Lancaster West

Becoming a net-zero carbon estate by 2030

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Version 1

LANCASTER WEST
NEIGHBOURHOOD TEAM
W11

Our vision is for Lancaster West to become a model net-zero carbon estate by 2030.

Our main objectives to help us achieve this vision are:

- **Refurbishing the Lancaster West Estate** and all other properties managed by LWNT to a high energy performance standard
- **Reducing operational carbon emissions** on the estate as far as possible and offsetting any remaining emissions to get to net-zero
- **Co-designing** a sustainable and affordable future with residents
- **Pioneering a carbon-neutral approach** for the rest of Kensington and Chelsea

What net-zero means for Lancaster West

Operational carbon emissions from the estate should be minimised as far as possible, and net emissions should be reduced to zero.

Our Priorities:

1. Investing in improving the energy efficiency of buildings and demand reduction.
2. Prioritising the use of renewable energy sources.
3. Offsetting any remaining emissions as an absolute last resort.

We will also minimise embodied carbon on the estate and emissions from the refurbishment by using sustainable materials and methods and committing to recycling wherever possible.

Heat Network Feasibility Study

We are at the feasibility stage of funding from the Heat Networks Investment Project.

Arup have completed a technical feasibility study looking at the communal heating systems and potential heat network options Lancaster West.

Next steps:

- Review study from Arup
- Mechanical & Electrical Consultants TACE to develop options
- Proceed to detailed design stage

Department for Business, Energy & Industrial Strategy

ARUP

GLA Feasibility Study - LWE Options

Over the last six months an analysis has been done to find out what we need to do to reduce carbon emissions from each home on the estate.

- In depth study resulting in options appraisal for each block
- Gold, Silver, Bronze approach to options
- Based on energy data, EPC's, planned maintenance information, visual inspections.
- Looked at existing heat demand and building fabric
- Options aligned with ongoing heat network study by Arup.

Retrofit Accelerator - Homes

Developing options for each block

	Walls	Thermal bridging	Air-tightness	Glazing	Roof	Ventilation	Heating	Solar
0 Current situation	Unclear if cavity, probably not insulated	Very high due to concrete slabs	Very poor, mostly due to windows	Very poor, single glazed. Cold in winter, overheats with direct sunlight.	Uninsulated? Causes overheating for top floor flats in summer, cold in winter.	Poor as evidenced by damp and mould. Kitchen/bathroom extract fans?	Temporary gas boiler feeding heat network. Poor network efficiency and overheating / Gas boilers in houses (unknown age).	None
1 Essentials			Basic draught proofing in addition to improved glazing.	High performance double / triple + new external doors	Super-insulated	Additional MEV	Heat pump-based heat network	
2 High performance envelope	High performance External insulation	New external envelope	Best practice	High performance double / triple + new external doors	Super-insulated	Additional MEV/MVHR	Heat pump-based heat network	
3 High performance + solar PV & storage	High performance External insulation	New external envelope	Best practice	High performance double / triple + new external doors	Super-insulated	Additional MEV/MVHR	Heat pump-based heat network	Solar PV + Communal storage

Leading to improvements for each block

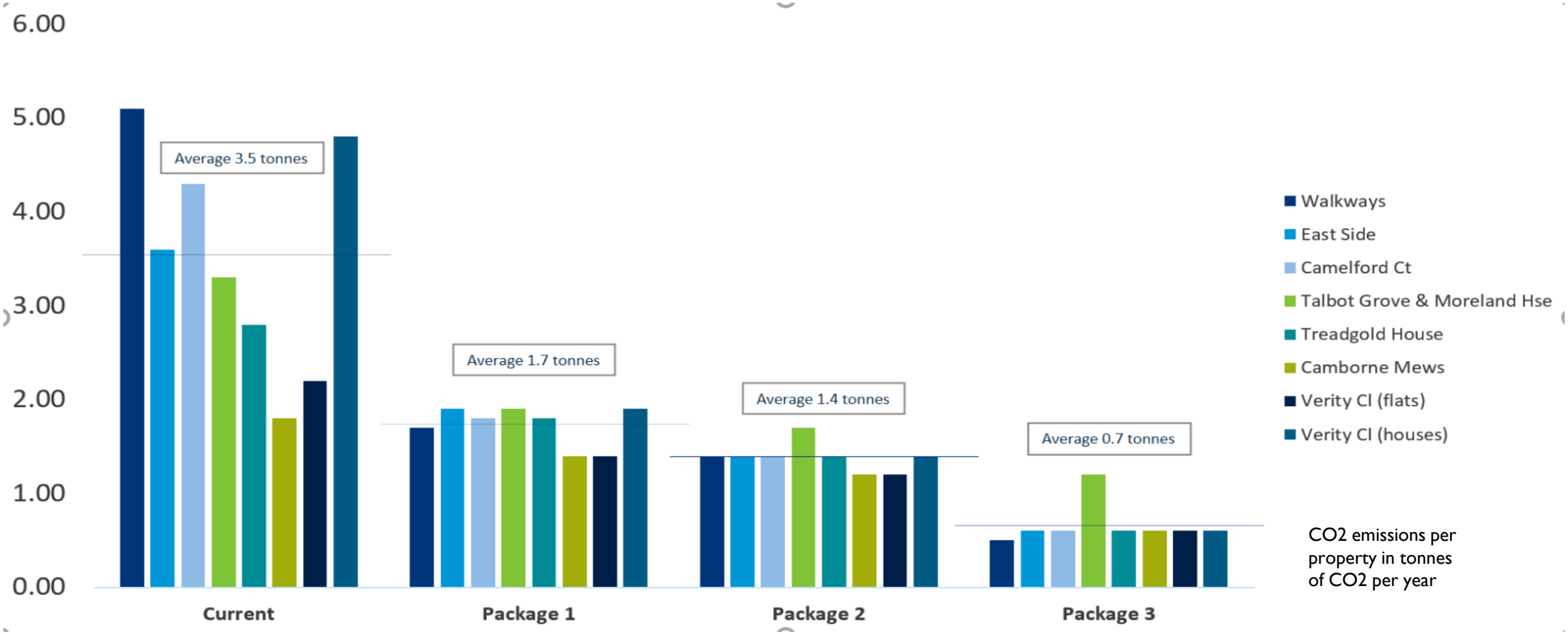
The Walkways – An Example

	Annual CO_2 emissions (tonnes)	Heat demand (kWh/m²) Ground – Mid – Top Floor			Tenant cost (heating and electricity)
0 Current situation	5.1*	168	133	215	£915-1,085**
1 Essentials	1.7	103	67	80	£770
2 High performance envelope	1.4	39	30	43	£680
3 High performance + solar PV & storage	0.5	39	30	43	£460

*Includes system inefficiencies leading to approx. double the heat needed being delivered into the system

**Not currently paying for metered heat. Assumption based on a gas boiler and typical levels of underheating seen in hard-to-heat properties.

Whilst reducing CO2 emissions with each option



CO2 emissions per property in tonnes of CO2 per year

Using standards and data

	Passivhaus standard	EnerPHit standard	Newbuild standard
Space heating/cooling demand	15 kWh/m²/a	25 kWh/m²/a	54 kWh/m²/a
PE/PER demand	120 kWh/m²/a	120 kWh/m²/a	190 kWh/m²/a
Airtightness (n50)	0.6 n50 1/h	1.0 n50 1/h	5.0 n50 1/h
Thermal bridges	0.01 W/MK	As PH standard	0.05 or 0.15 W/MK
Overheating frequency (>25C)%	10%	10%	Not measured

- Measuring and monitoring energy usage and carbon footprint data using smart meters, surveys and experts
- Use of EPC data and studies of building fabric to measure energy efficiency of building