

BENCHMARKING REPORT

Environment Agency Portfolio

October 2014



SUMMARY

As part of their Premium CBx membership benefits package, CBx provided a benchmarking review of the Environment Agency office. This high level benchmarking exercise is one part of the CBx bespoke advisory offering; full details of this are available at www.cbxchange.org.

The aim of the exercise is to provide an overview of a portfolio; the spread of data, highest and lowest consumers, building use and sector split, exposure to legislation, fuel split and performance against industry benchmarks. The outcome will highlight areas for further targeted analysis focusing on where tangible savings can be made.

BACKGROUND

The Environment Agency works towards a national carbon reduction target; set according to what can realistically be achieved through capital investments and better energy management. Automatic meter readings (AMR) are collected at half-hourly intervals for all buildings (gas and electric) and monthly consumption data is recorded.

Facilities management teams are responsible for ensuring the accuracy of data and delivering carbon reduction plans for the buildings within their geographical remit. This may involve managing refurbishment projects and ensuring that the buildings operate as expected against "normal" profiles. Exceptions are investigated and quarterly reports compare performance of the portfolio against targets set and evaluate whether the programme is on target to deliver on the savings stated.

At national level, the Environment Agency conduct strategic information gathering exercises that help shape future priorities, such as detailed surveys on a host data centre and server / communications rooms in order to better understand the relationship between installed equipment and support services such as air conditioning and UPS.

The benchmarking review assessed 22 office buildings comprising three air conditioned buildings, one cellular, naturally ventilated office building and 18 open plan, naturally ventilated buildings. Total energy consumption between July 2013 and Jun 2014 was 14.69 Giga Watt hours equivalent to 5,628,968 kgCO₂ or 1126 average UK household.

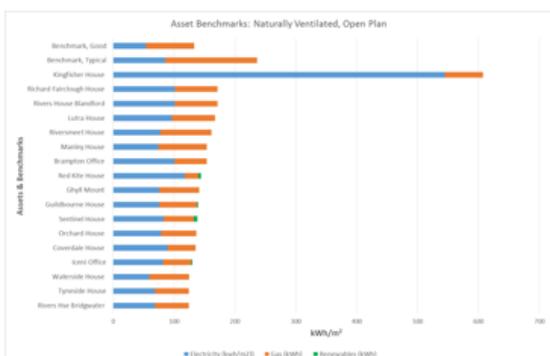
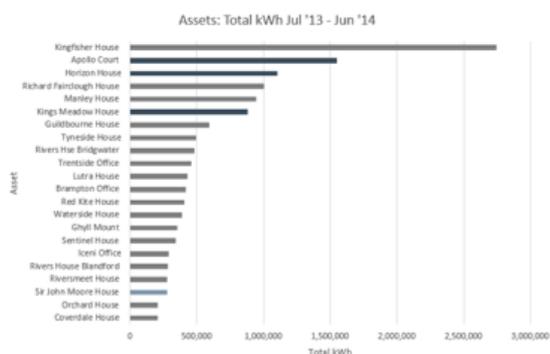
METHOD

CBx took a structured approach by collecting just 16, high-level data points for each building in the portfolio and running that information through a set of benchmarking processes in order to drill down into the data and focus in on areas needing further attention. By analysing the data in terms of overall energy consumption, by kWh / m2, by main internal environment type and by fuel split it was possible to build up a clear picture of quick wins and investment priorities. This analysis is available for free as part of the CBx premium member package but is otherwise a cost-effective way to build a 'big picture' portfolio view and list of next steps.

NEXT STEPS

Once priorities have been identified, it's necessary to identify any particular challenges of the buildings to move forward.

- Output 2(a): is a leased, grade 2 listed building. Opportunities to reduce energy through upgrading the thermal fabric are limited. Options for installing low carbon technologies are also limited
- Output 2(b): Electricity consumption data is provided by the landlord and the validity of these data is under investigation with the EA estates department
- Output 4: Multi-tenanted meaning that EA does not have sole control over space and systems. The EA have been working to influence a low carbon investment programme to improve the DEC rating



OUTPUTS

On the whole, the portfolio performed well under the analysis with total kWh/m2 consumption sitting below the typical natural ventilation benchmark for 19 of the buildings. The portfolio review and comparison of energy performance from the 22 properties delivered a high level signposting of where to focus attention:

1. Identified a number of discrepancies in the energy consumption of four offices requiring further detailed assessment to resolve the underperformance.
2. Two buildings to target a metering and electricity reconciliation through a partial TM22 study;
3. One building to review gas consumption and as a naturally ventilated building this will look at fabric heat loss and unexpected air changes
4. One building to require a more detailed post occupancy evaluation where the building is underperforming in a number of the tests

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