

<p><b>Date of Meeting:</b></p> <p>19<sup>th</sup> January 2016</p>
<p><b>Title of Paper:</b></p> <p>Environmental/ Sustainability Activities Update</p>
<p><b>Purpose of Paper:</b></p> <p>To provide an update on some key sustainability and environmental initiatives underway at the University.</p>
<p><b>Intended Outcome:</b></p> <p>For information</p>
<p><b>Paper Submitted by:</b></p> <p>Roddy Yarr (Assistant Director, Sustainability and Environmental Management)</p>
<p><b>Any items protected from publication under the Freedom of Information Act, rationale and associated timescale that should be exempt from publication.</b></p>
<p><b>Key contact(s):</b></p>
<p><b>Date of Production:</b></p>



## 1.0 Introduction

This note outlines some of the key aspects that have been addressed in the first quarter of the 2015/2016 period. Since I took up this new post in mid-August, I have invested time and resource in reviewing our existing environment and sustainability management as well as meeting a range of internal and external stakeholders. A number of projects have commenced during the period.

## 2.0 Climate Change Reporting Duties

The University has submitted its report for the 2014/2015 period. These mandatory reporting duties fall out of the Climate Change (Scotland) Act 2009 which requires public bodies to report on their performance in relation to climate change and to bring Scotland into line with other mandatory reporting in the UK. The report is co-ordinated for the Scottish Government by Sustainable Scotland Network and the Environmental Association for Universities and Colleges. This is a pilot year for this new report which replaces and widens the scope of an existing reporting process (Universities and Colleges Climate Commitment for Scotland, UCCFS). You will see from the report that there is an emphasis on strategy and governance under the 'acting sustainably' element, as well as sections on climate change mitigation and adaptation. The report majors on reporting of emissions from fossil fuels, from energy, vehicle fleet, procurement, waste, travel and so on. It is likely that this new report will act as a method of benchmarking Universities within Scotland in the future. Estates Services will continue to manage the submission of data for this report as well as the management required for effective and responsible governance of climate change issues at the University.

### **3.0 Sustainability Policy and Governance**

During 2016, it is intended to establish a working group to develop a Climate Change and Sustainability Policy that supports the University's Strategic Plan. The group will determine the content of the policy, aims and objectives and develop an implementation plan.

### **4.0 Waste Resource Management**

A new initiative with a company called Brightgreen Contracts has been implemented. The initiative enables the University to reuse unwanted and usable furniture by redeploying this valuable resource to charities, social enterprises, schools and colleges. A report is generated that accounts for the material with a carbon saving generated. So far items have been reused from the Department of Naval Architecture Ocean and Marine Engineering at Kelvin Business Park and from the Curran Building. The attached examples at Figure 1 illustrate the positive outcomes. The Unity Project at Ibrox was the recipient of some of the furniture that has been reused.

This approach reflects a change in how 'waste' is perceived by the University. Where items that might previously have been considered a liability, instead these are now being treated as a resource with an inherent value, either financial or social. The benefit of this new approach is that it generates a revenue; it creates social benefit; and it aligns with government policy on waste to landfill and the creation of a circular economy. It also meets our strategy commitment on operational efficiency. How we manage our other waste resources is also now being reviewed.

### **5.0 Sensing Project**

The mobile 'Sensing the City' proposal from Future Cities is being supported by Estates Services. CENSIS were asked to co-ordinate deployment of a mobile air quality monitoring system that will be deployed on several Estates Services vehicles as they move around the John Anderson Campus. This activity will form Phase 1 of the Sensing the City project. Figure 2 is a schematic showing how the system will work.

### **6.0 CHP District Energy Project – Encouraging Knowledge Exchange and Student Engagement**

As part of the commitment to learning and knowledge exchange, the project has appointed 2 Sustainable Facilities Apprentices. Their contracts are funded for two years and they will be working with our mechanical and electrical engineering teams as well as becoming involved with the main contract when it is on site. Ross will be completing an SVQ in Facilities Management over two years while working at the university. Steven will be undertaking a National Certificate in Engineering Systems and an SVQ in Mechanical Maintenance.

The project has also engaged with the University's Engineering Academy and we have agreed to build into the contract a commitment for the contractor to engage with the students from the Academy.

### **7.0 Sustainable Transport**

#### **7.1 Transport Planning**

The University has supported the Council's proposal for a 20mph Road Traffic Order for the city centre. However, the University has also raised the issue of pedestrian and cycle access along Cathedral Street. Cathedral Street is identified as an issue within the Council's City Centre Transport Strategy 2014 -2024. With the expansion of student numbers, the development of the Sport Health and Wellbeing Building; and the opening of the City College in 2016, the activity on Cathedral Street is set to increase. Discussions have commenced with the Council on how to improve footway and traffic calming along this busy thoroughfare.

#### **7.2 Cycling**

There is a need to improve air quality in the city centre and the provision of greater options for alternative low carbon travel modes helps to deliver that aim. Our cycle parking capacity has been increased by 35% since 2014. At the end of phase two, it will be increased by 82%.

<b>Cycle</b>	<b>Parking</b>	<b>Added</b>	<b>Total</b>	<b>Notes:</b>
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Installations	Capacity	Capacity	
Cycle Parking Capacity 2014	-	230	Including spaces added recently via major projects e.g. TIC, John Anderson.

## 3,566 KG DIVERTED FROM LANDFILL FOR THE PROJECT

Cycle Parking Capacity 2015 - phase 1	81	311	Including recent expansion of GCC cycle parking on John Street and Montrose Street, and 10 pending cycle lockers (on order, awaiting installation).
Cycle Parking Capacity 2015 - phase 2	107	418	Including pending cycle parking capacity associated with the Henry Dyer landscaping. Based on existing budget, and equipment costs supplied by All Park Ltd. Additional expansion of GCC cycle parking has also been requested, but not included in these figures.

The University has embarked on the Cycle Friendly Campus programme run by Cycling Scotland. The programme commits the University to offering cycle parking, bike hire or bike loan schemes, cycle training, access to showers and lockers or personal travel planning. As part of this partnership, Cycling Scotland has also offered financial support in the form of match funding for the creation of a Cycle Hub facility outside the Students Union on John Street.

### 7.3 Electric Vehicles

A one week trial of a Nissan electric van was completed in September. The trial was a success and confirmed the vehicle's suitability for use in a number of roles on the John Anderson campus, such as a mail delivery van or security vehicle. The vehicle's ability to handle numerous stops and starts; its range of 80 miles; its carbon savings compared to diesel and; its ability to charge within a few hours means that this is the sort of technology that could be utilised to reduce air quality issues in the city centre.

### 7.4 Car Club

The University has been invited to be a corporate member by 2 car clubs in Glasgow (Co-Wheels and City Car Club). Corporate membership of one of these would enable staff and students to be registered so that they can use the CO<sub>2</sub> efficient cars via a simple on-line booking and charging process. The benefit of this is that it can enable staff and students to access vehicles within the city centre easily and cost effectively. It could theoretically reduce the number of vehicles being driven onto campus. It would enhance the student experience in offering a cost-effective and low carbon transport solution. One of the car clubs is also offering a revenue share for vehicles sited on the campus and used by the University. Uptake of this option would also enable the University to visually demonstrate deployment of alternative transport solutions.

### 8.0 Community Engagement

I am regularly attending the Townhead and Ladywell Community Council meeting in the 'Townhead Village Hall' in order to build understanding of community concerns and identify opportunities for partnership working. I understand that 30% of the population of the local area at Townhead is made up of students renting accommodation. I firmly believe that it is important to liaise with our neighbours so that we can both understand each others concerns. The community has already identified that it wishes to embark on improving it's existing community garden with help from students and staff at the University.

### 9.0 Ecology and Biodiversity

An ecological appraisal and habitat enhancement survey has been completed for the John Anderson Campus. This will inform the strategic 'Campus Identity' and 'Campus Realm' workstreams in terms of landscaping planning and the creation of a sustainable campus.

### 10.0 Fairtrade

The University offers Fairtrade goods in a number of its outlets. However, the University is not formally accredited so a working group has been established to co-ordinate the achievement of Fairtrade status. Liaison with the Students Association and Catering teams to achieve this is well underway.

### 11.0 Sustainable Labs (S-Labs)

The University hosted its first ever Sustainable Lab awards with the support of the Executive Dean, Faculty of Science, Professor David Littlejohn. Labs from SIPBS, PAC and Civil and Environmental Engineering, received awards. S-Labs is a national environmental accreditation programme that aims to make labs safer, more successful and sustainable.

Figure 1 Furniture Reuse Initiative

# The Bright Green Initiative & Reuse

& Bright Green Contracts



Benefactor: *The University of Strathclyde, Department of Naval Architecture*

Bright Green Contracts undertook work on behalf of The University of Strathclyde at the Curran Building. The number of individual items of furniture removed from this project totals approx. 109 items. (10 desks, 1 pedestal, 1 cupboard, 63 filing cabinets, 8 tables and 26 chairs.) This equates to a landfill diversion figure of 3566 KG with an impressive reuse rate of 100%.

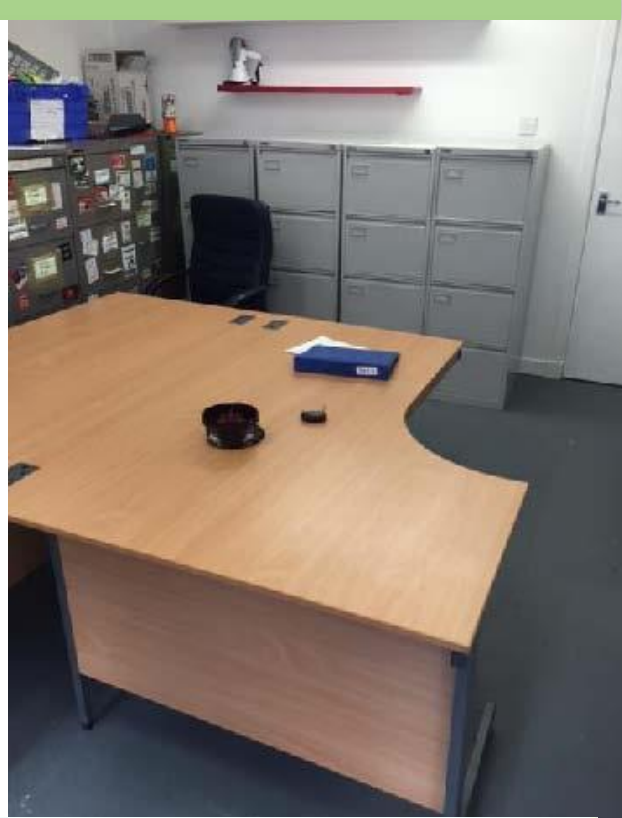
Utilising external redistribution channels on this project saw all goods being redirected through the Bright Green Network which will see the redistribution and reuse of furniture benefit charities, community projects, Social enterprises, members of the local community of both Glasgow and Edinburgh, and the general public.



The Unity Centre Glasgow – Providing practical support and solidarity to asylum seekers and other migrants in Scotland. The Centre facilitates the drop-in service for those in need of support. The charity provides invaluable support for asylum seekers and immigrants when facing deportation after being locked up in detention centres.

Run by volunteers, the group are in the process of relocation to a larger premises on Ibrox Street, Glasgow. With budget restraints and desks unsuitable for the work undertaken by the volunteers, the group called upon the support of both the University of Strathclyde and Bright Green to supply good quality office furniture for their staff.

Having recently removed a number of workstations from the Department of Naval Architecture Ocean and Marine Engineering of the University, Bright Green were delighted to be able to supply 3 full workstations complete with under desk pedestals to the charity on behalf of the University of Strathclyde.



Carbon emissions offset:  
152 kg CO<sub>2</sub>e

# 100% of furniture reused

Bright Green work towards 100% reuse figures when possible. Utilising a sophisticated reuse network and an infrastructure to facilitate both long term and short term reuse strategies, 100% of all items have been placed in reuse programs during this period of works for The University of Strathclyde. 100% percentage of goods were reused through the Bright Green's external reuse network supporting a number of reuse Initiatives in Glasgow, Edinburgh and the surrounding areas.

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# 14,909 kgCO<sub>2</sub>e

Emissions prevented from being released into the atmosphere through the avoidance of traditional disposal methods.

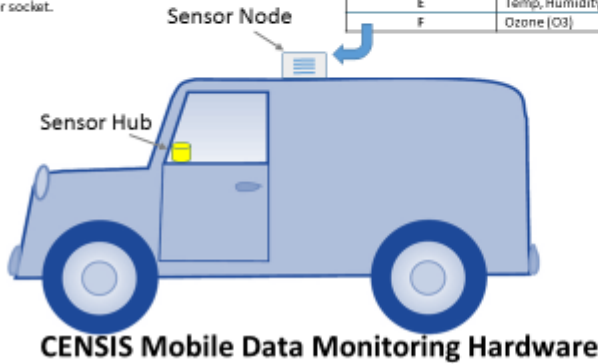
Figure 2

## Sensing The City - Mobile Data Monitoring Proposal



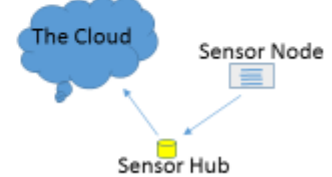
As part of the work of the Future Cities team based in The Innovation Centre building, Estates Services is assisting the University's partner organisation CENSIS to monitor air quality in and around the John Anderson Campus. The project will utilise a number of vehicles. Each vehicle chosen will be fitted with a shoebox-sized sensor node that is fitted with a number of air quality sensors. As the vehicles move around the campus during their everyday duties, the sensors will send data via digital radio to a data sensor hub located in the cab that then transmits the data via 4G and Wi-Fi to the 'cloud' – the data is then analysed & visualised on a map to better understand air quality across the city. The system requires no input from the driver as it is automatically activated when the vehicle is turned on – likely via the cigarette lighter socket.

Socket	Sensors
A	Carbon Monoxide (CO)
B	Nitric Oxide (NO)
C	Nitric Dioxide (NO2)
D	Particle Matter Sensor
E	Temp, Humidity, Pressure
F	Ozone (O3)



### Data Transmission

Sensor Node contains air quality sensors and uses a radio link to transmit data to a Sensor Hub in the cab. The Sensor hub has a GPS unit that ties together the location of the van and the data that is generated from the sensors. The data is uploaded to 'the cloud'.



Air quality sensors within a self-contained housing will be mounted onto the roof of several Estates Services vehicles. As the vehicles go about their normal duties, the sensors will measure air quality. Readings will be logged and downloaded at regular intervals. The results will be used to complete a picture of air quality within the John Anderson Campus area.

## Sensing The City - Example Output

The mobile Sensing The City proposal from Future Cities will use a mobile Air Quality monitoring system to build up knowledge of the air quality around the area of the John Anderson Campus. The data will be displayed in a range of formats, an example of which is given below.

