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1. INTRODUCTION

1.1 The report

This report is the third in a series of annual energy reports done by Edward Cullinan Architects as part of their carbon monitoring and reduction procedures.

It provides an assessment of the operational activities of the company during the year 2010 as well as comparison to the figures from previous years, and as advised by Carbon Trust, it encompasses a range of emission sources, from direct use of fuels to indirect impacts such as employee travel.

This report has been carried out for a single-site office based in Islington, London, with a team of 30-40 people. It does not cover any products or services that ECA produces. Energy considerations of the buildings we design are dealt with throughout the design process.

1.2 Data collection

Data for this report was collected through a variety of methods, including meter readings, invoices and expense accounts. As Edward Cullinan Architects sublet space, it was essential for energy consumption figures that individual meter readings for each tenant were taken.

All business travel data was extracted from monthly accounts and for simplicity, monthly figures represent the period in which travel was paid for. Also taken into consideration were resources, such as paper and toner cartridges, which though measured will not be accounted for in this study.

1.3 Scope and boundaries of the report

We have collated an up-to-date carbon footprint for monthly figures under the following remits and used the conversion factor figures from DEFRA to equate all units into KgCO₂eq. Our remit covers the following 3 scopes:

SCOPE 1

Direct emissions that result from activities the organisation controls. For the purpose of this report, scope 1 relates to emissions resulting from combustion of gas used to provide hot water and heating.

- British Gas

SCOPE 2

Emissions from the use of purchased electricity. Although not directly in control of the emissions, by purchasing electricity the Company is indirectly responsible for them.

- Green Energy

SCOPE 3

Indirect emissions from products and services – this includes water, waste and transport.

- Thames Water
- Waste management by Bywaters
- Business Travel
- Commuter Travel

As part of our commitment to promoting sustainable work and lifestyles, ECA encourages its people to complete personal carbon footprints, which are also included in this study.

Emissions are shown in measurements of CO₂e (Carbon Dioxide equivalent). For greater accuracy, all figures are measured in KgCO₂, with the final figure shown in tonnes (tCO₂).

2. CARBON FOOTPRINT

This section features a brief analysis of Edward Cullinan Architects’ carbon footprint for the calendar year 2010. It is an update of the previous report covering data collected between January and December 2009.

2.1 Data for 2010

Total carbon footprint for the year 2010 was 54.7 tCO₂e, which equates to 1.6tCO₂e per capita (36 people). Use of electricity has remained the main source of energy and contributed to 42% of the total footprint (23tCO₂e).

Breakdown by scope		Carbon Footprint tCO ₂ e	Percentage	
Scope 1	Gas	12.6	23	
Scope 2	Electricity	22.6	42	
Scope 3	Water	0.096	19.5	0
	Waste	3.6		7
	Business Travel	11.2		20
	Commuter Travel	4.6		8
Scope 1 + 2 + 3		54.7	100	

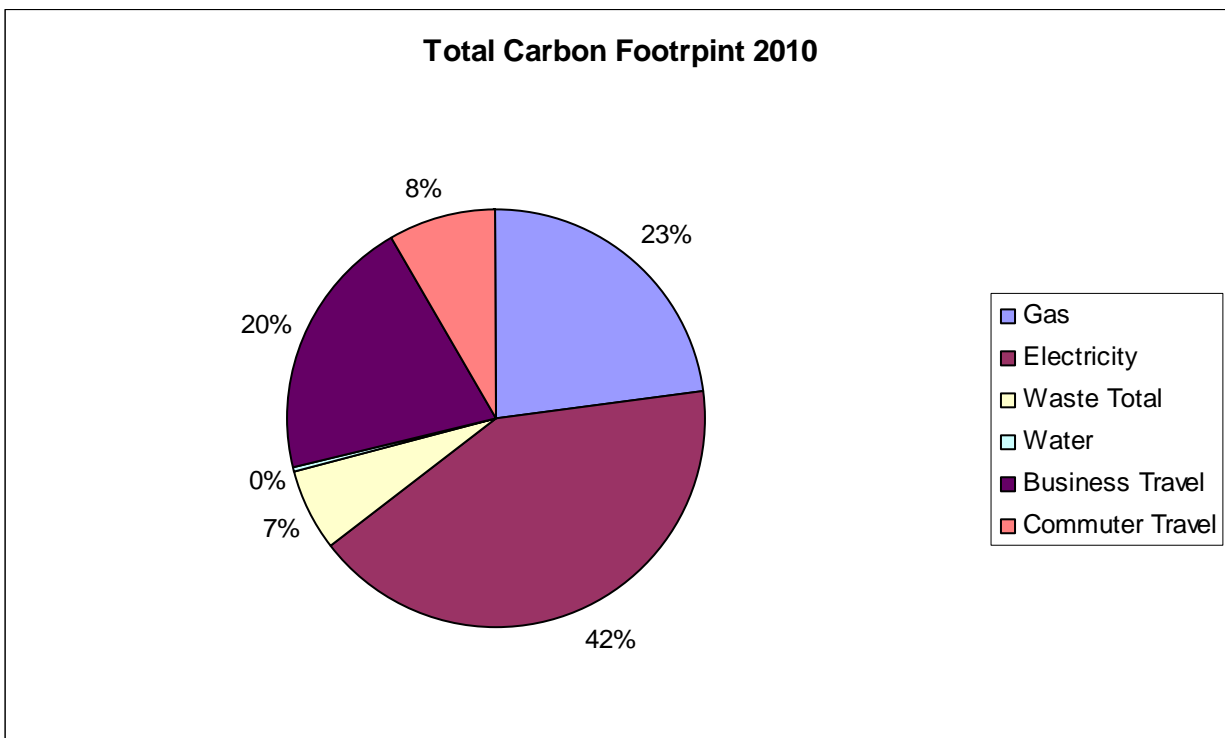


Fig.1 Total carbon footprint for 2010 – break down by emission source

2.2 Carbon footprint comparison

Edward Cullinan Architects have monitored the footprint of their everyday activities since September 2007. The following section covers footprint comparison for years 2008 – 2010.

Compared to figures from 2008, Edward Cullinan Architects managed a total carbon footprint reduction of 10% to date. We have however increased our total carbon footprint by 1.7% in comparison to year 2009.

Year	Total Footprint(kgCO2eq)
2008	60,771.78
2009	53,274.81
2010	54,682.57

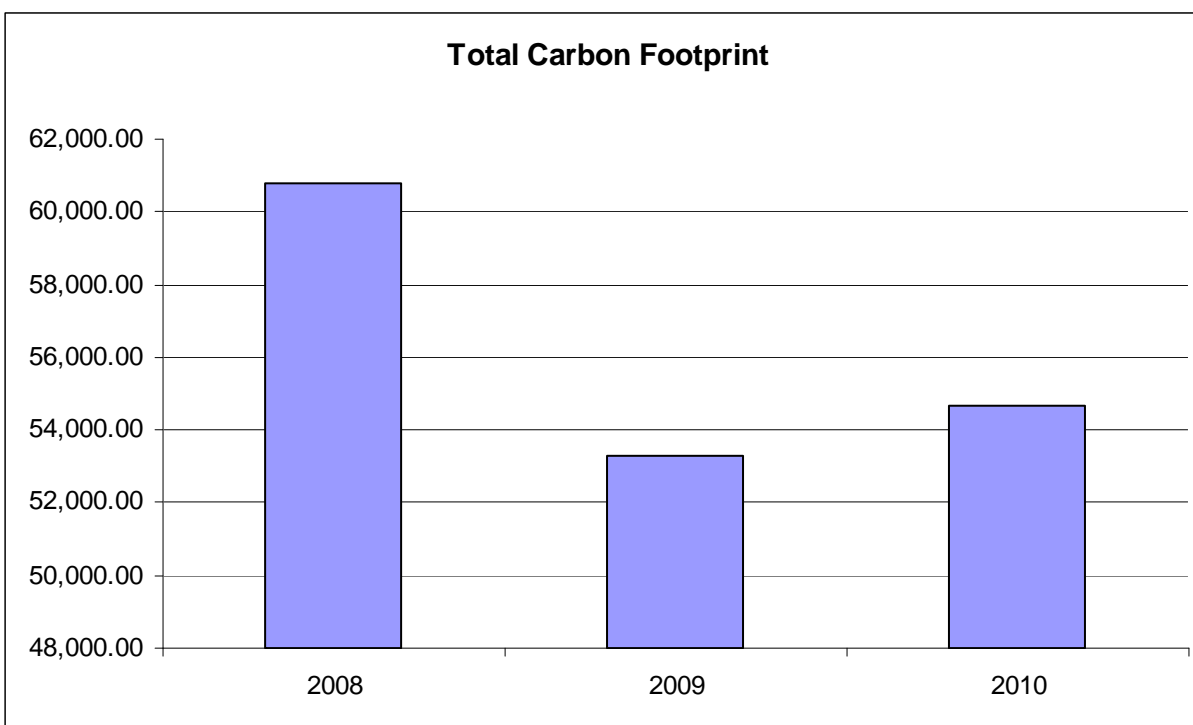


Fig. 2 Total footprint comparison by year.

2.2.1 Carbon footprint comparison per person

Our average footprint per person increased in 2010 (36 people) by 6.6% in comparison to the figures gathered in 2008 (41 people), but is less by 5.8% than our total carbon footprint pc in 2009 (31 people).

Year	Total footprint per person (tCO2eq)
2008 (41 people)	1.5
2009 (31 people)	1.7
2010 (36 people)	1.6

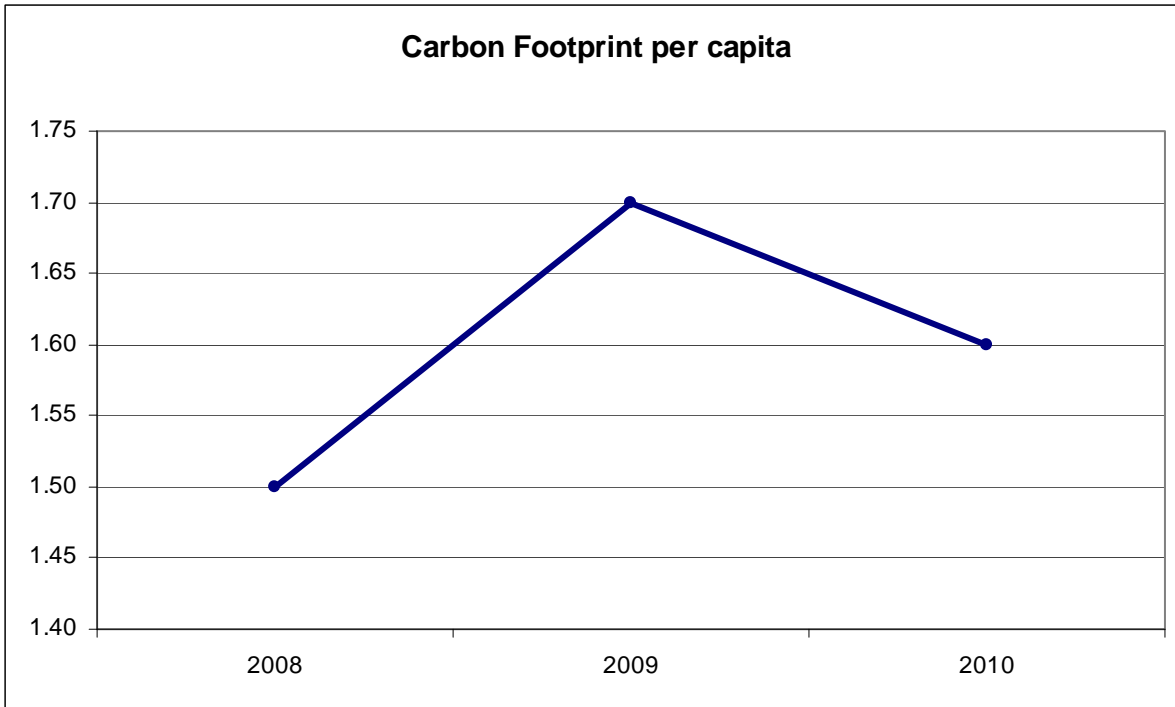


Fig.3 Total carbon footprint per capita per year

2.2.2 Carbon footprint comparison per scope

The chart below illustrates the comparison of our annual carbon footprint per scope.

In 2010, ECA increased gas consumption, which resulted in 3.8% over 3 years increase of our annual footprint for scope 1. We did, however, manage total reductions in scope 2 and 3 of 3.8 % and 22.5% respectively.

Year	Scope 1 (kgCO2eq)	Scope 2 (kgCO2eq)	Scope 3 (kgCO2eq)
2008	12,107.22	23,515.11	25,149.46
2009	10,311.22	23,139.08	19,824.51
2010	12,566.26	22,620.47	19,495.84

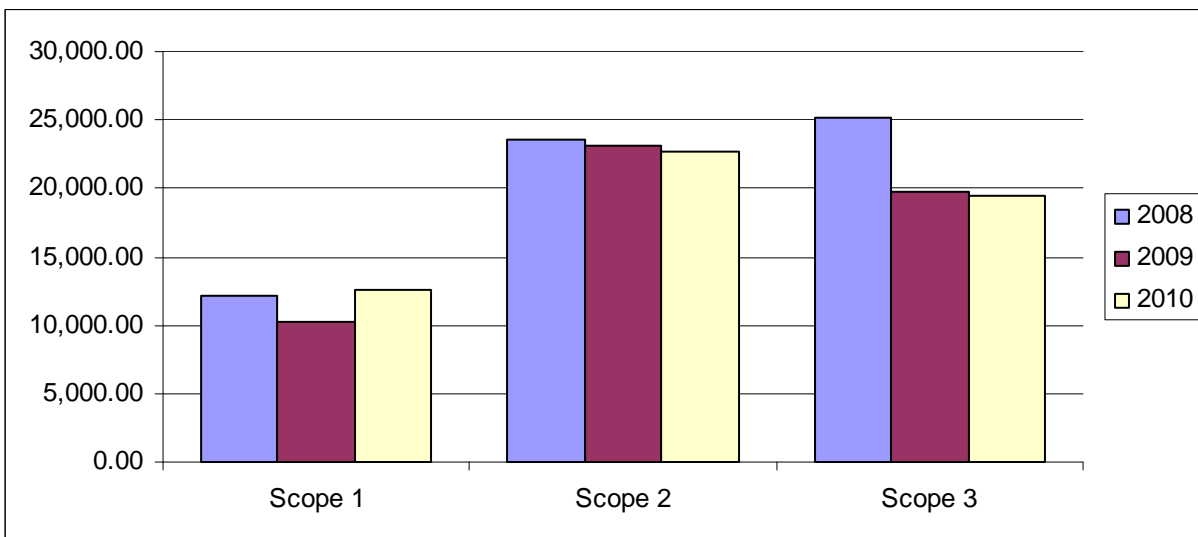


Fig. 4 Annual carbon footprint comparison per scope

2.3 Personal Carbon Footprints

2.3.1 Personal footprints 2010

In 2010, 14 people submitted their personal carbon footprints, of whom 8 partook in the personal carbon footprint exercise at least once before and 4 have been submitting their data on an annual basis since 2005.

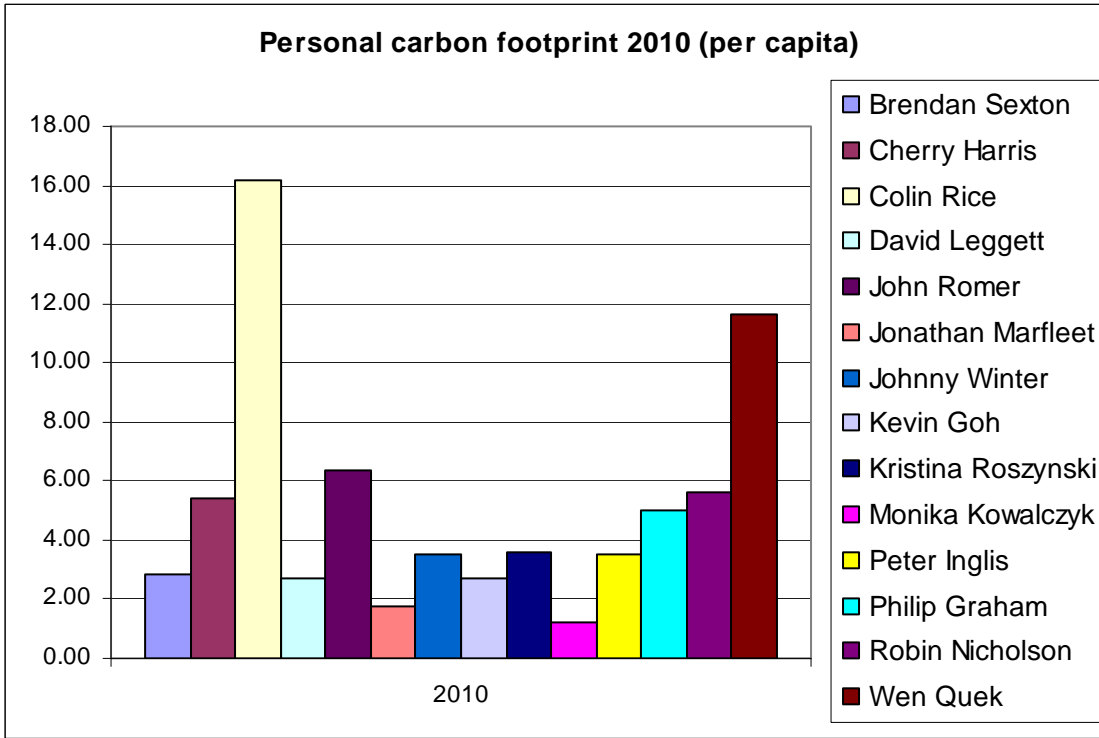


Fig. 5 Carbon footprints 2010, per person (tCO2e)

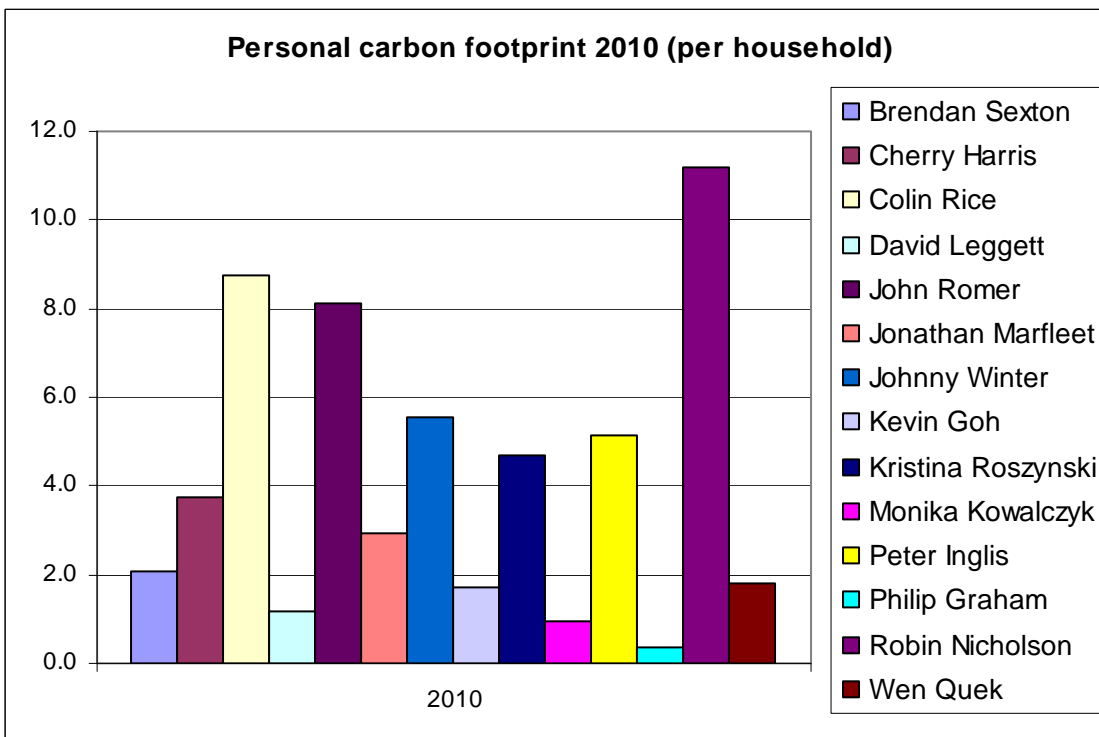


Fig. 6 Carbon footprints 2010, per household (tCO2e)

2.3.2 Personal footprints comparison

Of the 8 people who have taken part in the carbon footprint exercise at least twice, only 4 managed to reduce their carbon footprint in comparison to their baseline figures..

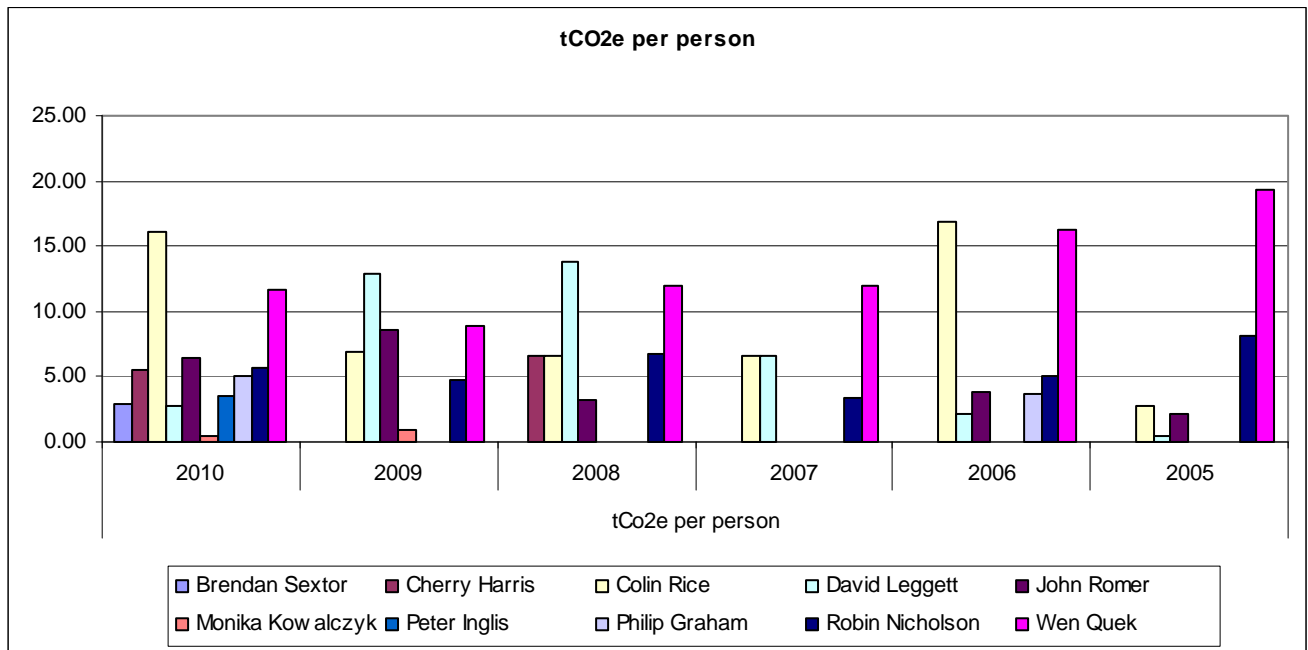


Fig. 6 Personal footprints comparison by year (tCO2e)

3. BENCHMARKING

This section compares annual footprints for Edward Cullinan Architects against the standard CIBSE benchmarks for naturally ventilated open plan office.

3.1 Total carbon footprint benchmarking

The following charts present ECA’s annual footprints for electricity and gas in the years 2008 – 2010 against the Best Practice and Typical performance figures as per CIBSE benchmarking standards.

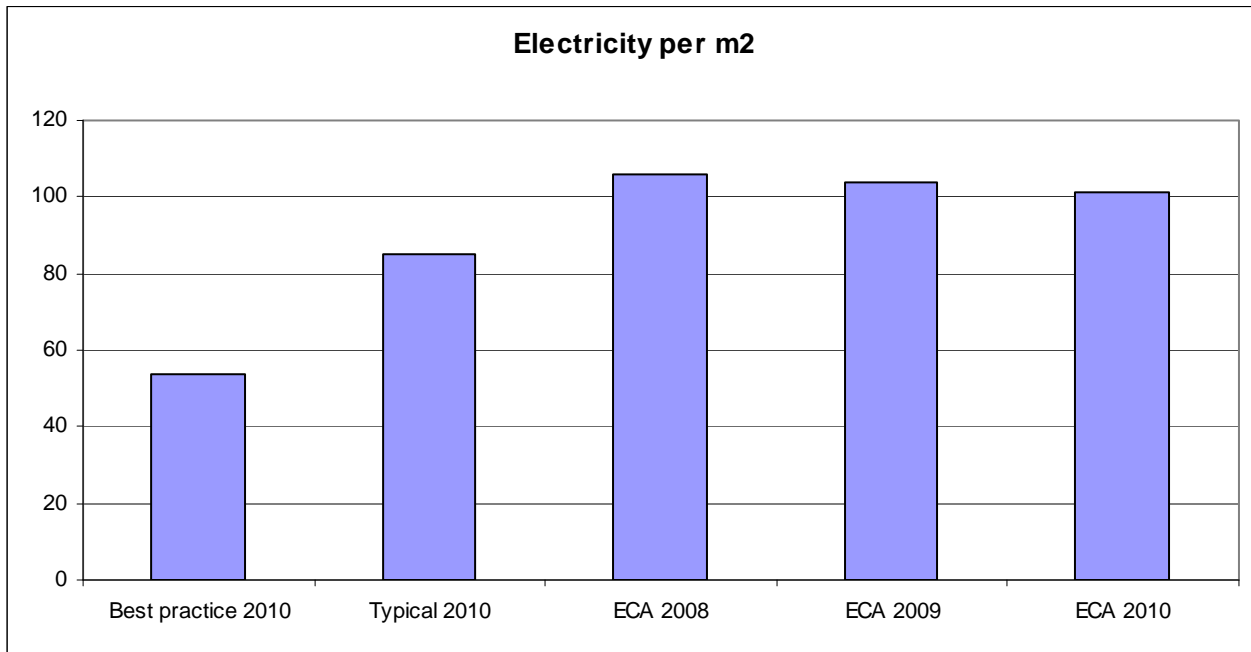


Fig. 7 Electricity – ECA annual footprint comparison against CIBSE standards for 2010 per m2

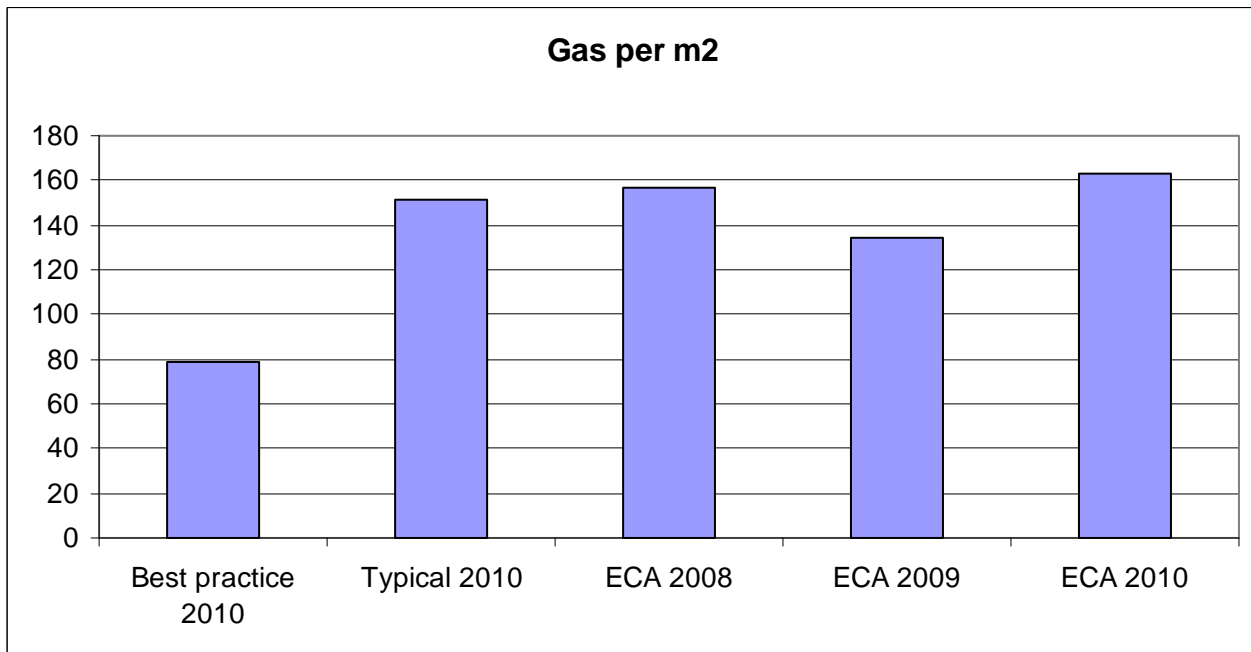


Fig. 8 Gas - ECA annual footprint comparison against CIBSE standards for 2010 per m2

The use of gas and electricity per square meter is at Edward Cullinan Architects higher than typical, which indicates that perhaps energy could be used more efficiently. However, it has to be taken into consideration that CIBSE benchmark measure is crude to some degree and does not take account of nature of equipment, etc.

4. RECOMMENDATIONS

It has to be accepted that both gas and electricity use are to a certain degree reliant on seasonal climate variations. Travel will also depend on project location.

However, the following recommendations are made to further help reduce our total carbon footprint:

a) scope 1:

- implement a better system of monitoring office temperature and prepare a refresher session for those responsible for gas boiler set-up to reduce the risk of unnecessary heating

b) scope 2:

- research options to install separate movement sensors in each toilet to ensure that the light and fans in the cubicles are on only when needed
- install energy smart meters to measure usage in key parts of the office and raise awareness
- promote the "switch off the lights" culture for all meetings in the lunch table area

c) scope 3:

- sort out the leaking taps in toilets
- further promote the "re-use / re-cycle" culture and responsible purchasing
- further encourage cycling / walking to work
- further encourage use of public or shared transport for business purposes, research use of alternatives (e.g. new technologies)