Aston University

ASustainability Walk

> Start of walk is from the main reception of the Main Building.

FOYER LIGHTING

the Main Reception in the South Wing has numerous lighting types throughout the space. During a high percentage of the time that the space is occupied, especially during spring and summer, natural light was found to provide adequate lighting levels in this space; hence the lights being left on were a waste in energy. These lights are now on an outside light sensor and a schedule, so that if the light outside is adequate or if the time is between 8pm and 5am the lights will go off.

A34

Caster

Flyover

Aston St

Coleshill St

> Walk outside and to the EBRI Building.

EBRI - The bioenergy industry is growing rapidly, driven by policies promoting the use of low carbon energy and waste recycling. EBRI acts as a focus for pan-European activities on scientific and technological aspects of biomass production, conversion and utilization of products used for renewable power, heat, transport fuels, hydrogen and chemicals.

This building is set to have two combined heat and power engines that will use a combination of different fuel sources to investigate their efficiencies. These engines will heat and power the building throughout the year. In times when electricity is in abundance it will be fed into the Student Guild to help with their electricity demands and reduce our need to buy in electricity, reducing our carbon emissions. For more information on EBRI click here

Corporation

Potter

> Walk towards Aston Business School stopping at the fountain

A4540

ROOF INSULATION

(Look up at the Main building roof) -Although you can't see it the roof of the Main Building was recently replaced with new roofing felt layer. At the same time 180mm of roof insulation was added to reduce heat loss within the building. The insulation part of the work was paid by the University's Salix Funding. In 2009 Aston University received £315,000 of revolving funds (25% funded by the University) for energy saving projects. The cost savings made from the energy savings is revolved back into the 'pot' for future projects to be paid for. This project saves around 380,000 kWh

Woodcock

W

whouth Chicks

LONG 7:0

city car scheme- the electric car points are part of Coventry and Birmingham Low Emission Demonstrator (CABLED) multi-million pound research project, analysing usage of over 100 low-carbon vehicles in the West Midlands. Aston's role is to

ELECTRIC CAR points and

analysis the usage of the vehicles themselves. The City car club lowcarbon hire car for staff and students to reduce personal car use, estimated for every CCC car 20 private cars are taken off the road.

> Walk down Aston Street towards the Potters Street entrance

KESTREL'S - a breeding pair of kestrels have been nesting on campus for around 30 years. Last two years 5 chicks been ringed by BTO. RSPB project on Aston kestrels. A webcam was installed two years ago to monitor Watt Queensway nest and this can be viewed online during the nesting season.

> Follow the path around the sports pitch towards the lake.

THE LAKE - amphibian hibernacula installed by wildlife group, Carillion Construction and Birmingham Black Country Wildlife Trust. Vegetation bank barriers to deter geese and encourage other wildlife. Lake relined with bentonite clay in 2009 to stop leakage, reducing water bill by 2% estimated.

> From EBRI walk around towards the entrance of the Aston **Business School**

ASTON BUSINESS SCHOOL - two voltage power optimisation units were installed into the Aston

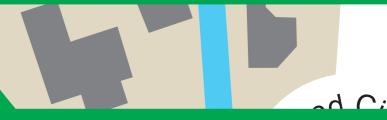
Business School in April 2010. These optimise voltage by dealing with the discrepancy between the actual supply voltage we receive (207V - 253V) and the optimum voltage our electrical equipment needs (220V). By installing these technologies we have saved between 6-8% of the electricity



> Walk over the road, looking out for any oncoming traffic,

towards the art sculpture in front of the library. LIBRARY'S THERMAL WHEEL – With the

recent refurbishment of the library, an addition to the new air heating and ventilation system was the installation of a thermal wheel. Typically a thermal wheel consists of small layers of aluminium sheets making a matrix of heat-absorbing material, which is slowly rotated within the supply and extract air streams. As the already warmed air is extracted from a building the heat is transferred onto this matrix and 'dumped' into the supply air. Thermal wheels can provide up to 85% of heating efficiencies reducing our fuel bills to heat the building using traditional methods.



> Walk down Aston Street towards Woodcock Street and follow the road right towards Woodcocks Sports Centre.

WOODCOCK SPORTS CENTRE - The

historic sports centre has recently had a multimillion pound refurbishment that included the upgrade of the buildings mechanical and electrical services. The building is now on the University's district heating system as well as having a highly efficient pool circulation system that reduces the use and speed of the swimming pool pumps depending on the turbidity of the water.

> Walk towards the two tall white chimneys on the other side of Coleshill Street.

ASTON'S ENERGY CENTRE - What used to be the University's boiler house is now an energy centre managed by Birmingham District Energy Company (BDEC). In this building there is a 1 MW and a 2 MW combined heat and power (CHP) engine. All the buildings that are on the University's district heating scheme have their heat provided from this centre. Around 60% of the electricity consumed on site is also generated by the two CHP engines. Having these engines help to reduce our carbon emissions by 25% saving around 5000 tonnes of CO2 a year. It is hoped that with the help from EBRI these engines will eventually be fuelled by a source of biofuel instead of using natural gas. Walk back around the lake towards Stafford Tower meeting the main pedestrian path of James Watt Queensway and then walking towards the start of Aston Street.

ASV PHASE 1 – The new halls of residences have a number of environmental credentials. The most eye-catching is the wind turbine on the roof. This turbine generates around 1000-3000 kWh a year, to offset the electricity usage of the ventilation system. The turbine only rotates if there is a constant minimum speed of wind, and will not rotate if the wind passes a maximum speed. The halls also have a grey water harvesting system, storing rain water off the roof that is then treated and filtered fed into the ground floor toilets, washing machines and helps towards the irrigation of the plants. An area of the building has a green providing efficient insulation to the building as well as a habitat for natural flora and fauna.

Jennens Rd

Aston St

> Go around the sports centre, turning right at Coleshill Street towards the Aston Brain Centre entrance.

BRAIN CENTRE - This building was designed with a VRV

heating system. If a room in the building requires cooling, heat is taken out of the room and instead of dumping the heat outside, it is used to heat the domestic hot water. Furthermore, if one room needs to be cooled and one heated, the heat from one is distributed to the other. If the hot water boiler needs a larger heat input, then two compressors work to extract warm air from outside and dispense the heat into the water.