

Electricity Demand Reducation from all Participating Buildings

Note: Almost all lighting at TLC and TBC Offices follow best practice. As such focus of opportunities are: Time control of equipment; user control; Servers (IT); Pumps and Drives; Voltage reduction potential

Building	Opportunity	Annual Energy Savings (kWh)	Notes for Savings	Savings: T/CO ₂ p.a	Savings in £/p.a	Actions/Next Steps
TIC (Hat Shop)	Complete LED lighting retrofit of 27 50w Halogens to 5w LED	2,843	Lighting assumed required 9 hrs a day 5 days a week, estimated elec unit rate 15p/kWh	0.90	£426	Additional savings possible from improved time control of hot water, insulation of loft area, and replacement of heating pumps with variable speed drives - may achieve further 20% reductions
Roses Theatre	Replace Current heating pumps with Variable Speed Drives	598	Savings conservatively estimate based on 20% saving on 25% of current elec consumption	0.19	£90	Energy monitoring of pumps necessary to determine specific savings, but replacements should be incorporated into future heating upgrades
Roses Theatre	Time control on bar chillers & Water heaters	598	Savings conservatively taken at 5% of total consumption	0.19	£90	
TBC Offices	Increase cooling temperature from 20 to 22 degrees to remove cooling required to remove incidental heat gains. Similar savings as reducing volume of the room to be cooled	8716.2	This reduces volume of heat gains that require cooling. A 2 degree increase in cooling temp saves 2w/m2. assuming room is 5.6x10x2.5 = 190m2 gives 3,329KW heat gain, with 2.5COP = 1,332KW energy saved + 7884(15% of demand from new units) savings from cooling units cooling to a 2oC higher temp	2.75	£1,307	Savings shown area based on new cooler units with COP of 4 rather than 2.5 applied. Retaining current units increase savings to £200, but impact of more efficient units on whole cooling requirement remains the primary recommendation
TBC Offices	Replace cooling units with modern equiv to increase coefficient of performance from 2.5 to at least 5	42048	Taking purely cooling demand from servers	13.29	£6,307	Server demand assumed to be 24KW based on 2016 A/C inspection report which stated 28kw full load and 21kw idle demand
TBC Offices	Investigate potential for Voltage Reduction opportunities. Current levels recorded at 242V	10,408	A 10V reduction may return savings in order of 4%, subject to specialist survey	3.29	£1,561	Whilst benefit in reduced consumption will only be realised in voltage dependent loads (Fluorescent lamps & Motors), a specialist survey should be undertaken to identify benefits (including extended operational life capacity of equipment)
TBC Offices	Flow reduction (aerators) on water taps to reduce energy	359.52	conservative saving of 20% on energy for hot water savings based on 105ltr capacity of 9 heaters emptied once daily	0.11	£54	Investigate opportunities for rainwater harvesting with possibility of using in WCs
TBC Offices	Flow reduction (aerators) on water taps to reduce water	N/A	Conservative savings on energy from 10% water consumption resulting from reduced flow rate	0.29	£222	Linked to dual flush/rainwater harvesting where practicable for WCs
TBC Offices	Upgrade Lighting in all maintenance areas	7,806	Areas used infrequently, estimated savings as 3% of total elec consumption taken	2.47	£1,171	Previously omitted due to business case, but with carbon priorities, this should be revisited. Requires revisit to complete stock take of lamp volume & typical usage
Domestic Properties	Reduced consumption to align with OFGEM 'typical consumption' figures where EPC data indicates savings can be achieved	28,680	All savings based on each property achieving OFGEM published typical consumption levels. Cost savings use assumed unit rates as applied throughout this workbook	6.61	£1,923	Each property will require individual survey to confirm specific energy saving potential. This should be commissioned as an extended feature of updating the Energy Performance Certificates because using EPC alone will not provide sufficient detail needed
TOTAL		102,057		30.09	13,152	

based on 8kw demand to supply 100ltrs at 50oc temp differential

Note: Minor discrepancy between Saved emissions in Action Plan summary and the sum of each individual granular tab (1.14 T/co2e). This is due to the inclusion of some emissions savings from water and gas within the domestic properties being incorporated within this tab. Some PV reduction scenarios mitigate this to the extent that by totalling granular emissions savings a figure of 1,598.79 is reached, however the stated figure in the summary Action Plan tab accurately shows 1,599.93, which is correct and the figure used within the Final Report