

# John Wheatley College Environmental Sustainability Report 2007/08

## 1. Introduction and Context

As part of its commitment to minimising its impact on the wider environment, and also to transparent, holistic corporate reporting and accountability, the College is currently leading a Sustainable Accounting Project, to explore how sustainability performance can be incorporated into annual reports. This partnership project is financially supported by the Scottish Funding Council, and the working group includes four other Further Education Colleges. The main purpose of the project is to develop and pilot robust key performance indicators (KPIs) (focused initially on environmental aspects), and to consider how College performance against these KPI may be gauged, and subsequently presented in annual reporting.

The project is intended to develop a format which enables the clear communication of sustainability performance and key achievements of each participating College through annual reporting. Such information will also inform internal strategic decision-making, and encourage understanding of, and commitment to, sustainability improvement in College activities. The following information outlines the sustainability performance of John Wheatley College over the 2007/08 academic/financial year. This data provides second year data for the College's Easterhouse campus and base-line data for its East End Campus as session 2007/08 was the first full year of operation for this Campus.

## 2. Energy Consumption

### Quantitative Data:

The 2007/08 energy consumption performance is provided in Table 1.

In line with best practice, the factors used to convert energy consumption to tonnes of carbon dioxide have been sourced from the UK Department for Environment, Food and Rural Affairs. The Full Time Equivalent (FTE) figure is an estimate and includes both staff and learners adjusted to a 35 hour week.

Table 1 – Energy Consumption KPI by Campus

KPI	Units	Easterhouse Campus 2006/07	Easterhouse Campus 2007/08	East End Campus 2007/08	Total 2007/08
Total energy used	Kwh	1,105,000	1,161,000	733,000*	1,894,000
Energy Consumption per square metre	Kwh	230	243	114	169
Total CO <sub>2</sub> emissions associated with energy consumption	tonnes	400	409	246	655

\* The East End Campus total energy consumption excludes renewable energy generated on-site by the photovoltaic cells.

The above table demonstrates the dramatic effect that the sustainable technology investment in the East End Campus has had upon the carbon footprint of that building. One of the key components of the current College Estates strategy is to

reduce the carbon footprint of the Easterhouse campus by the use of sustainable technologies.

**Table 1 – Summary Energy KPI (both main campuses)**

<b>Energy Consumption KPI</b>	<b>Unit of Measurement</b>	<b>2007/08 Performance</b>
Total energy used	kwh	1,894,000
Total CO <sub>2</sub> emissions	tonnes	655
Average CO <sub>2</sub> emissions per square metre	tonnes	0.058
Average CO <sub>2</sub> emissions per Full Time Equivalents (FTE)	tonnes	0.068
Average CO <sub>2</sub> emissions per WSUM	tonnes	0.018
Proportion of total energy usage supplied by renewable energy source	%	37%

The main energy uses are for the heating and lighting of both campus buildings including the operation of the training restaurants and the construction training area at the East End Campus. 75% of the renewable energy is electricity sourced from a 'green tariff' contract. The remainder is generated on-site at the East-End Campus from renewable bio-fuels. It has not been possible to record the total energy generated by the photovoltaic cells at the East End Campus, this data should be available in future years, this may mean the total energy consumption at the campus is slightly understated and the proportion of renewable energy is also understated for session 2007/08.

**Initiatives to reduce overall energy consumption, and to promote energy efficiency and renewable energy sources:**

During the academic/financial year 2007/08 accounting period, 100% of the electricity consumed at the Easterhouse Campus was purchased through the Scottish Power Green Energy H<sub>2</sub>O Tariff (compared to 66% in session 2006/07). Scottish Power matches all energy purchased on this tariff with an equivalent amount of renewable hydro-power supplies to the national energy grid. This means that the equivalent of 46% of the total (gas and electricity) energy used at the Easterhouse Campus can be attributed to renewable energy sources (compared to 33% in the previous year). To improve on the overall energy performance of the Easterhouse Campus, the College is seeking to retrofit a number of energy efficiency and sustainable energy technologies. Photovoltaic cells and an air-source heat pump were installed at the end of this reporting period. In addition an aero-generator has been purchased and will be installed at the Easterhouse campus during session 2008/09. The College is also in the process of installing energy efficient lighting and a new reception area designed to reduce heat loss.

The East End Campus has been designed and constructed to be extremely energy efficient and utilises an extensive range of sustainable technologies to reduce overall energy consumption and to utilise on-site renewable energy sources. The impact of this is clearly demonstrated in the KPI data above. The technologies in place include a biomass boiler, air source heat pumps, high levels of insulation, photovoltaic cells, solar heating, and both passive and active energy control systems. Further improvements at the East End Campus are dependent upon improving the way the building is used by continuing to raise staff and student awareness of energy efficiency.

### 3. *Water Usage*

#### **Quantitative Data:**

The 2007/08 academic/financial year performance for water consumption at both campuses is provided in Table 2.

**Table 2 - Water Consumption KPI**

KPI	Units	Easterhouse Campus 2006/07	Easterhouse Campus 2007/08	East End Campus 2007/08	Total 2007/08
Total mains water consumption	m <sup>3</sup>	3,603	4,586	78	4,664
Water usage per square metre	m <sup>3</sup>	0.76	0.96	0	0.42
Water usage per FTE	m <sup>3</sup>				4.8

A rainwater harvesting system supplies the East End Campus with non-potable water which can be used for toilet flushing, for example, and thus reduces the required volume of mains supply water. The main water uses are for sanitary purposes and the training restaurants. In order to reduce water consumption, the Easterhouse Campus has been retrofitted with automatic supply cut-off washbasins.

### 4. *Materials and Products Consumed*

In agreement with the working group, the College has identified paper consumption as a homogenous product or material to be measured and compared over time. Table 3 provides detail of the College's paper consumption during the reporting period.

**Table 3 College Performance against Paper Consumption KPI**

Paper Consumption KPI	Unit of Measurement	2006/07	2007/08
Total paper use (white / colour paper 80gm)	Reams	5,173	6,063
Paper use per FTE (whole College)	Reams	5	5

The College is currently reviewing its use of electronic communications and the College web site in order to reduce paper consumption.

The College seeks to ensure efficient material/product usage throughout its activities wherever possible, for example, teaching-related construction materials are re-used several times in order to reduce the need for virgin materials.

Responsibility for procurement is now moving to Advanced Procurement for Universities and Colleges Ltd (APUC). The College has lobbied APUC and others to ensure that the sustainability agenda (including Fair Trade) is included in the contracts that they will negotiate on behalf of the sector.

In addition, the College is in the process of ensuring that the catering contractor at the new East End Campus will make Fair Trade produce available to learners and staff.

## **5. Waste Generation and Disposal**

Whilst the College fully recognises the importance of sustainable waste management and disposal, it has not been possible to obtain reliable and accurate data for the 2007/8 reporting period. The College complies with legislation, such as the Waste Electronic and Electrical Equipment (WEEE) regulations, and disposes of its waste responsibly. Towards the end of the reporting period the College commenced recycling its confidential paper waste, as a result, approximately 800 reams of paper was recycled. Recycling points which segregate waste are in place at the East End Campus, this waste is recycled, however, no reliable data on the quantity recycled is currently available. The College will continue to try and address this issue with its waste contractors. Furthermore the College will introduce similar recycling points to its Easterhouse campus during session 2008/09.

## **6. Transport**

The College has developed and implemented a 'Green Travel Plan', which is reviewed on a two-yearly basis. The Green Travel Plan is a set of measures designed to reduce the impact of traffic for journeys to and from the College. Initiatives include public transport, car sharing, cycle and pedestrian facilities and the provision of travel information.

The College ensures that learner and teaching staff timetables are prepared in a way that minimises travel between campuses, and that any unavoidable travel can be accommodated for by the use of public transport. Arrangements have been made to ensure that learners and staff have access to public transport and tailored public transport travel plans and bus timetables are available in both campuses.

The College has actively promoted walking and cycling as alternatives to other forms of transport.

## **7. Other Sustainability Initiatives**

### **BREEAM Rating of the new East End Campus**

The new East End Campus building was awarded with a Building Research Establishment Environmental Assessment Method (BREEAM) 'Excellent' Rating as being in the very highest category of sustainable building. The award recognises the low environmental impact of the building design in the following areas:

- Energy use: operational energy and carbon dioxide (CO<sub>2</sub>) issues;
- Health and well-being: indoor and external issues affecting health and well-being;
- Pollution: air and water pollution issues;
- Transport: transport-related CO<sub>2</sub> and location-related factors;
- Land use: greenfield and brownfield sites;
- Ecology: ecological value conservation and enhancement of the site;
- Materials: environmental implication of building materials, including life-cycle impacts; and
- Water: consumption and water efficiency.

This achievement further demonstrates the College's genuine commitment to sustainability and the wider environment. As previously mentioned, the College is now seeking to retrofit the Easterhouse Campus with sustainable technologies in order to increase operational efficiency and increase the proportion of energy and water which is obtained from sustainable sources.

#### **8. *Raising Environmental Awareness***

The College recognises the importance of minimising its environmental impact, and regularly publishes topical articles in its regular newsletter, displays awareness raising posters and other reminders to learners and staff. Environmental awareness is now an important part of the induction process for learners and is included within the curriculum for almost all learners. In addition the College has developed collaboration with Stow College, two Scottish Qualifications Authority National Qualification units.

At the East End campus the College has sought to ensure that the landscaping which surrounds this building includes flora and fauna which would have been present in the locality prior to the Industrial Revolution. It has also participated in a Glasgow wide project which has sought to provide nesting facilities for particular species of birds including swifts.

#### **9. *Local Biodiversity Action Plan***

The College is currently developing a Local Biodiversity Action Plan (LBAP), which will be implemented during the 2008/09 academic/financial year. The LBAP will establish conservation targets and outline the actions that the College will take to meet those targets. The LBAP will also seek to embed biodiversity in the curriculum and will meet the College's statutory duties established by the Nature Conservation (Scotland) Act 2004. The College has introduced bird boxes to aid biodiversity during 2007/08.