



# Further Education SUSTAINABILITY SUMMIT

24 March  
University of Leeds

## Workshop 4 - Achieving continuous improvement at City College Plymouth

*Laura Parry, Sustainability Officer*



# Challenging Connections

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‘Challenging Connections’ is about inspiring and challenging you to look again at your connections, your partnerships and the voices you are hearing and those you are not.

Please allow 5 minutes to discuss:

- How can you overcome any potential challenges?
- What connections you could make? How can people in the room help?
- Who do you need to challenge internally?

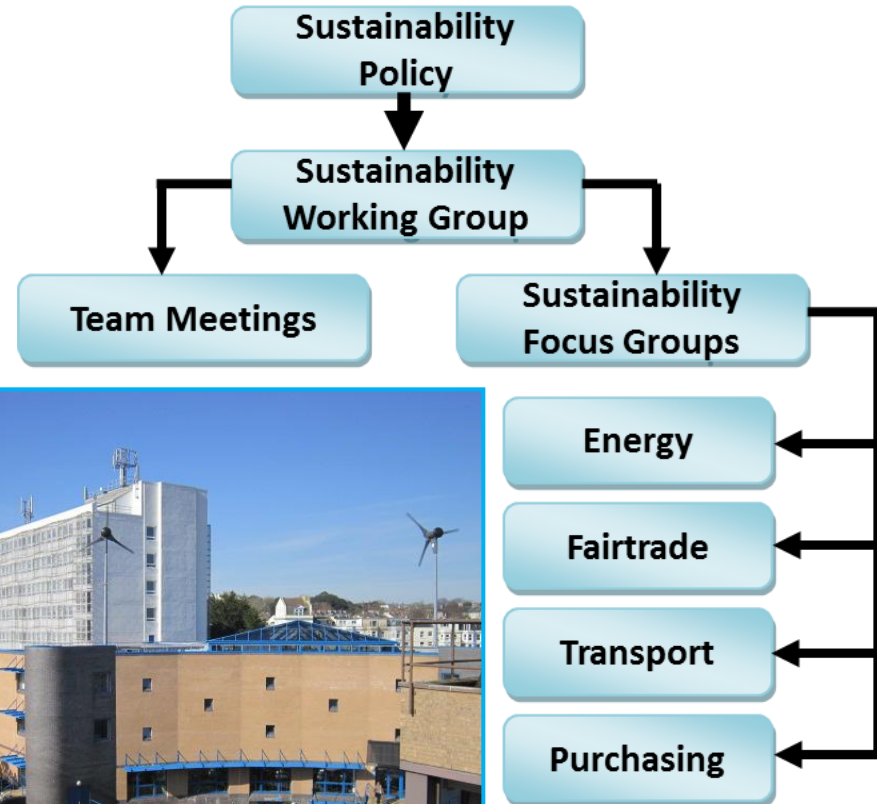
# Sustainability Structure



## Sustainability Policy

‘The College recognises the need to act with environmental responsibility across all its operations.’

This means both legislative compliance, as well as the wider social responsibility, to minimise environmental impact and promote sustainability’.

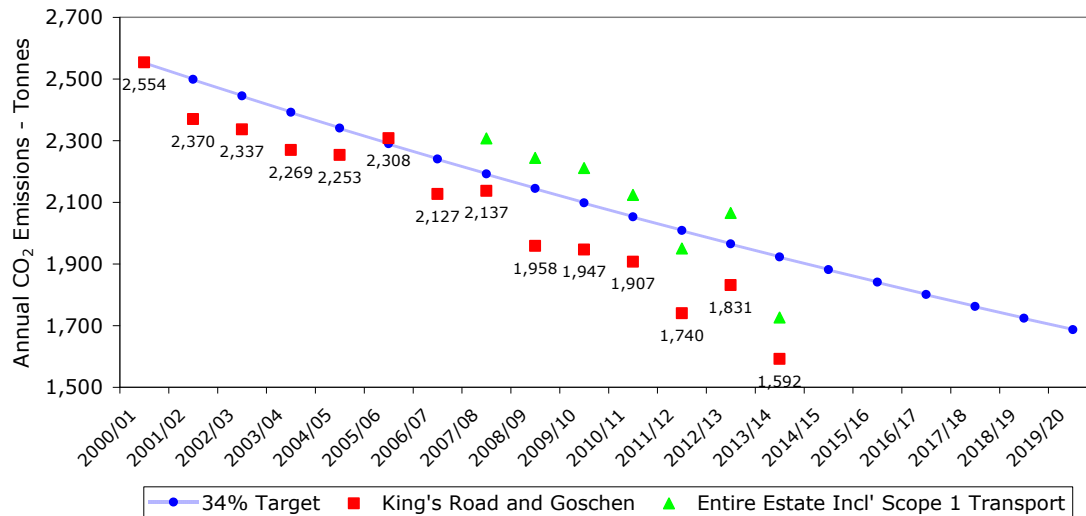


# Energy Management



## 34% carbon reduction by 2020

Overall Estate -  
Carbon Performance vs Target



- Main Building – 65
- Engineering – 65
- Construction – 67
- Hospitality – 63
- Goschen Centre - 46

### Display Energy Certificate How efficiently is this building being used?



City College Plymouth  
City College Plymouth  
Goschen Centre  
Salfish Road  
PLYMOUTH  
PL2 2DP

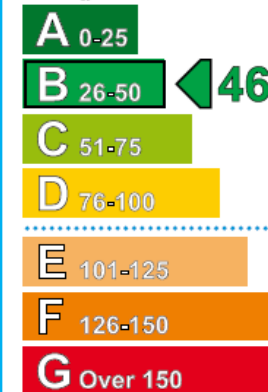
Certificate Reference Number:  
0816-1092-0809-0890-7691

This certificate indicates how much energy is being used to operate this building. The operational rating is based on meter readings of all the energy actually used in the building. It is compared to a benchmark that represents performance indicative of all buildings of this type. There is more advice on how to interpret this information on the Government's website [www.communities.gov.uk/epbd](http://www.communities.gov.uk/epbd).

#### Energy Performance Operational Rating

This tells you how efficiently energy has been used in the building. The numbers do not represent actual units of energy consumed; they represent comparative energy efficiency. 100 would be typical for this kind of building.

More energy efficient



#### Technical Information

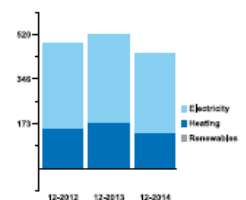
This tells you technical information about how energy is used in this building. Consumption data based on actual meter readings.

Main heating fuel: Natural Gas  
Building environment: Heating and Natural Ventilation  
Total useful floor area (m<sup>2</sup>): 11442  
Asset Rating: Not available

	Heating	Electricity
Annual Energy Use (kWh/year)	50	50
Typical Energy Use (kWh/year)	200	80
Energy from renewables	0%	0%

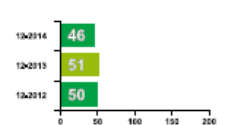
#### Total CO<sub>2</sub> Emissions

This tells you how much carbon dioxide the building emits. It shows tonnes per year of CO<sub>2</sub>.



#### Previous Operational Ratings

This tells you how efficiently energy has been used in this building over the last three accounting periods.



#### Administrative Information

This is a Display Energy Certificate as defined in SI 2007/0901 as amended.

Assessment Software: DCLG, ORCalc v3.6.2  
Property Reference: 86088810000  
Assessor Name: Mr. Andrew Burt  
Assessor Number: EES002015  
Accreditation Scheme: Electrical Energy Systems  
Employer/Trading Name: The Green Consultancy  
Employer/Trading Address: Unit D, Second Avenue, Westfield Ind Estate, Radstock BA3 4DP

Issue Date: 15-10-2014  
Nominated Date: 30-12-2014  
Valid Until: 29-12-2015  
Related Party Disclosure: Contractor to the occupier for EPBD services only

Recommendations for improving the energy efficiency of the building are contained in the accompanying Advisory Report.

# Energy Management – Past Projects

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- ✓ Upgrading of lighting to low energy (T8 – T5)
- ✓ Automatic meter reading - £24K saving in 1<sup>st</sup> yr
- ✓ Speed control of Hospitality ventilation – £5K saving in 1<sup>st</sup> yr
- ✓ Hospitality building - induction hobs installed
- ✓ Old oil fired boilers replaced with condensing boilers
- ✓ Tower block - thermal cladding, architectural mesh & new windows
- ✓ Engineering building – refurbished to BREEAM ‘Very Good’
- ✓ Centralised computer shut down and print strategy
- ✓ Removal of electric heaters/ installation of efficient hand dryers
- ✓ Photovoltaics on construction & sports hall roofs (total 50 kW peak)

# Energy Management – Future Projects

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## Salix Funding

1. Large scale replacement of lighting in main building with LED
2. Improvement of heating controls in main building
3. Insulating jackets to be fitted to valves and pumps in main boiler room.



# Energy Management – Resources



## ‘Action for Sustainability’ Moodle site

https://moodle.cityplym.ac.uk/course/view.php?id=2108

Staff Intranet

Course: Action for Sustaina...

You are logged in as Laura Wellington (Logout)

### Action for Sustainability

Home ► My courses ► Business Support ► Estates ► Action for Sustainability

Navigation

- Home
- My home
- Site pages
- My profile
- Current course
  - Action for Sustainability
    - Participants
    - Badges
    - General
    - Topic 1
    - Topic 2
    - Topic 3
    - Topic 4
    - Topic 5
    - Topic 6
    - Topic 7
    - Topic 8
    - Topic 9
    - Topic 10
  - My courses
  - Courses

Learning Resources

Supporting Success

The sustainability folder has been set up to assist both staff and students with incorporating the theme of sustainability into teaching and learning.

If you would like to provide any feedback on this site please e-mail Laura Parry (Sustainability Officer) at [lparry@cityplym.ac.uk](mailto:lparry@cityplym.ac.uk) or call 01752 956903

News forum

College Sustainability Quiz

Topic 1

Sustainability

City College Plymouth Documents

- City College Plymouth Sustainability Policy 2014/15
- Embedding Sustainability into City College Plymouth
- Green Colleges Declaration
- Journey to sustainable colleges (City College Plymouth as a case study)
- Sustainability Presentation for Staff Forum
- NEW EMPLOYEEES - Sustainability at City College Plymouth

Sustainability Working Group

## College case studies

### Case Study: Wind Turbines



#### Key Facts

Date of Installation:	2005
Initial Costs:	£70k
Ongoing costs:	£1000 pa (current costs)

#### Scope of Project

The College was successful in winning funding through the Clear Skies programme to install two wind turbines on the roof of the Innovation Centre. The primary drivers behind the project were to provide a demonstration site for wind turbines actually installed on a building, and to inspire others to take up interest in renewable energy. The idea for the installation came about in 2000 during the development of the Innovation Centre upon which they are located. The steel sub-structure of the building was designed and built to accept them at a later date.



#### Technical Background

The installation consists of two 6kW direct drive (no gear box) turbines sit directly onto the steel sub-structure of the roof with vibration damping. Each mast is 9 metres tall and the turbines are 5.5 metres in diameter. The blades are able to self regulate the pitch to take account of varying wind speeds.

A manual braking system is also included so the turbines can be mechanically shut down. The electrical output from each turbine is connected to a controller which converts the three phase AC to DC current, which in turn feeds through two inverters which converts it back to AC and also synchronises it with the mains electricity supplied to the site. The inverters also provide a protection system against loss of mains electricity, or exceeding under or over voltage limits. The output from the turbines is monitored meters which are connected to loggers. The data is collected through the college's Energy Remote Monitoring (ERM) system, and can be analysed in the same way as the rest of the college's electricity.

# Energy Management – Resources



## Sustainability quiz

### City College Plymouth Sustainability Quiz



This quiz has been developed to introduce you and your friends to sustainability at City College Plymouth. The College are making every effort to become more sustainable and therefore this quiz has been designed to be completed on line to help save paper.

The aim of the quiz is for you to have fun using the internet, College Moodle site and education boards located around the different sites. You can complete the quiz individually or in pairs/teams. If you get stuck why not ask a member of staff on your travels to help you out. Don't forget your note pad and pen to jot your answers down – good luck!



## Eco poster competition

### GO ECO MATE!



Turn off the lights



Close the door



Close the window



Recycle your waste



Switch computers off when not in use

Report problems to [estatesmaintenance@cityplym.ac.uk](mailto:estatesmaintenance@cityplym.ac.uk)  
For emergencies at Kings Road: 07770 597359 Goschen: 07802 474710



# Energy Management – Resources




## Energy Remote Monitoring tool


City College Plymouth Energy Remote Monitoring

**2. How to log on**

In your Internet Explorer browser address field, type the Internet address <http://smart.tac.com/erm> then press the 'Return' button.



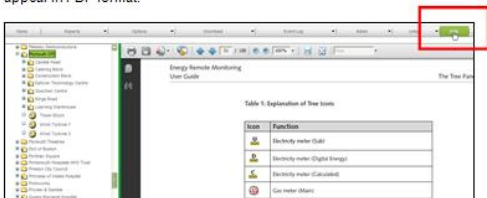
Login page is displayed, as illustrated below.  
Type your user name: CITY COLLEGE PLYMOUTH  
Type your password: Pa55w0rd  
Click the Submit button.



Once you have accessed the site maybe worth saving as a favourite item on your Windows explorer screen.

**3. How to find help**

Move the mouse to the tool bar indicating help as shown below where the ERM manual will appear in PDF format:



The file can be saved to your local machine for future reference.

Revised 13/03/2012 Page 3 of 16

## Energy Learning Resource



city college plymouth

Kings Road Main Building

### What is Sustainability?

'Sustainability' is action to maintain a healthy life and planet now and into the future.

Saving Energy • Saving the Environment • Saving Money

Home Beating the chill Bubbling hot Cool shades Cosy rooms Taking control Technology in action Bright lights Check us out

### Beating the chill

Four new super-efficient gas boilers which are now better controlled produce

**60%** less CO<sub>2</sub>

than the old ones, helping to keep the College warm!



Saving Energy • Saving the Environment • Saving Money

Home Beating the chill Bubbling hot Cool shades Cosy rooms Taking control Technology in action Bright lights Check us out

# Waste Management – The Past!



- Waste Management – External Evaluation 2004
- Hazardous Waste Regulations Compliance Report 2007
- Waste Management Strategy 2008

# Waste Management – Now!



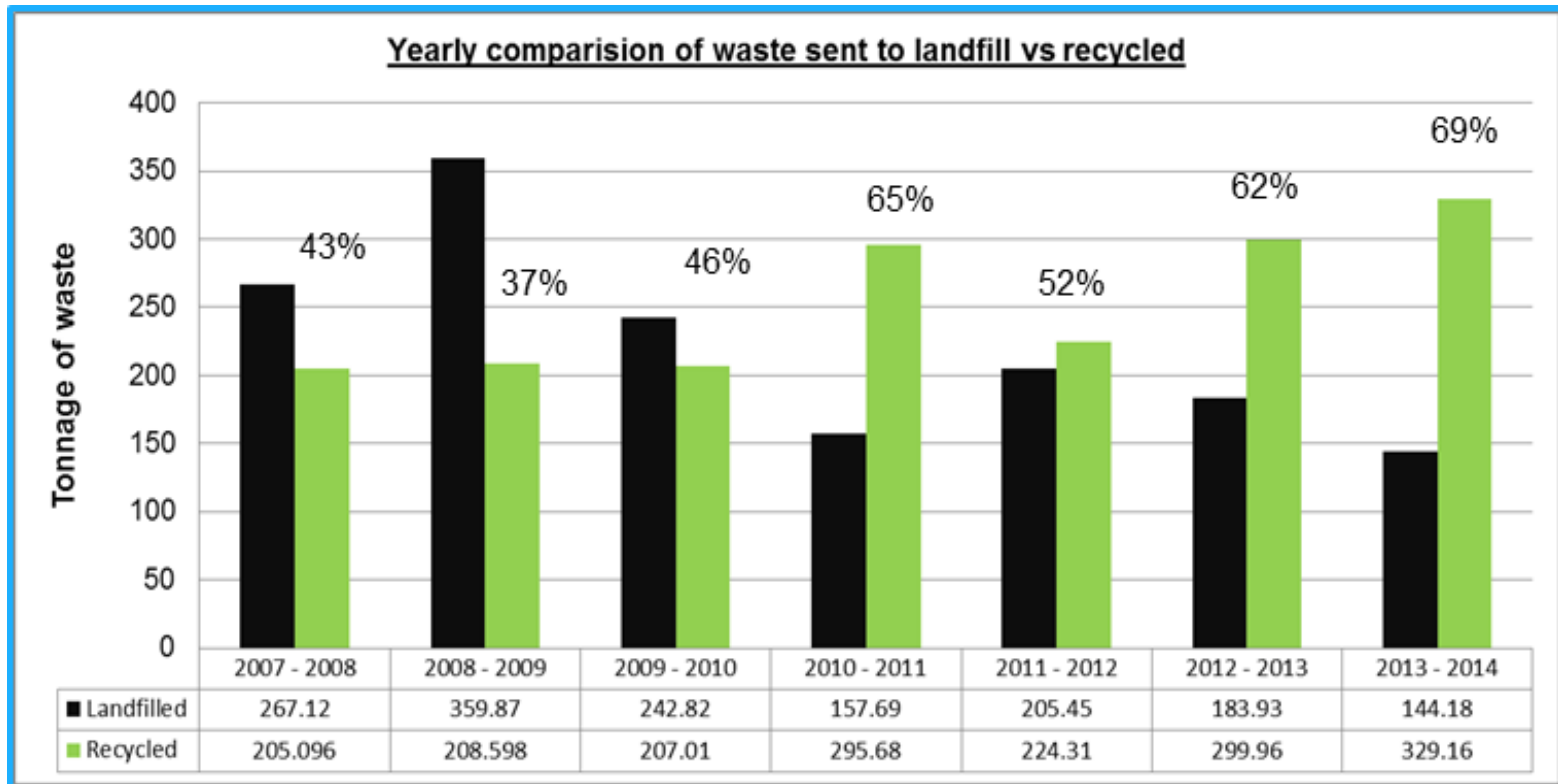
- Legally compliant
- Segregate over 15 different materials
- The College use ~17 contractors
- Past funding
- Second hand bins
- Current recycling target = 69%



# Waste Management



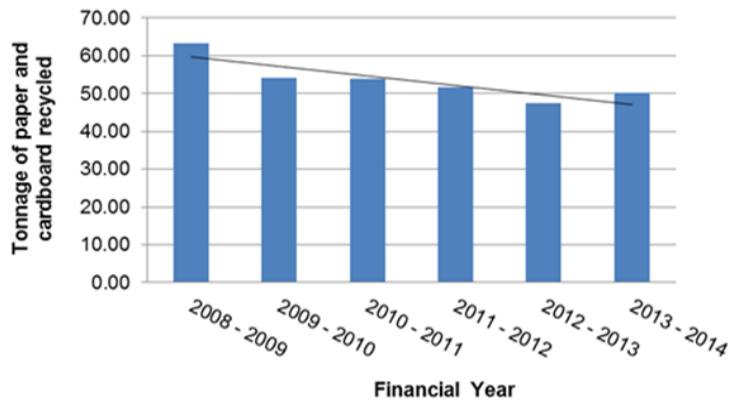
- Monitoring = good management
- Analysing & reporting = progress



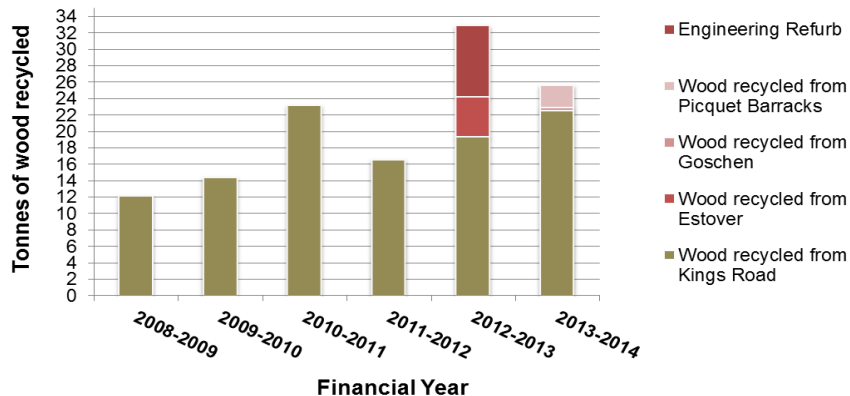
# Waste Management – Analysis



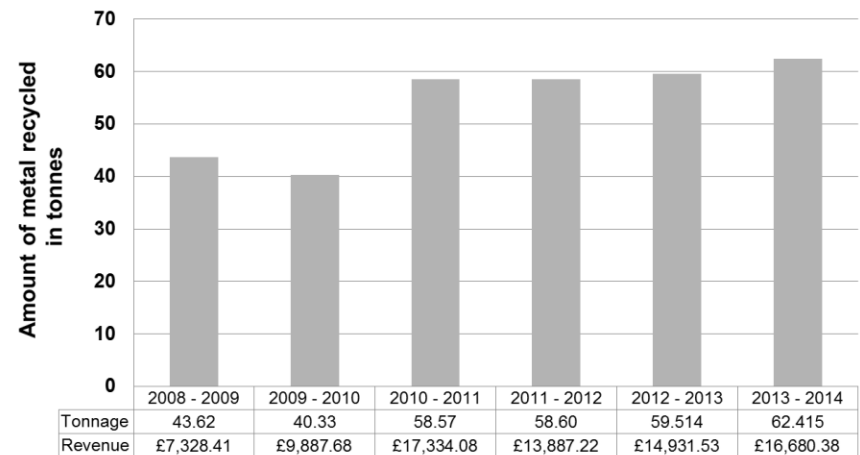
**Graph to show total amount of paper and cardboard recycled across all College sites**



**Graph to show amount of wood recycled from College over the past 6 years**



**Graph to show annual amount of metal consumed and recycled at City College Plymouth**





# Waste Management – Audit



- Waste diverted from sewage/ landfill = ~56.24 tonnes
- Estimated saving = £1,781.64

# Waste Management – Spills



## HANDLING AN OIL OR CHEMICAL SPILL



### 10 Step check list:

1. **Prevent further contamination**  
Cut off the source of the spill. If it is outside cover any nearby drains.
2. **Identify the hazard**  
Try to identify the spill; this will help you deal with the spill more effectively.
3. **Fetch the spill kit**
  - > For small spills use the absorbent granules located in buckets within workshop.
  - > For large spills use the spill kit in the yellow bag located on the wall.
4. **Suit up**  
Ensure you use PPE (Personal Protective Equipment) and check its effectiveness.
5. **Contain the spill**
  - > For a small spill cover the area with absorbent granules.
  - > For a large spill use the sock to circle the spill & place pads over spill to absorb.
6. **Make the area safe**  
Restrict access by sealing off the area by means of barrier tape or a notice.
7. **Get help**  
Evacuate the area and notify others working nearby.
8. **Look for injuries**  
Check yourself and those working nearby for any type of injury.
9. **Disposal**
  - > Oil spill – put absorbent material in the 'Oily Rag Drum' (speak to Technician).
  - > Chemical spill - put absorbent material in yellow hazardous waste bag and give to Technician who will arrange disposal by contacting the Sustainability Officer.
10. **Report**  
All spills over 1 pint (1/2 a litre) to be reported to:  
Sustainability Officer (Ext: 6803 [lperry@cityplym.ac.uk](mailto:lperry@cityplym.ac.uk))  
Health and Safety Officer (Ext: 5311 or 5730 [ssowden@cityplym.ac.uk](mailto:ssowden@cityplym.ac.uk))

- ✓ Correct use of facilities
- ✓ Registered waste carrier
- ✓ Procedure if a spill occurs
- ✓ Training DVDs (Estates intranet site)
  1. Oil/ Chemical spill
  2. Bodily fluid
  3. Sharps disposal kit
  4. Mercury spill kit

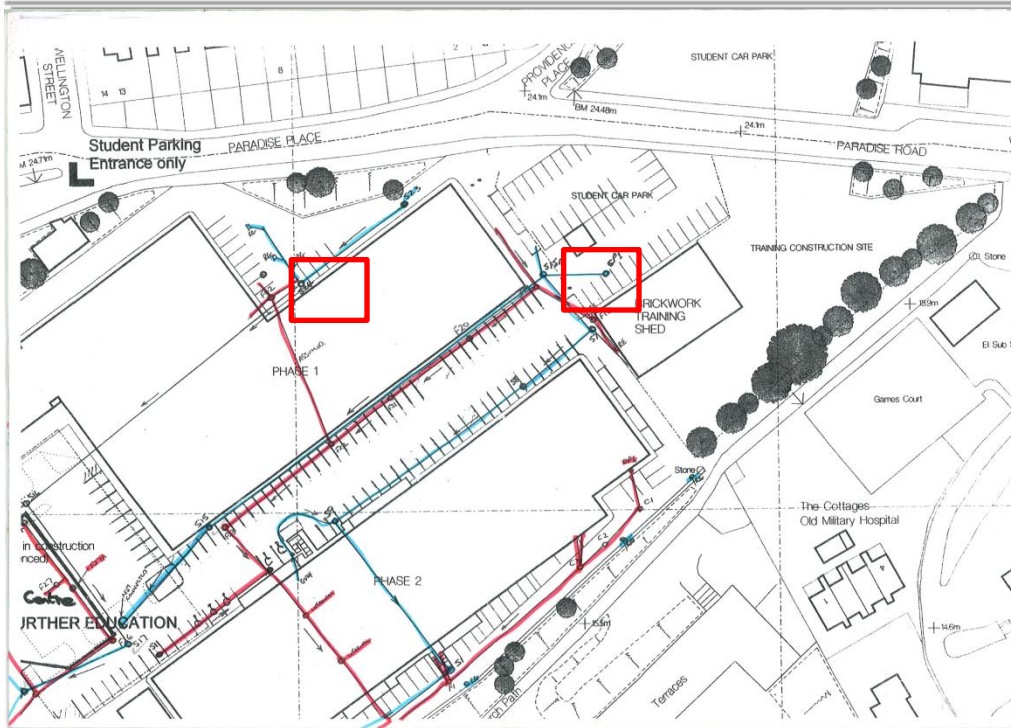
### Oil or Chemical spill kit:

- Disposable Nitrile gloves
- Absorbent granules
- Plastic disposable apron
- Polythene over sleeves
- Scoop & scraper
- Bonded wipes x 2
- Yellow hazardous waste bag





# Water – Managing Discharge



— Foul sewer  
— Storm water



Peninsula House, P.O. Box 4, Rydon Lane, Exeter EX2 7HS  
Freephone 0800 169 11 44 Minicom 0800 169 99 65 Fax 01392 423792

01203 264-047

Ms Laura Wellington  
City College Plymouth  
Kings Road  
Devonport  
Plymouth  
PL1 5QG

Direct Line: 01566 778734  
Direct Fax: 01566 775390  
Your Ref:  
Our Ref: CityCollege/MinDis

7<sup>th</sup> September 2011

Dear Laura,

**Ref: Consent to Discharge – City College Plymouth – Kings Road, Plymouth**

Please accept this letter as the approval by South West Water Limited (SWW), as the Sewerage Undertaker, for the discharge of effluent (Water Industry Act 1991) comprising settled plastering effluent from the premises known as **City College Plymouth, Kings Road, Devonport, Plymouth, PL1 5QG** subject to the following:

1. The discharge consists solely of settled plastering water and settled paint washings.
2. The plaster sediment trap and paint wash settlement unit are routinely maintained and waste removed on regular intervals.
3. The discharge is connected, via your foul drains, to the public foul sewer.
4. The volume of discharge is <200 litres per day.

While the minimal nature of this discharge remains, and unless we notify you to the contrary, we do not propose to apply the full provisions of trade effluent control legislation. You are required to notify us forthwith of any change in the process, materials used or any other circumstances likely to alter the nature, composition or volume of the effluent.

In accordance with the SWW charges scheme 2011 – 2012, there is an annual fee of £98.00 for the approval and registration of the proposed discharge by trade effluent staff.

South West Water Ltd reserves the right to review the status of the discharge and liability for trade effluent charges at a future date. A member of SWW's scientific staff may wish to visit, inspect and sample the discharge at some future time.

Yours sincerely

  
Jessica Leow  
Trade Effluent Scientist



INVESTOR IN PEOPLE  
[www.southwestwater.co.uk](http://www.southwestwater.co.uk)

SOUTH WEST WATER LIMITED. REGISTERED IN ENGLAND No. 2360065  
A SUBSIDIARY OF PENNON GROUP PLC. REGISTERED OFFICE: PENINSULA HOUSE, RYDON LANE, EXETER EX2 7HR

# Uganda Project



- All Nations Christian Care
- Human Technical Training Centre
- Set up in 2009 to send 'useable' equipment to Lira
- Yearly audits by College staff





# Uganda Project





# Uganda Project - Exchange



Bishop Issac Aswa  
with College students  
and staff (2012)

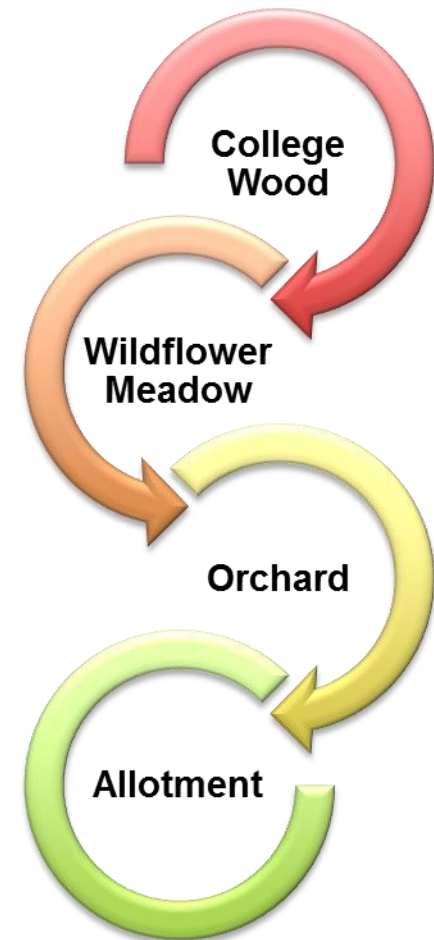


Kalisto, Principal of the  
Human Technical Training  
Centre (2014)

# Biodiversity & Conservation



- Statement
- Objectives
- Policy and legislation
- Internal documents
- Supporting surveys and reports
- External documents and websites
- Monitoring review and evaluation
- Biodiversity Management Plan (BAP)





# Biodiversity & Conservation: Wildflower Meadow





# Biodiversity & Conservation: College Wood





# Biodiversity & Conservation: Mini Orchard





# Biodiversity & Conservation: Allotment



# Fairtrade



- Fairtrade Policy
- Fairtrade Focus Group
- Equality and Diversity
- Products
- Plymouth City Fairtrade Steering Group
- Awards





# Fairtrade – Student Involvement



# Transport



- Transport Policy
- Transport Focus Group
- Travel survey
- Free College buses (£218,319 per year)!
- Subsidised student season tickets (£55,852)
- Facilities
- Cycle to work scheme – 2 schemes 38 signed
- Electric charge point
- Staff training day
- Events



# Questions & Answers

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- How can you overcome any potential challenges?
- What connections you could make? How can people in the room help?
- Who do you need to challenge internally?

Laura Parry, Sustainability Officer – [lparry@cityplym.ac.uk](mailto:lparry@cityplym.ac.uk)  
Gilbert Snook, Head of Estates – [gsnook@cityplym.ac.uk](mailto:gsnook@cityplym.ac.uk)