

Decarbonising Cambridge Pools



Our Leisure Portfolio

Pools heavy

- 20-30+ year old facilities
- Two 25m Pools one with diving pit
- Outdoor Lido
- Indoor Learner Pool
- Paddling Pools & Splashpads
- A four Court Sports Hall

Leisure Contracts

- Externalised Services since 1992
- With three different Leisure Contractors
- Contract Spec differences
 - 2003 - Investment for Utility Savings
 - 2013 – Investment for Carbon Reduction
- Utility Variance Mechanism
- Risk & Reward Sharing

Utility Variance Mechanism

	Change in Utility Tariff	Change in Consumption	Contractor	Cambridge City Council
1	None	None	No change	No change
2	None	Increases	Pay any additional costs	No change
3	None	Decreases	Retain savings % of investment	% rebate based on level of investment
4	Increases	None	No change	Pay tariff cost over inflation
5	Increases	Increases	Pay for all increased consumption	Pay inflated tariff cost up to base usage
6	Increases	Decreases	No change	Settlements based on cost comparisons to base usage and expenditure
7	Decreases	None	Retain 50 % of savings	Receive 50% of savings
8	Decreases	Increases	Retain 50 % of any savings	Receive 50% of any savings
9	Decreases	Decreases	Retain 50 % of savings	Receive 50% of savings

Investments over the years

Solar Thermal – 2013

Variable Speed Drives (VSDs)

Voltage Optimisation Units

New Condensing Boilers - 2014/15

Replacement Pool Covers

LED Lighting renewal & Upgrades

Air Handling Unit Heat Reclamation - 2017

BMS System on AHU plant

Pipework Lagging

Solar PV Arrays with FIT - 2018

Staff Awareness & Training



Highest Emissions

Figure 11 – Percentage of total City Council Scope 1, 2 and 3 emissions from different assets 2019/20

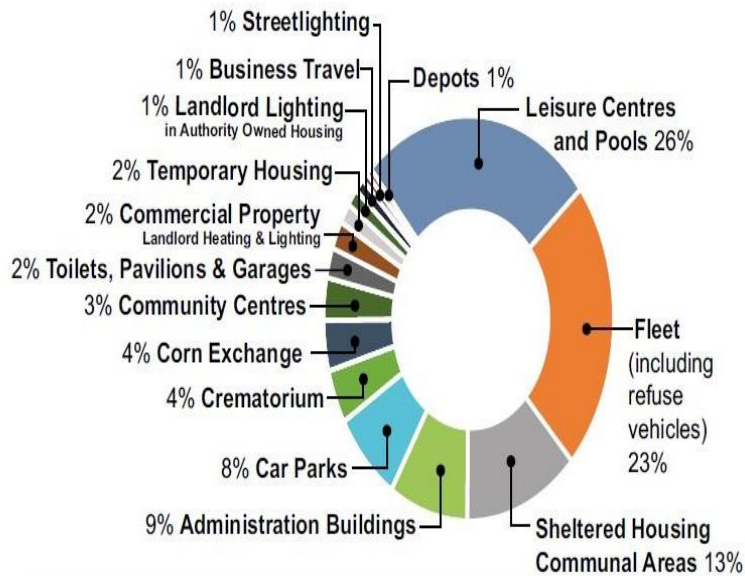
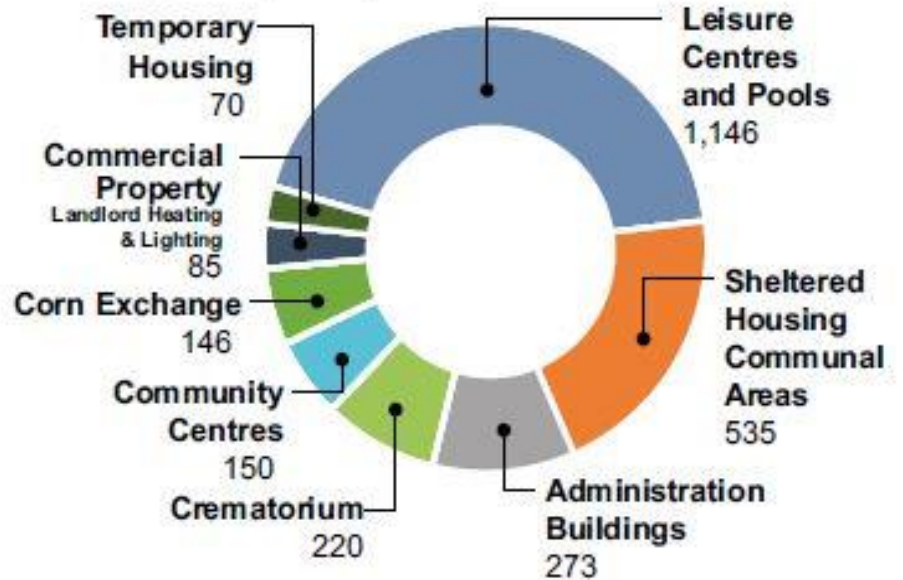


Figure 10. Carbon emissions from gas consumption (tCO₂) 2019/20



Leisure Centres account for 26% of Councils Carbon Emissions 2019/20

Frameworks for Energy Investments

- **Refit 3 Schemes via Local Partnerships**
 - PV Schemes across Council properties
- **Cambridgeshire Local Authorities Energy Services and Project Delivery Contract**
- Reference number: DN442146
Access Agreement fees are 0.75% of project value
Capped at £40k per project.

Contact;

christopher.parkin@cambridgeshire.gov.uk

Chris Parkin

Community Energy Manager

Cambridgeshire County Council



Bouygues Energies & Services Ltd

- **High Level Assessments (HLA)**
 - Site assessments
 - Desktop studies
- **Investment Grade Proposals (IGP)**
 - Tendered solutions
 - Savings guarantees
- **Project Management & Delivery**
- **Monitoring and Validation**



PSDS - Public Sector Decarbonisation Schemes

Abbey Pool

Ground Source Heat Pump – Original Submission

Moved to 300kw Air Source Heat Pumps

Building Management System

LED Lighting Improvements

Digital Motors in Air circulation plant

Pipework Lagging

Awarded £717,601

Saving 1,541,818 Kwh (47%)

Saving 184 Tonnes CO2





Abbey ASHPs



Buffer Vessel

PSDS - Public Sector Decarbonisation Schemes

Parkside Pools

Air Source Heat Pumps 300kw – Heating

Air Source Heat Pumps 150kw – Domestic HWS

Solar PV - 79Kw

Building Management System

LED Lighting Improvements

Digital Motors in Air circulation plant

Pipework Lagging

Awarded £988,946

Saving 1,739,437 Kwhs (37%)

Saving 368 Tonnes CO2





Parkside Solar PV





HWS ASHPs

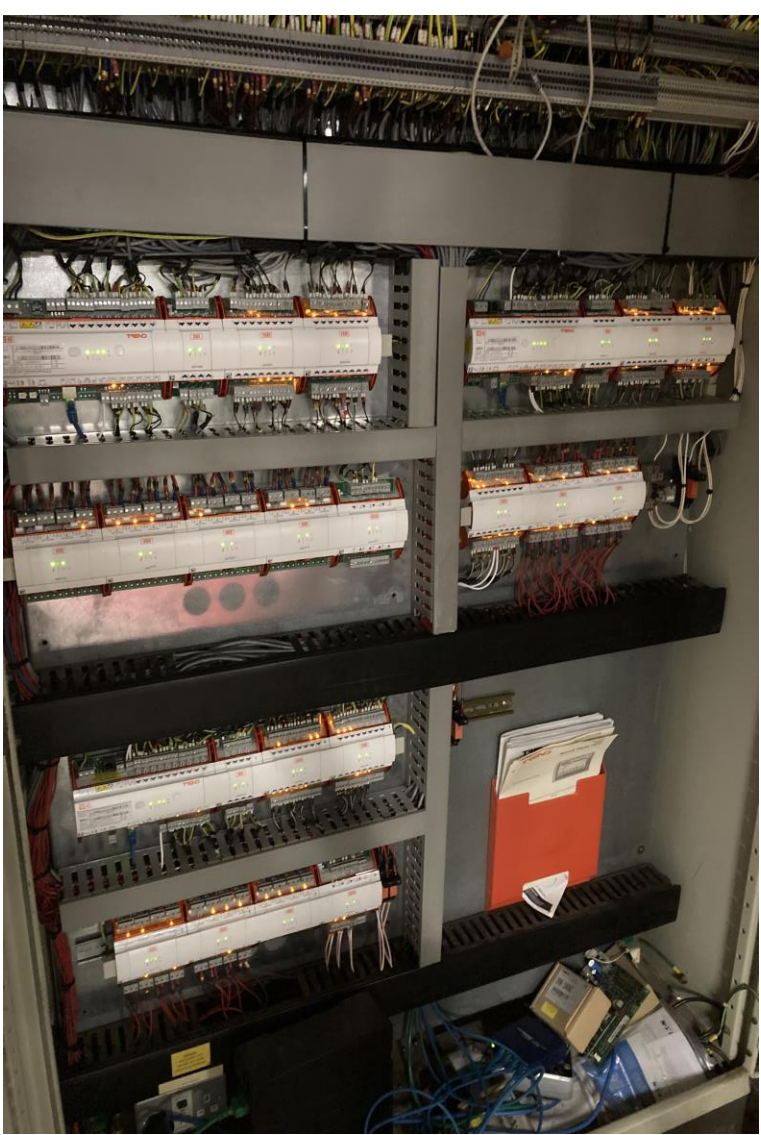


Heating ASHPs





Buffer Vessels



BMS Panels

cambridge.gov.uk

facebook.com/camcitco

twitter.com/camcitco





Pipework Lagging

In Summary

- £2M investment Saving pools around 35-45% consumption and 500 tonnes of Carbon
- Decarbonised pools to around 60-75%
- Measures are reducing Councils emission by nearly 10%
- ASHP look at Solar PV for offsetting increased electric usage
- ASHP can be noisy and may need acoustic compounds
- GSHP need a large external footprint
- Need space for buffer vessels and heat plate exchangers
- Expect long lead times
- Swapping Gas usage to Electric usage – may cost more to run
- BMS - Good setup and control is crucial to maximise savings
- May be more servicing requirements
- Small changes can make a cumulative difference
- Revisit older LED installations
- Staff awareness, training and buy in

Questions?



cambridge.gov.uk

facebook.com/camcitco

twitter.com/camcitco