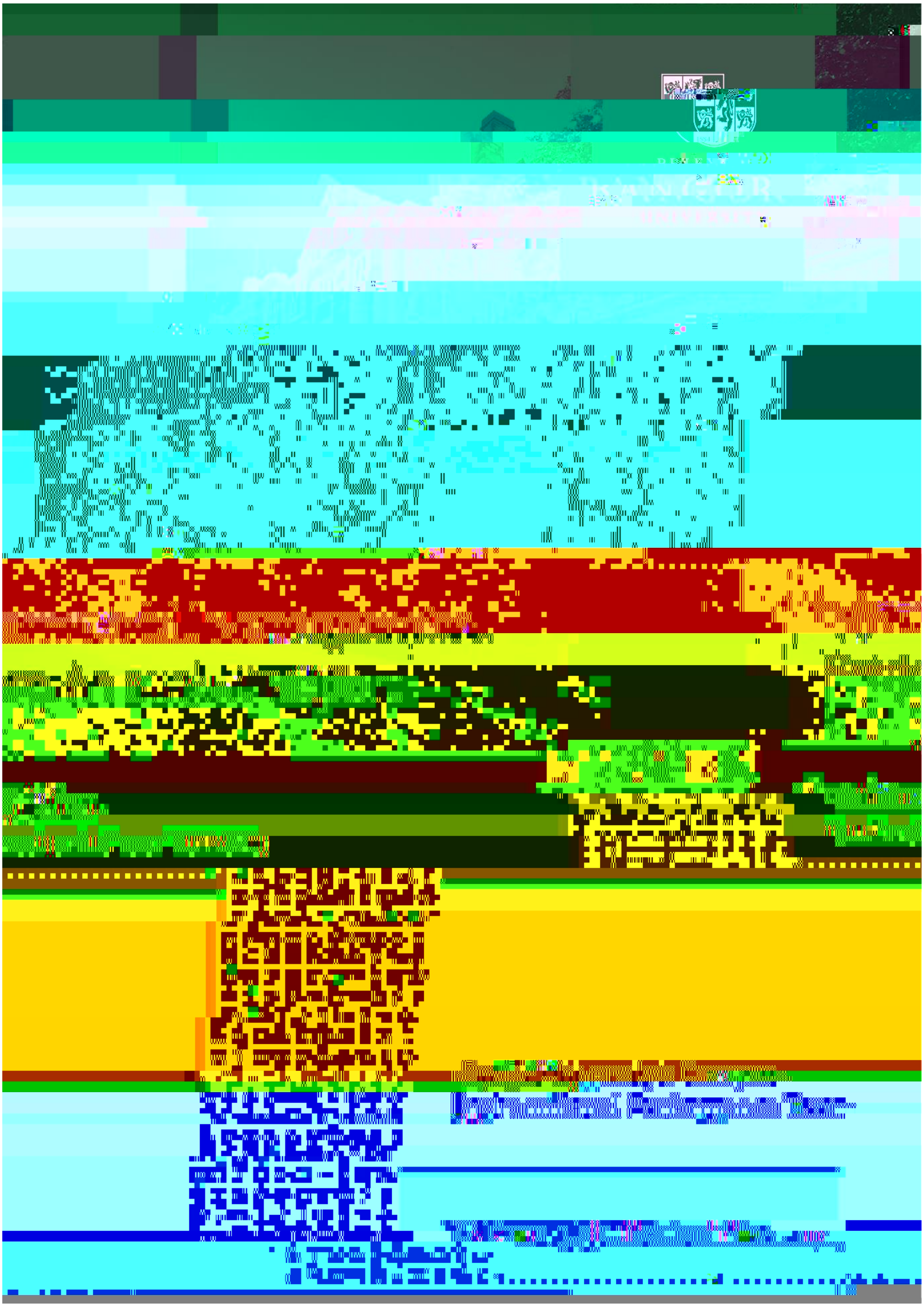

List of Tables

waste in the future. The PaCS facilities team ensured the waste was correctly categorised into the relevant skips for disposal off site.

In 2019, Bangor University was ranked 20th of the 154 UK institutions assessed. This was an improvement on the previous assessment published in 2017, when Bangor placed 29th.
Due to Covid-19 the 2020 assessment by People & Planet has been postponed to 2021.

During the last Annual Management Review meeting, there was significant discussion about how People & Planet assessed and awarded marks for not having investments in fossil fuels. Although Bangor University has not had investments in fossil fuels since 2016, the Ethical Investment Policy did not explicitly state that the University would never invest in fossil fuels, as required by People & Planet.
During the 2019/20 academic year the Executive & the Vice-Chancellor agreed to sign the People & Planet Fossil Fuel Divestment Pledge, including the commitment to never invest in fossil fuels. At the time of writing, the People & Planet website has not been fully updated to reflect this – the issue has been raised with People & Planet.


The 2019 UI Green Metric assessed the environmental and sustainability performance of 780 Universities and Colleges from all over the world (the ranking includes institutions from every continent with the exception of Antarctica).

Bangor University was ranked as 10th in the world and 4th in the UK.

Despite receiving a slightly higher score than in 2018, Bangor dropped 2 places in the global rankings. This seems to be due to the fact that other institutions are improving at a faster rate. Of the nine institutions ranked above Bangor in 2019, the average increase in score compared to 2018 was 272 points, whereas Bangor's score only increased by 25 points.

Welsh Government Circular Economy Capital Fund 2019-20. The application was successfully awarded £124,599 to cover the cost of the new bins required in offices and learning spaces plus an electric vehicle to be used in the collection and transportation of waste on site. New bins for Halls of Residences are being funded by Commercial Services.

The new bins purchased were selected specifically because they were made from 100% recycled plastic. Purchasing products made from recycled materials is an essential part of the circular economy, ensuring there is a viable market for recycled materials.

In addition to the new bins, plans are being developed to make more of a feature of recycling points around the University to encourage people to dispose of their waste responsibly. Options are being developed by the Waste Coordinator, Communications and Engagement Coordinator, PaCS representatives and a designer.

Initially it had been planned to roll-out the new system in June 2020, however the restrictions in place as a result of Covid-19 have meant this has had to be delayed until 2020/21.

The Waste Awareness Week campaign ran for its third consecutive year in 2019. Seventeen waste related events were held over nine days from Saturday 28th September to Sunday 6th October, including visits to 311 flats across Ffriddoedd and St Mary's sites to discuss recycling and waste with new students. Other events included visits to student properties in the wider community, two litter picks plus one beach clean visit, a waste-themed film night, a careers session for students with an interest in working in waste management and a talk at Treborth on sustainable alternatives to plastic plant pots.

In total, 865 people attended the events and 149,307 were reached through the online/social media messages. Additional details on this will be given in the section 7.9 Awareness & Communication.

As already reported, the new semi-segregated recycling system will be rolled-out during the 2020/21

Minimise resource consumption

Minimise consumption of Energy – reduce consumption of energy by 3% compared to the previous year as a function of a) $m^2$ useable floor area

During 2019/20 it was discovered that there had been significant issues with meter readings used for billing purposes for Neuadd Garth dating back to 2017. The discovery and correction of this issue resulted in a dramatically larger bill for Neuadd Garth in October 2019 that was not reflective of actual consumption.

Given the size of the "correction" within the bills for Garth during October 2019, it was decided to adjust the data in-line with the manual readings to prevent the 2019/20 gas consumption being overstated by roughly 1,100,000kWh, or nearly 6%. The adjustment process has meant gas consumption for 2018/19 was higher than reported, as detailed in Appendix 1.

The data presented below are the adjusted figures, as per the explanation in Appendix 1. This report

The majority of the increase in purchases/use of heating oil can be attributed to Treborth Botanic Garden. Available records show that in 2018/19 the garden purchased 8,466 litres of heating oil, but in 2019/20 purchased 35,539 litres, a 320% increase. See Appendix 2 for further information.

It is possible that this variation is related to the replacement of the boiler at Treborth between September 2018 and January 2019. Whilst a temporary oil boiler was in place during the replacement, there was also need for additional heat from electric heaters – it is not known how much reliance there was on the electric heat as opposed to the temporary boiler. Energy data does seem to show an increase in electricity use at Treborth during the replacement period (within the 18/19 academic year) and a reduction in oil use.

It is recommended that oil consumption at Treborth be more carefully monitored to see if increased use continues and if further investigation is required.

themselves – the matter has been raised with PaCS as a matter for further investigation when conditions and resources allow.

2. The conversion of Canolfan Brailsford to Ysbyty Enfys
During the 2019/20 academic year, Canolfan Brailsford was converted into Ysbyty Enfys; a Covid-19 field hospital to increase NHS capacity to care for people needing hospital care as a result of Covid-19 infection.
Having closed as a sports facility on 20th

*Summary of 2019/20 DEC performance*

Minimise resource consumption

: Minimise the consumption of Water – reduce consumption of Water by 2% compared to the previous year as a function of a) $m^2$ useable floor area and b) FTE students & staff

| | | 2019/20 | Compared to 2018/19 | Compared to 2005/06 |
|---|---|---|---|---|
| Total Water Consumption | | 118,212.00 $m^3$ | -22.6% | -27.2% |
| a) Water consumption useful floor area | | 515.8 litres | -22.5% | -42.9% |
| Performance against Target 3b | | | | |
| b) Water consumption (students & staff) | | 9,943.00 litres | -23.6% | -42.9% |
| Performance against Target 3b | | | | |

*Table 12*

Total water consumption during 2019/20 fell by 22.6% compared to 2018/19. This could, in part, be attributed to the reduction in on-site operations and activities as a result of Covid-19 restrictions. However, in comparing the pre-Covid period of 1st August 2019 – 31st March 2020* with the same period during the 2018/19 academic year, water use was still nearly 21% lower during the 2019/20 period (see table below).

*Figure 5*

For water consumption per FTE, Bangor University was 121

CEPT would like to create a toolkit and/or decision guide for making travel choices, particularly related to business travel, as a basis for an institution-wide conversation about how we travel for business.

As was discussed in last years report, there are a number of ways in which travel data could be improved to help present both a more accurate and more complete picture of travel related emissions.

1. Inclusion of miles travelled in mileage/expenses claims

The current system relies on a large amount of data processing to derive an approximation of miles travelled based on the financial value of expenses claims, in order to then calculate carbon emissions. Accuracy of reporting would be improved if the number of miles travelled (and ideally the means of travel) were recorded alongside the financial cost of mileage expenses

2. Inclusion of litres in fuel purchases

As with mileage, the current system involves a backward calculation from the financial value of an expenses claim for purchases of petrol/diesel based on an average cost per litre, in order to derive litreage and be able to calculate carbon emissions.

3. Separate recording of fuels purchases by use

Currently all petrol/diesel purchases are recorded under the two cost codes 810 for petrol and 811 for diesel, regardless of the intended use of the fuel. This means that the fuel could be for road vehicles, agricultural vehicles, machinery, boats or potentially for heating – there have been a few large purchases coded under 811 for Diesel that appear to be for heating oil at Henfaes paid for using a purchase card. These are currently being filtered out manually as the different uses, particularly heating, have different implications for reporting.

4. Generally having more details on expenses claims

Some claims just contain a date range and some include details that make it seem like the claim has been miscoded. For example, Visa Application and Wood Stakes were both claims made against the Petrol cost code 810.

5. Ensuring we have a complete picture

a) Boats. To date, reporting has excluded fuel used for boats. Whilst the Prince Madog is out of the scope of the EMS, the University owns and uses other boats that use fuel and contribute to the University's carbon emissions – in future this data should be captured and reported on. It is not immediately clear how or where this data is recorded – there are some Petrol claims obviously for boats, but it is not clear if this is all encompassing.

b) Non-road based travel. Equally, business travel not made by road has not been reported on to date. This means business travel by coach, train, ferry or aeroplane are not included within the University's business travel emissions. As an institution that has declared a Climate Emergency, this is not good enough. In order for these modes of travel to be properly reported from and environmental/emissions perspective, it would be necessary to make the changes detailed above regarding the detail included in claims. The financial ETQ EMC w TJETQq0.0

Reduce the University's contribution to global climate change

Achieve year-on-year reductions in greenhouse gas emissions (Scope 1, 2 & 3) associated with University operations as a function of i) $m^2$ useful floor area and ii) FTE students & staff

The table below provides details of emissions by Scope.

- are those generated directly from sources in the control of the reporting organisation. This includes combustion of fuel such as gas, oil and LPG, petrol and diesel.
- are those generated indirectly from energy generation, primarily from the production of electricity.
- are those generated indirectly from other activities and includes emissions associated with water treatment, waste disposal, grey-fleet and procurement/supply-chain emissions. Based on the questionable nature of the procurement emissions available at this time, these are not being included in the total emissions reported below.
- The table also includes emissions from agricultural activities undertaken by the University, which fall within Scope 1 as being in direct control of the reporting organisation, and carbon sequestered by University land holdings. These figures were calculated a number of years ago and would benefit from reassessment.

The emission sources included in the total reported here are as follows:

| | |
|---|---|
| Gas Consumption | 3,375.24 tonnes $CO_2$e |
| Oil Consumption | 158.87 tonnes $CO_2$e |
| LPG Consumption | 5.28 tonnes $CO_2$e |
| Petrol0 g BDC q159.rmissi | |

| | |
|---|---|
| Waste[3] | 11.56 tonnes $CO_2$e |
| Grey Fleet | 150.82 tonnes $CO_2$e |
| Scope 3 Total | 278.91 tonnes $CO_2$e |
| | |
| Sequestration | -800 tonnes $CO_2$e |
| | |
| Total with location-based electricity | 7,348.41 tonnes CO2e |
| Total with market- | |

Progress against Target 5

*Figure 9.*

As was reported last year, our accounting of Scope 3 (indirect) emissions is in need of improvement. Currently, our Scope 3 emissions reporting is limited to water use, sewage disposal, waste disposal and business travel (as far as it is currently recorded).

Procurement-related emissions are completely unaccounted for in our current reporting. This is in part due to the scale and complexity of procurement-related emissions and the process of calculating them.

This now needs to be backed up with an action plan including more significant carbon-reduction targets for each year between now and 2030. The Sustainability Lab, CEPT and PaCS are working to develop an action plan. Discussions around reduction targets will be presented separately to this report.

As previously discussed in Section 7.3 Energy, CEPT and PaCS are working on the development of proposals to reduce the University's carbon footprint to zero by 2030. The proposals will focus on both reducing energy demand and developing on-site generation where feasible.

Equally, as outlined above in Section 7.6.5 Climate Emergency, there is need to develop an a

Since Covid-19 restrictions came into force, the curator of Treborth Botanic Garden has been very proactive in sharing updates from the garden on social media, including tours of specific collections and how-to videos.

Treborth Botanic Garden has 930 followers on Instagram, 922 followers on Twitter and 1,961 followers on Facebook, and uses these platforms to promote the positive biodiversity work being done at the Garden and across the University.

No surveys of students, staff or visitors took place during the 2019/20 academic year due to Covid-19 restrictions.

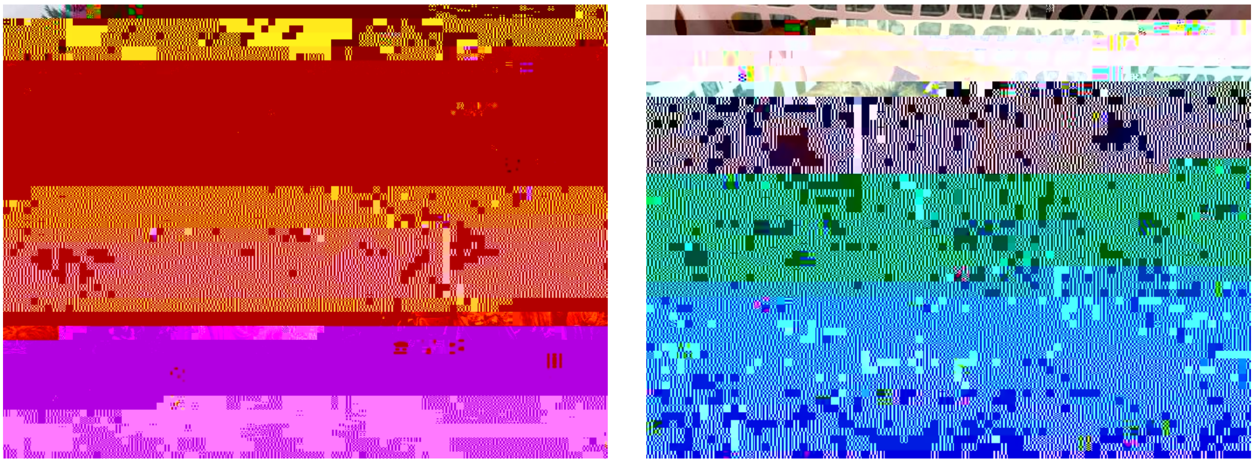

*Figure 11*

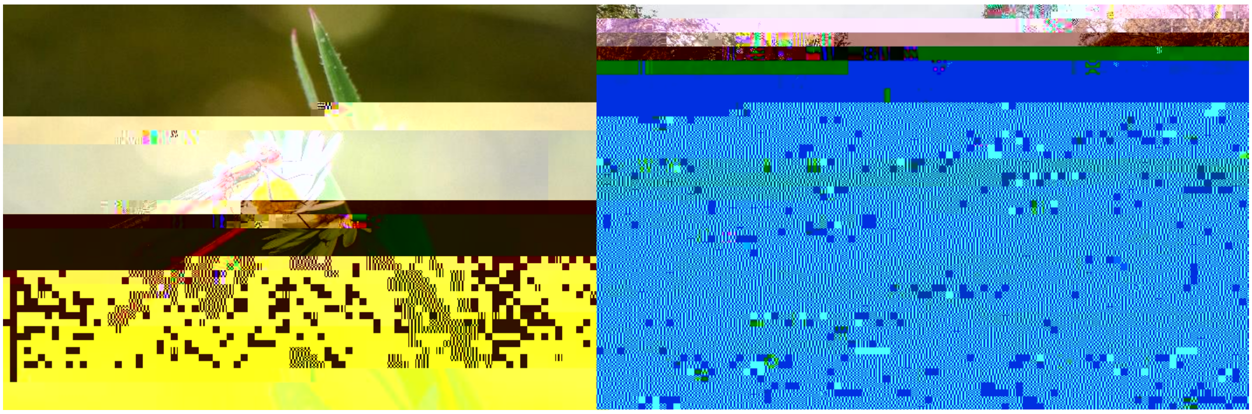

*Figure 12*

## Increase unimproved grassland/wildflower meadow areas across the University estate

| | |
|---|---|
| Performance against Target 6b | |

Despite a lot of work to identify sites with potential for expanding wildflower meadow areas around

: Embed sustainability within the procurement process

. Conduct Sustainability Risk Assessments for all contracts over the value of £25,000 and use Community Benefit Measurement Tool data for all contracts over the value of £1 million

Where appropriate, ensure contracted suppliers have an Environmental Management System

Conduct Sustainability Risk Assessments for all contracts over the value of £25,000 and use Community Benefit Measurement Tool data for all contracts over the value of £1 million

| | |
|---|---|
| Performance against Target 7a | |

It is not always possible or practicable to ask suppliers to demonstrate that they have an Environmental Management System e.g. sole traders, small consultancy firms or where a market is particularly limited.

Over the course of the 2019/20 year, environmental/sustainability principles have been applied in procurement exercises in ways that are not sufficiently captured by the targets set out above.

- Prospectus Printing Service – Bidders were requested to provide details on sustainability processes e.g. use of paper sourced from sustainable sources, use of quality vegetable-based inks, recycling practices for waste products. They were also asked to provide certification with regards to any environmentally friendly practices.

- Supply and maintenance of gym equipment – bidders were asked how the environmental impact of vehicles, waste and similar could be reduced and how the proposed gym equipment could assist the University to reduce its carbon emissions.

The University's Procurement Strategy is due for renewal; however, a new strategy will not be developed until after the publication of a new University Strategic Plan. The Procurement team have been familiarising themselves with ISO20400, a non-certified international standard for Sustainable Procurement. It is hoped they will be able to develop a new Procurement Strategy around this standard.

New Procurement Targets have been discussed and any proposed changes will have been circulated separately to this report.

Raise environmental awareness and awareness of the UN Sustainable Development Goals amongst students & staff through improved communication and involvement

Increase level of digital engagement

Establish a baseline for non-digital/face-to-face engagement

. Increase student awareness of the Sustainability Lab and environmental/sustainability related events & opportunities from surveys

Increase number of departmental/school/service webpages that

| | |
|---|---|
| Performance against Target 8a | |

*Table 19*

| | | | |
|---|---|---|---|
| I have heard of the Sustainability Lab | No Data[2] | 38% | 34% |

Due to the very low level of awareness of the EMS and Environmental Incident reporting, the Sustainability Lab and CEPT utilised one of the monthly “Putting the World to Rights” sessions (formerly Sustainability Think Tanks) to give an introduction to the EMS. Twenty-one people attended, primarily staff, making the session the best attended “Putting the World to Rights” event of 2019/20. Further online sessions on the EMS and related issues are being planned for the 2020/21 year with intentions to record the sessions and make them available online after the “live” event for those who were unable to attend.

able to have an impact on these platforms there will need to be an allocated and defined sustainability/environment marketing budget.

Promoting environmental/sustainability messages internally has previously been most successful via email to the all-staff and all-student lists. Recent changes to University rules on the use of the all-staff list are expected to negatively impact readership of environmental/sustainability messages, such as the Papur Gwyrdd, and attendance at events. Experience suggests greater readership/attendance is generated by our direct emails than inclusion in the Staff Bulletin.

Intentions are to continue publishing Y Papur Gwyrdd monthly, along with a new programme of monthly “Putting the World to Rights” sessions.
Based on the outcomes of the staff survey, it is clear that there needs to be more communication around the EMS and related procedures – it is a requirement of the ISO14001 standard that staff are kept informed about the EMS and how it may relate to them and their roles. These messages can easily be incorporated into both Y Papur Gwyrdd and the “Putting the World to Rights” sessions, the challenge is around encouraging engagement. It is also hoped that recording of sessions related to the EMS, and other environmental topics can be created and made available online.

It will remain to be seen whether moving events such as WAW to be online only decreases overall engagement, or if people who would not attend in-person events are actually more inclined to engage virtually.

- KAH00002: Arts, Humanities & the future

Phase 1 was successfully concluded as follows:

| Phase 1 – Preliminary Mapping Exercise (Nov - Dec 2019) |
| --- |
| Phase 1 of the project involved preparing a preliminary map of all undergraduate and postgraduate modules against the UN Sustainable Development Goals (SDGs). The aim of this phase was to assess the information on PIP related to each module to determine the extent to which the existing legal curriculum aligned with or explicitly addressed one or more of the 17 identified goals to be achieved globally by 2030. This phase of the project was carried out on time and the results of the mapping exercise can be found [here.](#) |

Unfortunately, the Covid-19-related disruptions that have occurred since March 2020 have necessitated changes being made to the original methodology and time-frame, but ultimately the project is likely to result in a better overall outcome as a result of these changes. Phase 2 and Phase 3 will be re-designed in the Autumn 2020 to foreground and integrate sustainability into internal reviews of all undergraduate and postgraduate programmes occurring over the next 18 months. Through the School's re-validaŎ

: Minimise the impact of the University estate, and any development activities, on the environment

Set environmental objectives for all major construction projects (over £100k) and evaluate the effectiveness of these following completion of the projects

| | |
|---|---|
| Performance against Target 10 | |

The ReFit energy efficiency programmes installation phase was completed at the end of 2019. The project has now moved into the monitoring and verification stage, where the performance of the measure installed is monitored and assessed against the savings projected by the contractor.

The significant change in operations and activities brought about by the Covid-19 restrictions has made the process of reporting on delivered savings much more difficult. All initial savings projections were based on the assumption of ongoing normal operating conditions. Work is ongoing with the contractors to ensure that reporting is valid and accurate, and that the objectives set out for the project are met.

Further to this, and as previously discussed,CEPT

Proposals for the 2020/21 targets will be circulated separately.

Communications relating to environmental management at the University are primarily received via email, either to the environment@bangor.ac.uk or sustainability@bangor.ac.uk email addresses, or directly to specific members of CEPT. Some messages are also received via social media.

During the 2019/20 year a total of 59 enquiries were received by email, mostly from students but also from staff and external organisations or individuals.

Of these 39 were questions, enquiries or other requests for information in relation to events, campaigns or other elements of environmental management and sustainability at the University. This included one Freedom Of Information request on a wide range of environmental/sustainability topics and two emails from members of staff who are also members of Extinction Rebellion, again with a wide range of environmental/sustainability questions.

Nine emails received were criticisms or complaints, six from members of staff, two from students and one external.
Three were concerning overheating in the Main Library after the new EcoPilot heating control system had been fitted – this was raised with the manufacturer/installer and rectified.
Other concerns raised included access to bicycle parking behind Thoday, poor heating control and windows in Thoday and smells from the waterless urinals in Pontio.

Five emails were complimentary, all related to the announcement of the 100% renewable electricity supply.

Other emails were suggestions of areas students or staff would like Bangor to investigate or improve on, largely related to waste, recycling and sustainability of promotional freebies.

The Sustainability Lab and CEPT have also sent out a large number of communications across a range of platforms and in-person over the course of the 2019/20 year;

- Talks to new students as part of Welcome Week

- Sustaina

Explanation of Garth Gas billing errors and corrections

In October 2019, the size of the gas bill for Neuadd Garth raised concerns. The bill for October 2019 put the gas consumption for Garth at 100,829 $m^3$, when records showed Garth had only consumed 6,101$m^3$ during the whole of 2018/19. On investigation it became clear that the large bill received in October 2019 was the result of a correction for underbilling, seemingly caused by meter reading issues, dating back to 2017.

Looking at bills dating back to August 2017, it appears that at some point during that month a problem occurred which prevented the collection of data from the meter by the supplier. As a result, Garth was billed on the basis of 0$m^3$ gas consumption from September 2017 until May 2019 – a total of 20 months. Cross-checking against the manual readings taken by PaCS confirmed that this must be the case, as the manual reads showed consumption throughout this period, totalling nearly 1,035,000kWh.

Although bills began showing consumption again from May 2019, it seems that data being received by the supplier was still incorrect in some way as it did not reflect the missed consumption and consumption recorded was still lower than manual readings of the meter were suggesting.

| | Garth Gas Consumption as reported from incorrect bills | Adjusted Garth Gas consumption figures calculated from manual reads |
|---|---|---|
| 2017/18 | 11,662 kWh | 608,461 kWh |
| 2018/19 | 67,799 kWh | 550,204 kWh |
| 2019/20 | 1,450,047 kWh | 369,479 kWh |

Given the size of the “correction” within the bills for Garth during October 2019, it was decided t adjust the data in-line with the manual readings to prevent the 2019/20 gas consumption being overstated by roughly 1,100,000kWh, or nearly 6%. The adjustment process has meant gas consumption for 2018/19 was higher than reported, as set out in Table X below.

| | |
|---|---|
| Previously reported Total Gas Consumption 2018/19 | 20,509,594.07 kWh |
| Adjusted Total Gas Consumption 2018/19 | 20,991,999.07 kWh |
| Difference | +482,405 kWh (+2.35%) |

Going forward, the adjusted figures for 2018/19 and 2019/20 gas consumption will be used for reporting purposes as they more accurately reflect actual consumption.

Re: Oil consumption at Treborth Botanic Garden

Section 7.3.3, pages 19-20

This addendum has been produced as it has been highlighted that the Annual Environment Report does not sufficiently represent the situation regarding the consumption of heating oil at Treborth.

For the avoidance of doubt, the available data for oil deliveries to Treborth over the past three years are shown below.

| | 2017/18 | 2018/19 | 2019/20 |
|---|---|---|---|
| Heating Oil (litres) | 44,212 | 8,466 | 35,539 |

As shown in the table, the reported oil consumption for 2019/20 is significantly higher than reported consumption for 2018/19, but still less than 2017/18.

From discussions with the Curator at Treborth, it seems the 2018/19 figure is likely to be a case of misreporting, or lack of data capture. Across all sites still using heating oil, reported consumption was down by 55% in 2018/19 compared to 2017/18.

Rather than suggesting an issue with oil consumption at Treborth, this reinforces the issues highlighted in the report regarding the availability and quality of data. Oil and LPG has been a particularly challenging area when it comes to data collection and retention, but it is not the only area of the report affected by such issues.

There are a number of possible ways in which the oil & LPG data issue could be resolved. In the first instance, asking the supplier whether it is possible to get electronic invoices/delivery notes instead of the paper versions currently supplied, would make a notable difference. If this is not possible, it may be possible to enable those on-site accepting the oil deliveries to enter information from delivery notes into a database directly, rather than going through the process of paper delivery notes being sent on to PACS for a member of the PACS team to enter into the same database.

This should form part of the wider discussion on how to improve the accuracy of data capture and reporting.