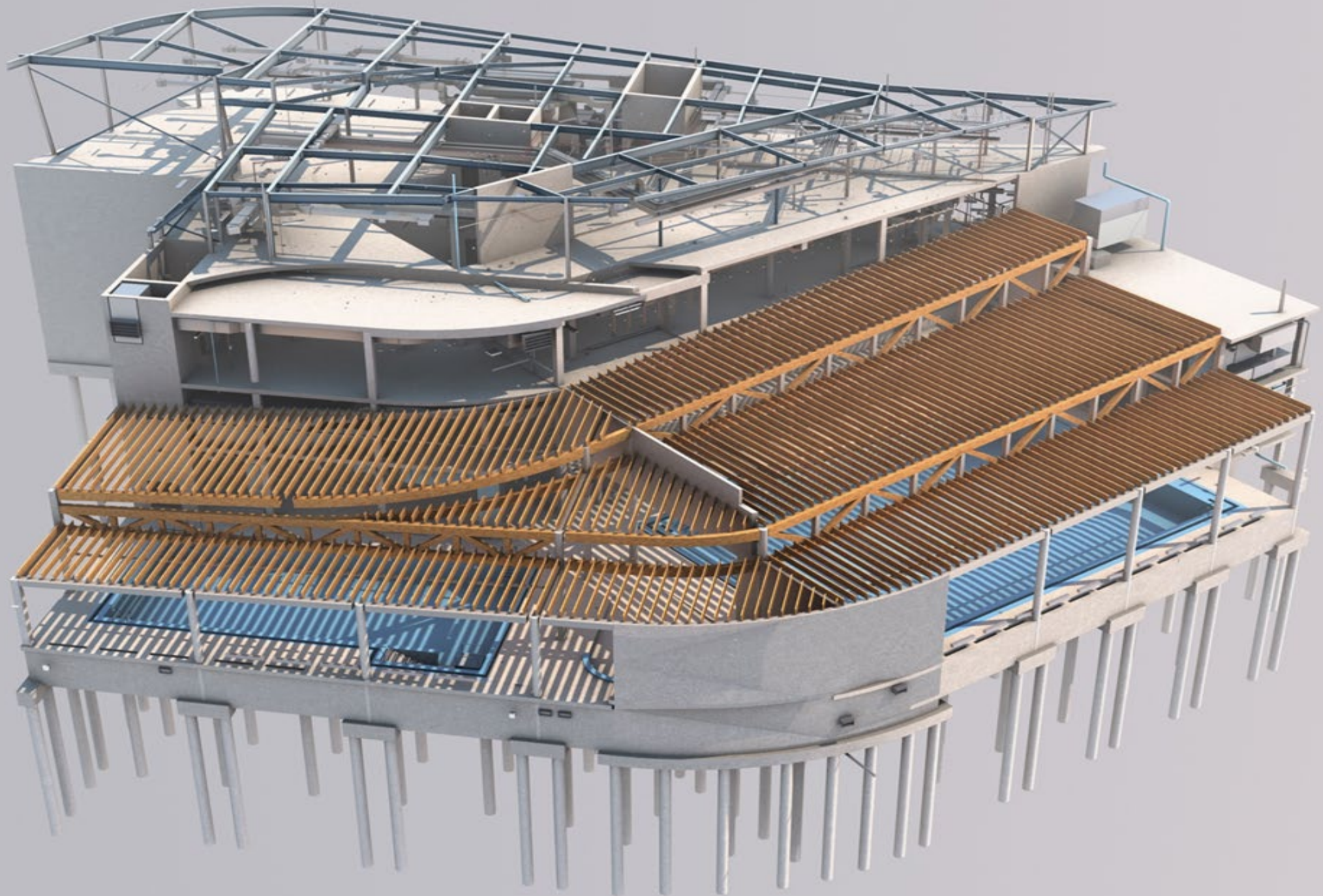






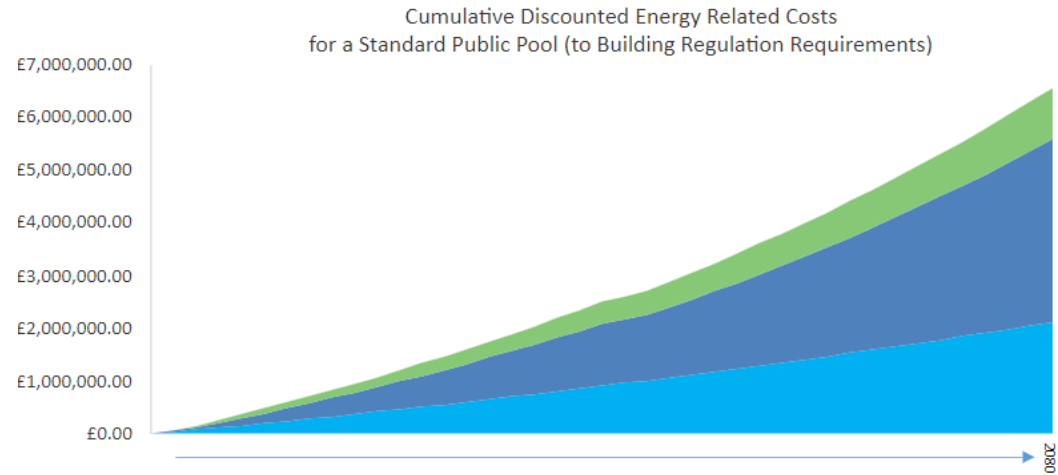


Heat recovery Pool Water





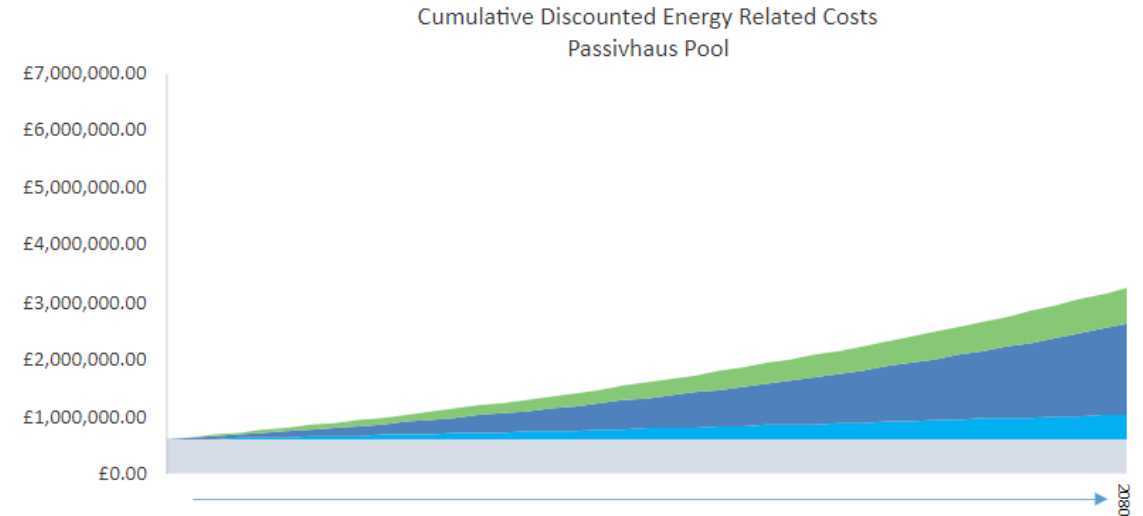
Cumulative Costs for Swimming Pool Building, Built to 2020 Building Regulation Requirements



Cumulative costs for swimming pool building, built to 2020 Building Regulation requirements, for [heating/ventilation](#), [hot water/filtration](#) and [lighting](#)

All costs have been discounted at 5% to represent present value. A conservative annual increase in fuel costs of 4% has been allowed for and a reduction of heating demand of 30% from 2050 to 2080 has been included.

Cumulative Costs for Passivhaus Swimming Building



Cumulative costs for swimming pool building, built to Passivhaus standard, for [heating/ventilation](#), [hot water/filtration](#) and [lighting](#).

All costs have been discounted at 5% to represent present value. A conservative annual increase in fuel costs of 4% has been allowed for and a reduction of heating demand of 30% from 2050 to 2080 has been included.



SAINT-GOBAIN
CRYSTAR® FT
FTMicron4

CPG

SAINT-GOBAIN
CRYSTAR® FT
FTMicron4

FTMicron4
STOP
STOP







Certificate

Certified Passive House Classic


Passive House
Institute
Dr. Wolfgang Feist
64283 Darmstadt
Germany

St Sidwell's Point Leisure Centre
Paris Street, EX1 2JX Exeter, United Kingdom/ Britain



Client	Exeter City Council Civic Centre, Paris Street EX1 1JN Exeter, United Kingdom/ Britain
Architect	S&P Architects 10 Orange Street, Haymarket WC2H 7DQ London, United Kingdom/ Britain
Building Services	Arup Three Piccadilly Place M1 3BN Manchester, United Kingdom/ Britain
Energy Consultant	Gale & Snowden Architects Exeter Bank Chambers, 67 High Street EX4 3DT Exeter, United Kingdom/ Britain

Passive House buildings offer excellent thermal comfort and very good air quality all year round. Due to their high energy efficiency, energy costs as well as greenhouse gas emissions are extremely low.

Leisure centers with pool facilities vary significantly in terms of their energy needs, depending on the facilities included in the project. Passive House certification is therefore awarded based on compliance with bespoke requirements and energy criteria that ensure highly energy efficient solutions for all facilities and the overall project.

The design of the above-mentioned building meets the bespoke criteria defined by the Passive House Institute for this project.

The associated certification booklet contains more characteristic values for this building.


Certifier: Jessica Grove-Smith, Passive House Institute

Darmstadt
16.10.2023

www.passivehouse.com

40025-40074_PH_PH_20230928_JGS





Stamford Leisure Pool

salix

The logo for Salix features the word "salix" in a white, lowercase, sans-serif font. The letter "x" is stylized with a white leaf-like shape integrated into its right side, pointing upwards and to the right. The entire logo is centered on a solid dark blue rectangular background.



salix



alix



salix

Version 4

1. Establish Net Zero Carbon Scope*

- 1.1 Net zero carbon – **construction**
- 1.2 Net zero carbon – **operational energy**



2. Reduce Construction Impacts

- 2.1 A whole life carbon assessment should be undertaken and disclosed for all construction projects to drive carbon reductions
- 2.2 The embodied carbon impacts from the product and construction stages should be measured and offset at practical completion



3. Reduce Operational Energy Use

- 3.1 Reductions in energy demand and consumption should be prioritised over all other measures.
- 3.2 In-use energy consumption should be calculated and publicly disclosed on an annual basis.



4. Increase Renewable Energy Supply

- 4.1 On-site renewable energy source should be prioritised
- 4.2 Off-site renewables should demonstrate additionality



5. Offset Any Remaining Carbon

- 5.1 Any remaining carbon should be offset using a recognised offsetting framework
- 5.2 The amount of offsets used should be publicly disclosed



salix

Version 4





salix

Version 4





salix

Version 4





salix

Version 4

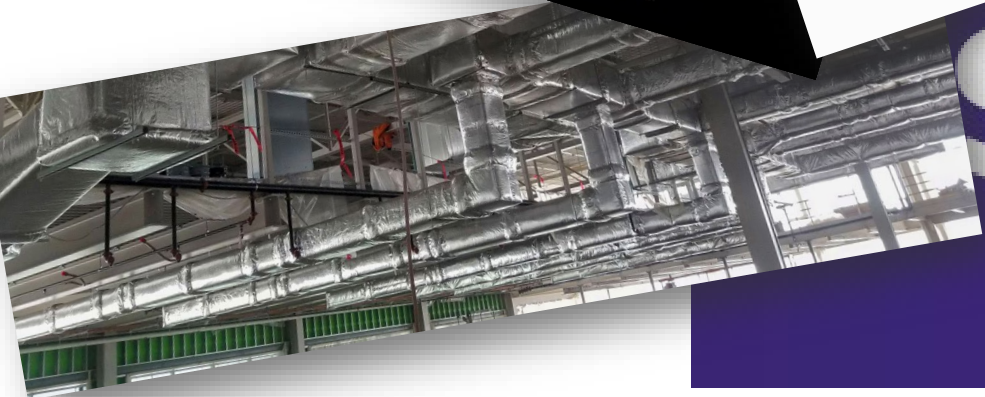




salix

Version 4

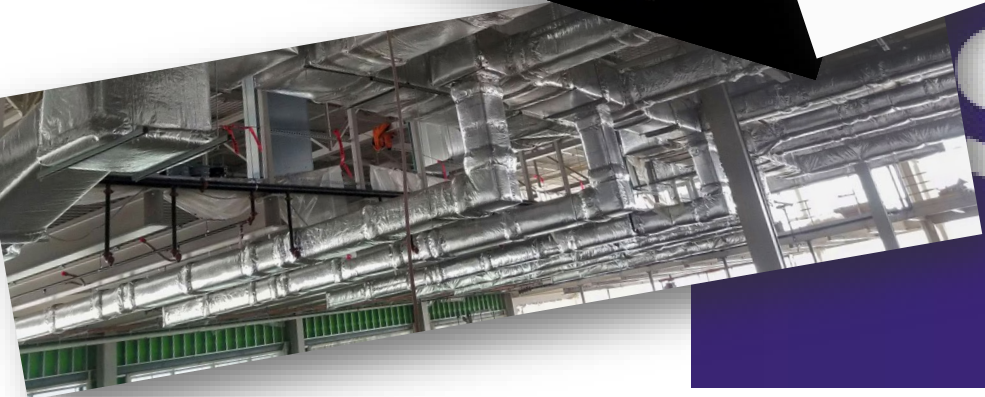




salix

Version 4





salix

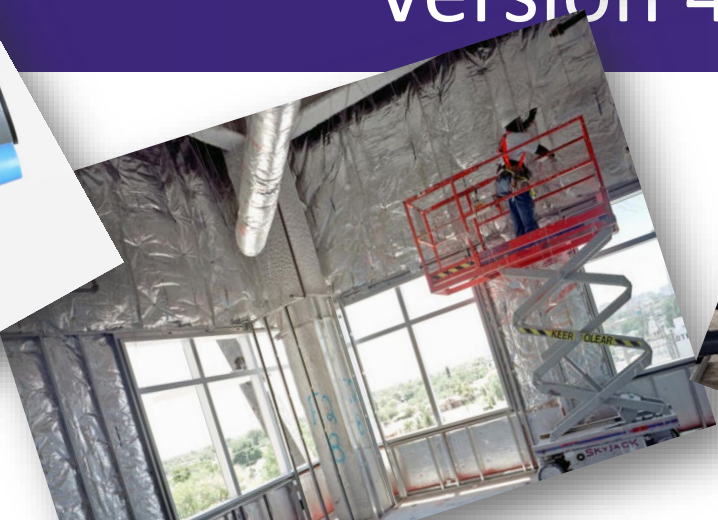
Version 4

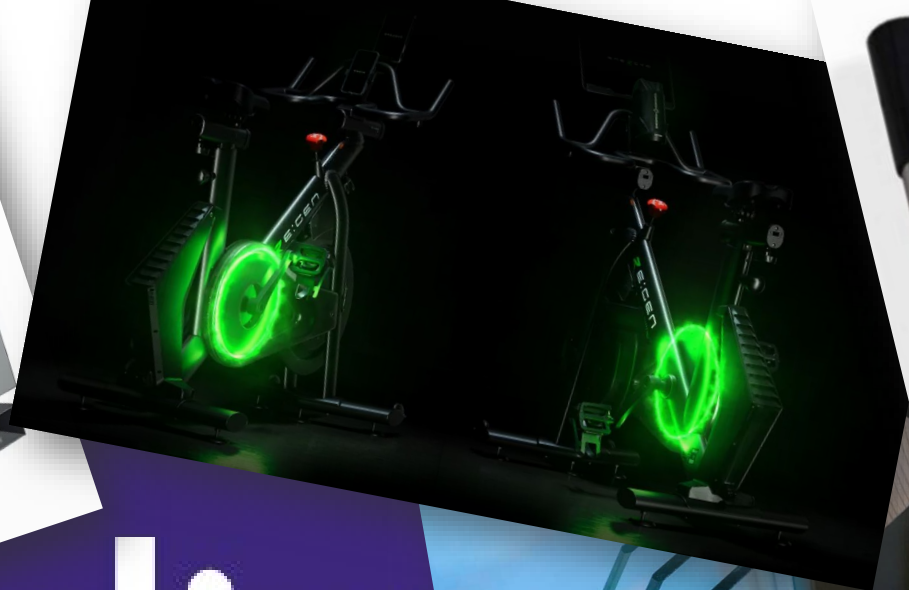




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Version 4

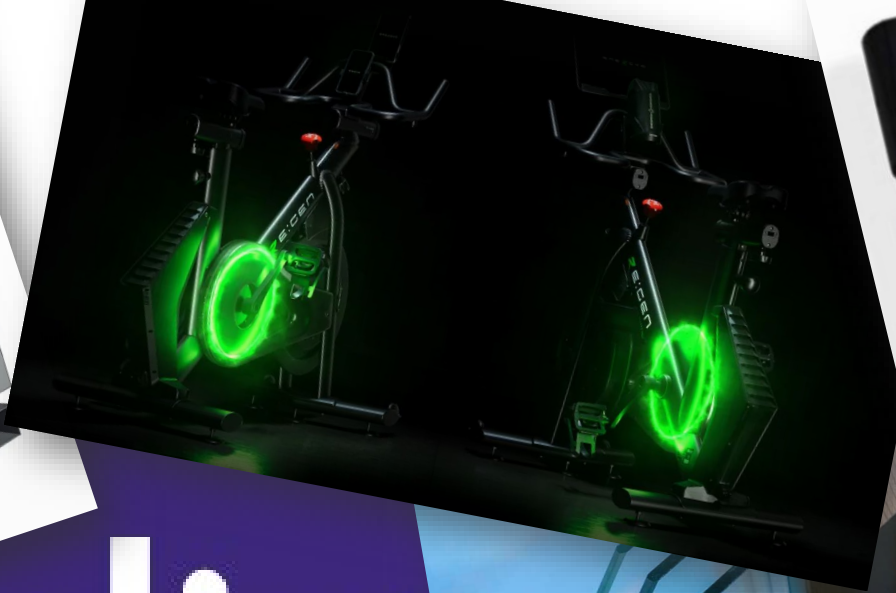




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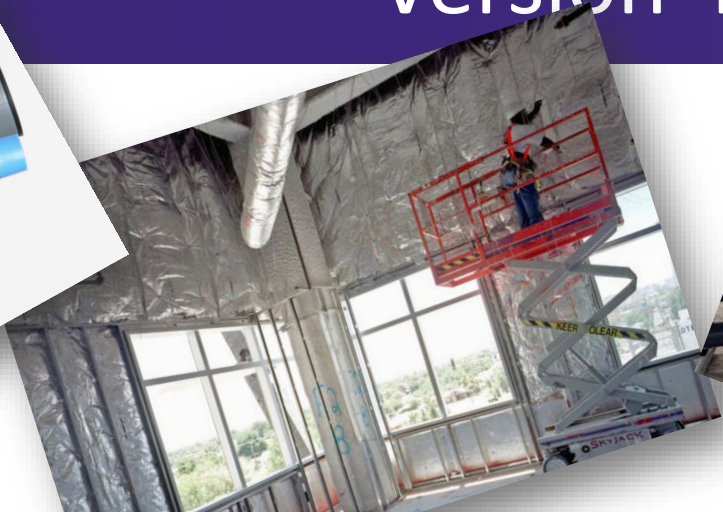
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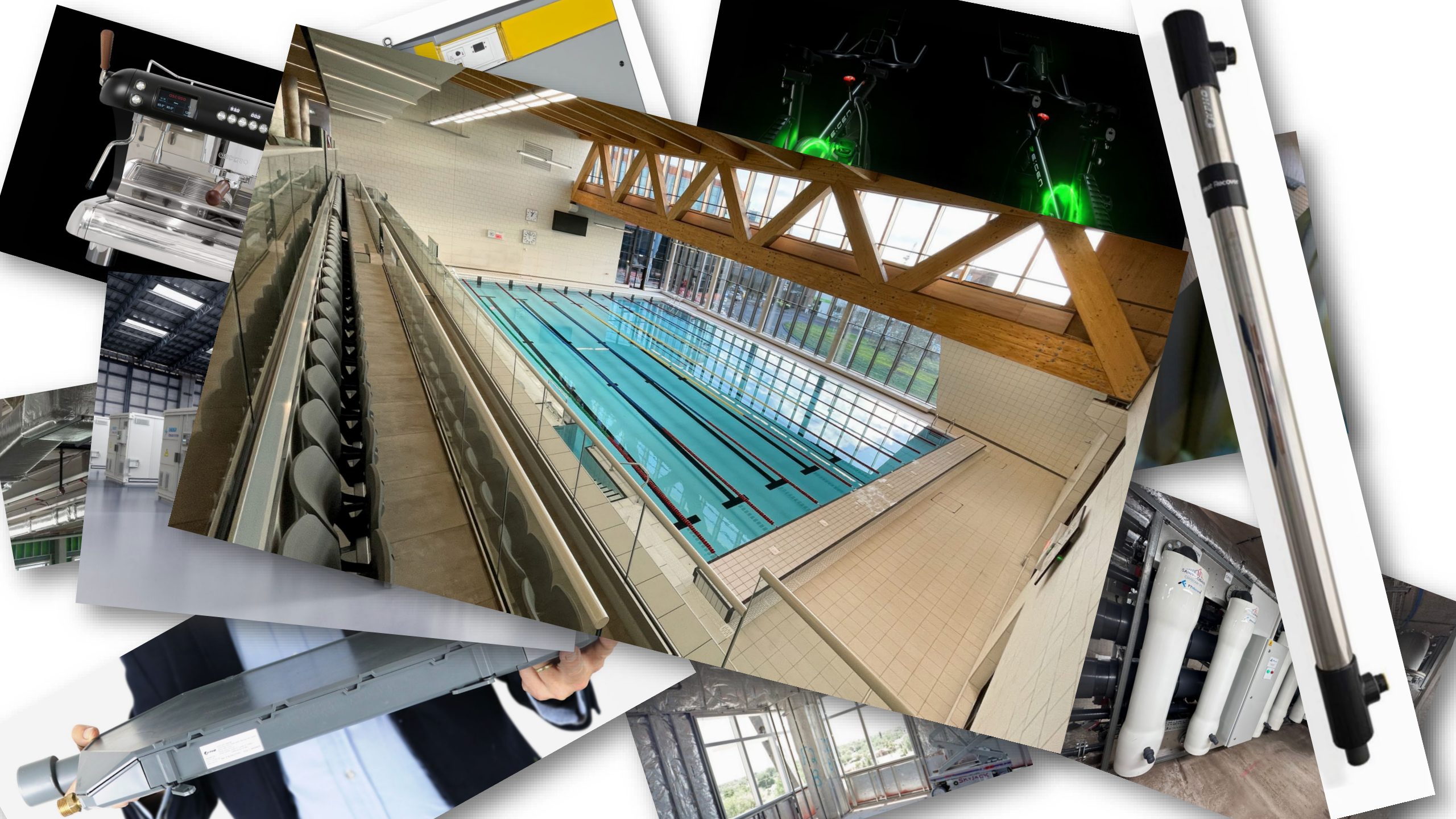




alix

Version 4







PAGABO

Professional Services Framework

Lot 10 (architecture)

Lot 19 (leisure consultancy)

Lot 7 (decarbonisation)



Construction Framework

value/region specific + decarbonisation

Development Framework

value/region specific

answers@space-place.com

SPACE PLACE

Keith.ashton@space-place.com

