





2023

CLIMATE RISK RISK REGISTER

Taking the first steps towards a climate resilient tertiary education sector



Foreword

October 2023

The Adaptation Scotland programme exists to provide advice and support to help organisations, businesses and communities prepare for, and build resilience to climate impacts.

Scotland's climate has changed, and will continue to do so. Over the last century temperatures have increased, sea levels have risen and rainfall patterns have changed, with increased seasonality and more heavy downpours. These changes are projected to continue and intensify over the coming decades. We can expect future changes in climate to be far greater than anything we have seen in the past.

We are delighted to see EAUC lead in developing this Climate Risk Register and Guide, tailored to the tertiary education sector, to support their efforts to adapt to these impacts. In climate adaptation, we tend to use the active verb *adapting* rather than *adapted*. This subtlety recognises that our response to climate risk must be ongoing, responding to and anticipating new changes, rather than reaching a static point, there will always be a need to take stock, check in and align our ambitions with new challenges.

The same goes for guidance and tools, and this resource embodies the approach required – tweaking, collaborating and a bit of *testing what works (and sometimes what doesn't)*. We commend Further and Higher Education (FHE) institutions – those who are starting out, those who are already adapting – for their efforts in facing up to one of the biggest challenges ahead.

Combining local knowledge and lived-experience with scientific evidence, trends and projections is something we are passionate about. Ultimately, those working and studying in our tertiary institutions are the best receptors of local needs, vulnerabilities and opportunities for those institutions. Indeed, we hope that these tools will be used widely by university and college communities around Scotland, reaching broader than the Sustainability lead and to the heart of these institutions and the communities and regions they serve.

We congratulate the team at EAUC Scotland, through their Scottish Funding Council-funded programme, for the development of these resources. Further guidance and support is also available at the Adaptation Scotland website and we would encourage you to visit or get in touch with our team for further support.

Aoife Hutton, Climate Resilience Manager, Sniffer

The Adaptation Scotland programme is funded by the Scottish Government and delivered by the sustainability charity Sniffer.

Executive Summary

With record heat temperatures broken in summer 2023 (<u>BBC</u>, <u>United Nations</u>) and the wettest two-day period for Scotland occurring in October 2023 (<u>Met Office 2023</u>), we need to progress and scale up our adaptation efforts. Whether or not humanity rises to the mitigation challenge, a certain amount of climate change is already locked in, and it will require adaptation efforts.

This guide aims to piece together the main resources available on climate change adaptation in Scotland with a Further and Higher Education (FHE) lens. We bring in:

- 1. Best practice examples of universities and colleges preparing their institutions for present and future climate scenarios.
- 2. Resources and guidance from across Scotland and the United Kingdom.
- 3. A bespoke Climate Risk Register tool and Borders College case study of the tool in practice that you can complete and modify for your own institution's needs.

This guide is **primarily for institutions at the beginning and intermediate stages** of their adaptation journey. This guide is not meant as a comprehensive guide to the latest research in adaptation best practice. If you would like more in-depth information, we recommend contacting the <u>Adaptation Scotland</u> programme for the latest available research for those wanting to lead the sector. This guide is focused **primarily on the Scottish context, but is applicable across the UK**.

We recognize there are a wealth of different adaptation methodologies and guidance out there, with no agreed benchmarking standard for the FHE sector. We have decided to focus on the Adaptation Scotland programme's guidance and methodology to keep the process straightforward for those starting out on their adaptation journeys. This does not discredit any other methodology and we encourage institutions to use guidance that best suits their situation. As the field of climate change adaptation matures and sector standards emerge, we will update this guidance to reflect this.

We understand that this is a heavy topic and incorporates themes that may be hard to reckon with, especially on an emotional level. Working on climate change adaptation takes a degree of bravery and we commend you for being here on this journey. Take time to look after your health and wellbeing before taking the next right step. We hope this guide might assist in guiding you through the swathes of information out there to working through the actions step by step. We praise you for engaging with this topic and potentially being a pioneer at your institution, introducing adaptation to colleagues that may not have engaged with climate change mitigation before, let alone adaptation. Together we can make Scotland's education institutions resilient to climate impacts and help them flourish for centuries to come.

Lean on EAUC and our community of experts to help you on this journey. If we don't know the answer, we will find someone who will. If you have any questions or comments, please get in touch: scotland@eauc.org.uk.

This guide has been developed in collaboration with <u>Sniffer</u>, as part of the <u>Adaptation</u> <u>Scotland programme (funded by the Scottish Government)</u>, and delivered as part of EAUC Scotland's <u>Step-Change for Sustainability programme</u>, funded by the <u>Scottish Funding</u> Council.

Glossary

Climate change adaptation

- The <u>Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme</u> (SCCAP2) defines adaptation as 'responding to the changes that we have seen in our climate over the last few decades, and preparing for the challenges that we will face as our climate continues to change.' (SCCAP2, page 14).
- This might include having an on-site power generator in case of disruption to the network, tiling flooring or removing carpets from accommodation that are at risk of flooding, relocating vulnerable buildings, whether because of their usage or because they are at risk from coastal erosion, or building sea walls to protect infrastructure. (Adaptation Scotland FAQs). As well as these physical measures, adaptation can be putting systems in place like contingency planning, buddy-systems or local contact groups for emergencies.

Climate change mitigation

- The <u>Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme</u> (SCCAP2) defines climate change mitigation as 'efforts to reduce or prevent emissions of greenhouse gases, which have a direct impact on global average temperatures, and reducing the current concentration of CO₂ by enhancing sinks (for example, increasing the area of forest)' (<u>SCCAP2</u>, page 14).
- This could include using cars less, flying less, buying local food, refurbishing boilers to make them more efficient and reducing energy consumption (<u>Adaptation Scotland</u> <u>FAQs</u>).
- Some mitigation actions can also have adaptation benefits; for example, installing solar panels reduces GHG emissions, but also reduces reliance on the electricity grid in the event of failure during extreme weather.

Climate change resilience

Resilience is the capacity of an organisation and its systems to survive and thrive in
the face of potential disruptions. The changing climate has the potential to create
new types of disruption, as well as exacerbating risks that already exist ('Adapting
universities and colleges to a changing climate: Making the case and taking action'
guide 2019).

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Introduction

"Our climate is changing, and no matter how quickly we reduce greenhouse gas emissions, some major effects are locked in. This will influence nearly every area of our institutions, from delivery of learning, teaching and research, to student recruitment, staff health & wellbeing, supply chains, insurance premiums and the profitability of investments. The results will not always be catastrophic, but unless we systematically assess the risks, we are driving blind.

Taking action doesn't necessarily mean 'reinventing the wheel' or spending significant amounts of money. Universities and colleges already have well established processes for managing risk – factoring in climate change simply means applying a different lens and set of expertise.

How will our key assets and business processes stand up to a future of more extreme weather? New investments in infrastructure may be around for decades to come – how future-proof will they be? Now is the most cost-effective time to ask these questions and ensure our institutions are climate-ready."

Text adapted from EAUC's 'Adapting universities and colleges to a changing climate: Making the case and taking action' guide 2019.

Why should we adapt to climate change?

"We are already seeing evidence of Scotland's climate changing. Over the last few decades our climate has warmed, sea-levels have risen, rainfall patterns have changed and we have been impacted by extreme weather events. Temperatures have been increasing, with the last decade being the warmest since records began. Rainfall has also been increasing in Scotland over the last thirty years, with more heavy downpours. The climate projections for the next century indicate that the climate trends observed over the last century will continue and intensify over the coming decades. Adaptation is therefore crucial to deal with the unavoidable impacts of climate change to which we are already committed. It will also help us take advantage of any opportunities that arise" (Adaptation Scotland FAQs).

What are we adapting to?

The climate projections for the next century indicate that the climate trends observed over the last century will continue and intensify over the coming decades. We can expect future changes in climate to be far greater than anything we have seen in the past.

The key long-term climate change trends for Scotland are:

- Typical summer is hotter and drier
- Typical winter / autumn is milder and wetter
- Sea level rise
- Weather will remain variable, it may become more variable

We can also expect to see:

- Increase in summer heat waves, extreme temperatures and drought
- Increased frequency and intensity of extreme precipitation events
- Reduced occurrence of frost and snowfall

Text adapted from <u>Adaptation Scotland's FAQs</u> webpage. Read about <u>the main climate</u> impacts we can expect in Scotland.

How has Scotland's climate changed?

Over the last few decades Scotland has experienced a warming trend, shifting rainfall patterns, and rising sea levels:

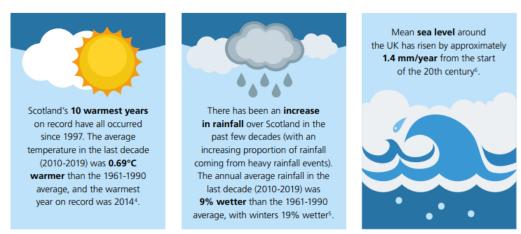


Figure 1: How Scotland's climate has already changed in Adaptation Scotland's <u>Climate</u> <u>Projections for Scotland – Summary</u> (2021).

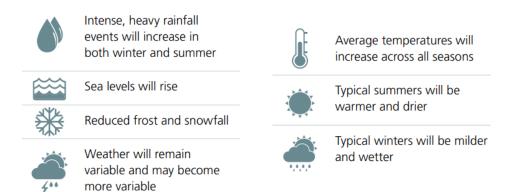


Figure 2: How Scotland's climate is projected to change in the future from Adaptation Scotland's <u>Climate Projections for Scotland – Summary</u> (2021). The changes in climate that we are already experiencing are projected to continue and intensify. The amount of change that occurs will depend on how successful we are in reducing greenhouse gas emissions globally.

Extreme weather event examples at universities and colleges

Climate change is already here. Below is a selection of news stories of tertiary education institutions already being affected by extreme weather. Each of these weather events is made more likely by climate change and the incidence and extremity of these events is predicted to get worse in future. These examples are not exhaustive and are just intended to give a flavour of some of the impacts climate change is bringing to our institutions.

- University of Stirling extreme rainfall damaging buildings
 - O In June 2019, the University of Stirling suffered c£20million worth of damage due to an extreme rainfall event, where half a month's rainfall fell in three hours. The rainfall overwhelmed the drainage system causing damage to teaching facilities, accommodation blocks, sports halls, IT infrastructure and laboratory equipment. You can read about this event here with articles by Allianz, Brig News 24 June 2019, 25 June 2019 and September 2019. The University of Stirling now has a dedicated Weather disruption webpage.
- Fife College extreme snow disrupting transport and access
 - Disruption of transport links, affecting supply chains and timely delivery of teaching and examinations – the 'Beast from the East' in 2018 caused the closure of Fife College for four days ('Adapting universities and colleges to a changing climate: Making the case and taking action' guide 2019).

- University of St Andrews extreme snow disrupting transport and teaching
 - The University of St Andrews closed for at least one day due to a red weather warning from Beast From the East in 2018, cancelling all teaching activities and closing several buildings (<u>The St Andrews Tab News article</u>, <u>Guardian</u> article on UK-wide disruption from Beast From the East).
- Richard Taunton College, Southampton Flooding closes campus
 - Richard Taunton Sixth Form College closes temporarily due to boiler issues and flooding, causing disruption to teaching activities (<u>Southern Daily Echo</u> article).
- Writtle University College, Essex Disruption to transport connections
 - Writtle college students become trapped in deep water as bus gets stuck in flooded road (Essex Live article).
- Lancaster University Flooding leading to power outages
 - Lancaster University issued a report on the floods that led to power cuts to more than 61,000 homes in Lancaster in 2015. Watch the <u>short video</u>, read the <u>article</u> here and the research report: '<u>Living Without Electricity</u>' (pages 10 and 11 detail the direct effect on the University).
- Newcastle University Flooding damages
 - Newcastle University experienced three major flood events in 2012. Most significantly, the 'Toon Monsoon' in June 2012 resulted in over £1 million worth of damage to the campus (<u>UK Universities Climate Network</u>). This <u>presentation</u> gives an insight into some of their solutions, along with Newcastle University's Approach to Flood Management case study (<u>UK</u> <u>Universities Climate Network</u>).
 - Newcastle University's School of Civil Engineering and Geosciences' research
 was showcased in a short film 'Flood Force: finding solutions in good
 company' (8 mins) produced by RCUK's Living With Environmental Change
 and launched on the anniversary of the Toon Flood.
- Scotland's wildfires in 2023
 - Although we could not find examples of wildfires directly affecting universities and colleges, wildfires are becoming more common in Scotland. Two prominent examples from this year include a wildfire near <u>Cannich in the Scottish Highlands</u> burning an area the size of 1500 hectares or 2100 football pitches in June 2023, along with fires near Glasgow on the <u>Campsie Fells</u>, also in June 2023. The risk of fires is increasing with hotter summers. Apart from the direct risk to campuses near grassland and forest areas, wildfires could also affect institutional plots of land used for offsetting carbon emissions through peat restoration, rewilding and tree planting. Any wildfire smoke drifting over to institutional buildings could also increase incidences of asthma and other respiratory problems (<u>Red Cross</u>).

Further case studies can be found in the Further Resources section towards the end of this guide.

Policy context

For Scottish colleges and universities, the <u>Climate Change (Scotland) Act 2009</u> places duties on all public bodies to tackle climate change through exercising their various functions. Part 4 of the Act states, [a] "public body must, in exercising its functions, act: in the way best calculated to help deliver any [Scottish adaptation programme]. The current strategy is <u>Climate Ready Scotland: climate change adaptation programme 2019-2024 (SCCAP2)</u>.

Scottish colleges and universities are expected to evidence their support in delivering against the aims and objectives of the climate change adaptation programme through their annual <u>Public Bodies Climate Change Duties reports</u> (Part 4 of the report template).

Scottish colleges and universities can use the Climate Risk Register detailed below towards evidencing adaptation action under Part 4a, 4b, 4c and 4e of the PBCCD report.

For a good overview of Scottish Government policy relating to Climate Change Adaptation, please read this article from the <u>Scottish Parliament Information Centre (SPICe)</u>. See <u>SSN's PBCCD Analysis Report</u> for details of PBCCD adaptation reporting across the Scottish public sector. You can also find more information on this in the 'Further Resources' section towards the end of this guide.

When should our institution adapt?

Proactive adaptation is generally more effective and less costly than reactive adaptation. Taking early action to build adaptive capacity through actions such as training, awareness raising and guidance, will help you to take the right on the ground actions at the right time.

If your institution is already experiencing problems with climate-related impacts, you may wish to take action to address those risks straight away.

If your institution is considering a project with a long lifespan, it is crucial that you take account of climate change as early as possible in the decision-making process. It is much more cost effective and easier to incorporate adaptation options at the design stage than to introduce them late in the planning process, or after an asset has been built. Other factors that will determine the time frame for your adaptation plan include how soon you expect any critical thresholds to be exceeded, and the lead-in time for planning and implementing adaptation measures.

Text adapted from the <u>Adaptation Scotland programme's Frequently Asked Questions</u> page.

Key Steps

The <u>Adaptation Scotland</u> programme provides advice and support to help Scotland be prepared and resilient to the effects of climate change. Delivered by Sniffer, the programme helps the public sector, businesses and communities to understand what climate change will mean across Scotland, and identify the best way for them to plan for the impact – taking the opportunities and preparing for the risks.

In this guide we draw heavily on the resources created by Sniffer under the Adaptation Scotland programme for public bodies and we aim to highlight the main resources available alongside slightly modifying their Risk Assessment Tool 4 to best serve a Further and Higher Education viewpoint.

Many of the key steps of your adaptation journey are located within Adaptation Scotland's guidance and within our risk register tool. However, as a quick glance of some of the key actions your institution can take, they include:

- a. Learn about climate hazards.
- Inform your institution and start conversations about what you have learned.
 Get senior management buy-in, especially from your risk department and
 Chief Financial Officer.
- c. Create an internal, cross-departmental working group.
- d. Collect data on climate impacts and adaptation activities so far and gather experiences from staff and students across the institution.
- e. Join the Adaptation Scotland programme's <u>Public Sector Climate Adaptation</u>
 <u>Network</u> and EAUC's <u>Managing Climate Risk to Colleges and Universities</u>
 <u>Community of Practice to share learnings across institutions.</u>
- f. Identify opportunities to engage with local or regional place-based adaptation initiatives. Work with other partners to understand shared climate risks and responses. You can find a list of regional initiatives in the Further Resources section at the end of this guidance.
- g. Create a risk register (see our Borders College case study example).
- h. Create an action plan, ideally costed, SMART and aligned to relevant strategies or planning e.g. estates maintenance, risk planning.
- i. Monitor progress, annually at a minimum.
- j. Report adaptation work within PBCCD submissions.

Taking action on adaptation

The Adaptation Scotland programme includes some brilliant resources for public bodies to use to facilitate action on adaptation. Depending on where your institution is at, universities and colleges can start with the Starter Pack and/or Adaptation Capability Framework, then track progress with the Benchmarking Tool. See below for the resources that best suit your institution's situation and integrate them into your own adaptation strategy documents.

Starter pack

If you are starting out on your institutional adaptation journey, start taking the actions outlined in the <u>Starter Pack</u>.

The Starter Pack provides detailed guidance on the first stage tasks of the Adaptation Capability Framework. It is for professionals with limited prior knowledge of adaptation or for those working in organisations where adaptation work is in the very early stages.

It will also be useful for organisations that have progressed adaptation, to review and reflect on any steps they may need to revisit. Tasks and accompanying templates are provided to guide the initial adaptation actions needed to progress to the rest of the Adaptation Capability Framework.

Download the Starter Pack here.



Figure 3: The three main stages in Adaptation Scotland's Starter Pack.

Adaptation Capability Framework

If you are more progressed on your adaptation journey, use the Adaptation Scotland programme's <u>Adaptation Capability Framework</u>.

The Adaptation Capability Framework identifies four capabilities that every public organisation will need to adapt to climate change, providing step by step tasks to guide your adaptation journey. Organisations will have different levels of maturity, and the Framework allows you to identify where you are on your adaptation journey, and how you can develop each capability. The Framework is easy to navigate, allowing you to tailor your approach to your organisation's unique circumstances.

Explore the Interactive Capability Framework <u>here</u> and use these actions within your own adaptation action plan.



Figure 4: The Four Key Capabilities needed for an organisation's adaptation journey. The Capability Framework describes a number of tasks to develop these capabilities over four stages from starting to mature.

Benchmarking Tool

Once your institution has started its adaptation journey, benchmark your progress with the Benchmarking Tool.

A tool for organisations at any stage of their adaptation journey to benchmark progress on adaptation, identify strengths and weaknesses, and track the impact of actions.

It should be used to provide a baseline assessment of your institution's current adaptation capabilities and how their development progresses over time. It highlights which capability areas your institution is excelling at and others where more work may be needed. It can aid communication and engagement to show what your institution is aiming for and the steps needed to get there.

To read more about the Benchmarking Tool and download it, click here.

Public Sector Climate Adaptation Network

The <u>Public Sector Climate Adaptation Network</u> (formerly Benchmarking Working Group) is comprised of public bodies who work together to benchmark their progress and identify and share learning on climate change adaptation.

The Public Sector Climate Adaptation Network:

- Supports organisations to use the Benchmarking Tool.
- Facilitates peer to peer support.
- Provides training and skills development.
- Develops case studies and shares good practice.
- Provides feedback to inform further development of the Adaptation Capability Framework.

To read more about the Public Sector Climate Adaptation Network and to get involved, please visit the <u>website</u> and/or contact: <u>adaptationscotland@sniffer.org.uk</u>.



Figure 5: The <u>Public Sector Climate Adaptation Network</u> is comprised of public bodies who work together to benchmark their progress against the Adaptation Capability Framework and identify and share learning on climate change adaptation.

We will now move on to the Climate Risk Register Tool and the Borders College Case Study. These actions fall under the 'Understand the Challenge' capability in the Adaptation Capability Framework. It relates to actions:

UC2A Develop understanding of climate risk and vulnerability

 Risk and vulnerability are key concepts for understanding the potential impacts of climate change on your organisation. To inform robust decision-making these need to be understood in your specific context – and you need to identify and access relevant sources of evidence.

UC3B <u>Undertake strategic climate change risk assessment</u>

 A strategic risk assessment is used to evaluate climate risks across your organisation or for key service / asset portfolios. This strategic 'scan' helps to understand the changing likelihood and consequence of a range of potential risks for your organisation. It enables you to prioritise climate risks, allowing you to better focus limited resources.

UC4A Mainstreaming of climate change risk assessment

- Your organisation routinely undertakes strategic and project-level climate change risk assessment, as appropriate within a wider risk management framework (i.e. not just climate). You will ensure that there is senior ownership of key risks and that these are effectively - and creatively - communicated within your organisation.

Climate Risk Register Tool

What is a risk register?

The Adaptation Scotland programme sets out in the 'Connecting climate risk and strategic priorities - Guide to strategic climate change risk assessments' document what a risk register is, the steps to take and further resources:

"A strategic climate risk assessment is used to evaluate climate risks across your [institution] or for key services or asset portfolios. This strategic 'scan' helps to understand the changing likelihood and consequence of a range of potential risks for your [institution]. It enables you to prioritise climate risks, allowing you to better focus limited resources."

By completing a strategic climate risk assessment you will:

- Raise awareness and build understanding of how climate change is being experienced by your institution.
- Support open and honest dialogue to create a transparent process for recording and prioritising current and future climate risks.
- Identify actions that are already underway to manage climate risks.
- Develop evidence needed to inform and build support for adaptation action.

The Adaptation Scotland programme includes guidance and tools to support institutions to undertake climate change risk assessments. Climate risk assessments may be strategic, evaluating climate risks across your institution or key services / asset portfolios or they may be project-level, examining climate risks in relation to a specific action, project or asset. Connecting climate risk and strategic priorities: Guide to strategic climate change risk assessments can be downloaded along with editable versions of the risk assessment templates in the accompanying Excel spreadsheet.

EAUC Scotland have taken Adaptation Scotland's 'Tool 4 - Climate Risk and Opportunity Assessment Workbook' (Excel Tool) and accompanying 'Tool 4 - Climate Risk and Opportunity Assessment Workbook Handbook' (Word Document) and slightly modified both to be more tailored to the FHE sector. These tools were produced in collaboration with Climate Ready Clyde, and included input from University of Strathclyde. Please do keep checking in with the Adaptation Scotland programme after the publication of this document, as they are the subject experts and will be updating and evolving their resources as time goes on.

How do I undertake a Climate Risk Assessment?

In the tool's 'User Guide' Word Document, you will find instructions taken largely from the 'Tool 4 – Climate Risk and Opportunity Assessment Workbook Handbook' (Word Document) developed jointly by the Adaptation Scotland programme and Climate Ready Clyde, on how to use the Climate Risk Register Tool. This is accompanied by our video where Rory Hill, Sustainability Project Manager – Central and South Scotland College Partnership, talks through the tool and how to adapt it to your institution's situation. You can also see our case study from Borders College which provides an example of the tool in practice.

If you have any further questions on how to conduct a climate risk assessment, please email the Adaptation Scotland programme <u>adaptationscotland@sniffer.org.uk</u> or EAUC Scotland at Scotland@eauc.org.uk.



Figure 6: Borders College, Galashiels, flood defense gate (Credit: Borders College).

Borders College Case Study

Borders College is located in the Scottish Borders region and consists of four campuses: Galashiels, Hawick, Newtown St Boswells and Tweedbank (<u>Borders College</u>). Each year, around 5,220 students enrol for a wide range of courses and programmes, both day and evening, to HND level and beyond (<u>Borders College 'About Us'</u>). Borders College have a comprehensive <u>Sustainability Strategy</u> and were rewarded for their efforts in sustainability by winning the <u>International Green Gown Award for 2030 Climate Action</u> in 2023.



Figure 7: The four campuses of Borders College (Credit: Borders College).

The College is part of the <u>Central and South Scotland College Partnership</u> (CSSCP) with <u>Forth Valley College</u> and <u>West Lothian College</u> which seeks to increase capacity and collaboration in three Scottish colleges via a shared services model. Rory Hill (Sustainability Project Manager for the Central and South Scotland College Partnership), whose time and costs are split between the colleges, has worked for almost two years accelerating action on sustainability initiatives at the three institutions. One of those initiatives has been to fill some of the gaps in action on climate change adaptation. Rory details his experience working on adaptation initiatives, which ultimately led to the creation of Borders College's first Climate Risk Register:

"As with many of my colleagues across the sector, and in the field of sustainability more widely, the future and ongoing impacts of climate change are almost always at the back of my mind. Upon joining the sector, then, I was surprised to find that well-established public bodies such as colleges and universities had seemingly given little consideration to the clear risks posed by climate change."

Many institutions demonstrate some awareness of adaptation but there appears to have been little action from the sector – something which became apparent to Rory when he was completing the adaptation section of the colleges' Public Bodies Climate Change Duties reporting and when reviewing reports from other institutions.

Finding a lack of resources giving detailed guidance on how to start considering adaptation within FHE, Rory researched the tools available from the Adaptation Scotland programme and was fortunate to join the Public Sector Climate Adaptation Network (formerly the Benchmarking Working Group) which provides advice and support to public bodies on their adaptation journey. Taking inspiration from Adaptation Scotland's Risk Register Template, Rory determined to create a bespoke risk register for the CSSCP colleges, to drive consideration and raise awareness of adaptation.

Borders College agreed to trial this approach and Rory worked closely with key members of staff to benefit from their extensive lived experience of the College, through several stages of development of the risk register; to identify and rate the key risks, to identify current risk mitigation measures and to outline future adaption measures. Through this process the template was altered and expanded, for example including the addition of an action plan detailing all the current, short-term and long-term adaptation measures identified. This approach was then rolled out to Forth Valley College and West Lothian College.

The findings of the Risk Register have been a useful vehicle to encourage discussion around adaptation, both within the CSSCP colleges when shared with Sustainability Committees and with the wider sector, e.g. when Rory presented the Risk Register to EAUC Scotland's Smaller Institutions Sustainability Meeting. The Risk Registers have driven engagement with adaptation within the CSSCP colleges and has helped Rory to complete benchmarking exercises for the colleges, using the Adaptation Scotland programme's other resources. The colleges are now confident that they have significant updates to report in their Public Bodies Climate Change Duties reports.

Rory worked closely with numerous colleagues to make the Climate Risk Register a reality. We have decided to include two viewpoints from different members of staff on how the process has benefited their work and any learnings they would like to relay to other institutions.



Figure 8: Borders College, Galashiels, Flood defense wall (Credit: Borders College 2023).

Robert Hewitt, Director of Estates and Facilities at Borders College

- 1. What adaptation measures did you do as a result of the climate risk register? Completing the climate risk register helped us to identify further actions for the College to take to better understand how climate change will impact our operations, such as updating our flood risk assessments. It has also prompted increased communication around adaptation and climate risks with staff and senior management.
- 2. How has being involved in the climate risk register benefited your work? The climate risk register has been a useful introduction to raise the profile of adaptation across the College and has highlighted the importance of including adaptation in future development and implementation of college strategies. For example, adaptation will have an increased influence in Borders College's updated Sustainability Strategy which will be published in 2025.
- 3. Do you have any learnings you would like to share with other colleges or universities working on adaptation?
 Get involved. Start working through the risk register and you will find that it quickly highlights areas to focus on and will broaden your understanding of both existing practices and further adaptation measures which are required.



Figure 9: The Borders College STEM Hub Eco Room, based in Hawick, utilises a Passive House approach to ensure high-energy efficiency, making the best use of new materials, super insulation, triple glazing, solar gain and a green roof (Credit: Borders College, Eco Room news article).

Scott Moncrieff, Director of IT & Digital at Borders College

1. What adaptation measures did you do as a result of the climate risk register?

One of the things that came out from the discussions with Rory was: 'if a major incident happened to our main Scottish Borders campus in Galashiels, then are we still able, as a workforce and as students, to continue working and studying without any interruption?' The answer to that was no, depending on the severity of the incident.

All of our connectivity to our data is reliant on the power and network being available within the main campus, so if there is any disruption to the power or service disruption to parts of our network, then regardless of where a staff member or a student is based, they won't be able to access some, or perhaps all, of the systems. Our data is located in a dedicated data centre based in the central belt in Scotland, but in order to access that you have to log in to our main network in Galashiels. That's either done via being physically on site, or if you are working remotely then using a VPN connection to our main site.

So we are working with the data center provider in order to bypass our main campus so that everyone, regardless of where they are located, can go directly to the main data centre.

Essentially what that means is, should something happen to the main campus, it doesn't really matter because they then have a direct link into the data center. The data center itself has got two separate locations based in different parts of Scotland. If data center one goes down, data centre two automatically comes online. From that point of view, there will be a lot more resilience and will take away that single point of failure, which is currently Galashiels.

So we're working with them at the moment to find out technically what is involved, and also, what the cost implications would be.

2. How has being involved in the climate risk register benefited your work? From an IT point of view, it's raising awareness of a lot of areas we didn't really know too much about. I has also triggered a lot of conversations at a group that I attend called SCIL (Scottish Colleges IT Leader Group).

It **put sustainability and climate change on the agenda** whereby before it was more of an ad hoc conversation, now it is more of a main talking point. It is great to understand what other colleges are doing, because at the end of the day we are approximately twenty colleges in Scotland all trying to do the same thing in twenty different ways.

The data center we have is a state-of-the-art purpose-built data center, so it has all of the latest technology in order to be as self-sufficient as possible and be as resilient as possible. That has **taken a lot of the power requirements away from our main campus**. Now we've got a few **more statistics to evidence how much we are actually saving**. Whereas before, even two or three years ago, those statistics weren't readily available.

Scott Moncrieff, Director of IT & Digital at Borders College (continued)

3. Do you have any learnings you would like to share with other colleges or universities working on adaptation?

We are quite early in the process, but from an IT point of view, I think it is understanding what your current vendors can provide and learning to ask the right questions.

Next steps for Borders College

Now that the Climate Risk Register has been completed, we asked Rory Hill what is next for adaptation at Borders College?

- The Risk Register highlighted that some of the flood risk assessments carried out for the Colleges' campuses are outdated and we hope to have these updated soon.
- The Risk Register is largely based on Scotland-wide predictions (as this is what was available at the time) and we plan to update these with regional data once this becomes available.
- We will continue to monitor and update the Risk Register, particularly to account for more extreme weather events as they occur.
- We will continue to work to integrate adaptation into College operations, such as adding it into the College's next Sustainability Strategy.

Rory has also kindly provided a few pieces of advice for any other institutions, particularly colleges, looking to take their first steps into climate change adaptation:

- 1. Climate change adaptation is a wide and complex field, so it is easy to be daunted by the prospect of where to start. Setting a relatively small, realisable objective can help with this and hopefully the Risk Register is an option for this too.
- 2. Many institutions seem to be relatively early on in their adaptation journey so do not feel disheartened by progress in your institution you are likely not alone. Instead feel confident that you can reach out to others in the sector, myself included, to ask for advice.
- 3. Where possible, take inspiration from other public sector organisations but do not be intimidated by their progress many other bodies such as councils are far ahead of FHE institutions. They have, however, often got significantly larger resources and have been considering adaptation for much longer. Try to see their progress as a learning opportunity rather than competition.

If you have any questions about this case study, please contact Rory Hill at: rhill@eauc.org.uk or EAUC Scotland at Scotland@eauc.org.uk.

Further Resources

Below can be found a selection of resources relevant to universities and colleges on adaptation topics. We have split them up into the following categories:

- 1. Scottish colleges
- 2. Scottish universities
- 3. UK universities
- 4. FHE membership organisations
- 5. Public and Third Sector organisations
- 6. Regional initiatives

These resources are not exhaustive, but a selection of the most relevant and/or best practice examples known. If you have further examples to include in future iterations of this guide, please email scotland@eauc.org.uk.

Scottish Colleges

Organisation	Resources
Borders College	Case study as part of this guide.
Contact us	We would like to showcase more examples of college adaptation
	measures – in Scotland and the rest of the UK. If you have any
	examples to share, please contact us at Scotland@eauc.org.uk .

Scottish Universities

Institution	Resources
University of	The University of Edinburgh aims to become more climate-resilient,
Edinburgh	creating a sense of place on campuses and promoting well-being and
	biodiversity, as an integral part of the wider context of the city of
	Edinburgh.
	You can view their key documents here:
	 Adapting to climate change webpage.
	 One page adaptation summary PDF.
	- University of Edinburgh Adaptation Framework (Word
	Document).
	- Edinburgh Adaptation Community of Practice.
	- Adaptation Strategy - Business Risks and Opportunities
	document.
University of	- The University of Glasgow's Climate Change Adaptation Plan
Glasgow	<u>(2018-2028)</u> .
	 Adaptation Scotland's University of Glasgow Case Study.
	- Launched in 2016, the <u>National Centre for Resilience</u> is a cross
	sector partnership spanning Scottish universities, government
	and practice, hosted by the University of Glasgow. The NCR is
	an academic research hub, using evidence to inform policy

	and practice. They bridge the gap between academia, policy and practice by promoting cross sector partnerships, encouraging each to learn from the other to improve resilience when planning for, responding to and recovering from natural hazard events.
University of the West of Scotland	University of the West of Scotland's Climate Ready Adaptation Plan 2018 to 2021. To help avoid the costs and consequences of extreme weather and climate change, UWS have developed this Plan. Developing and implementing the Plan allows UWS to understand their vulnerability to current and future climate change, to recognise and assess the risks and also to identify research opportunities to further advance knowledge and understanding of our changing climate. UWS' Plan is a clear demonstration that they are prepared to contribute to Scotland's adaptation commitments, and to increase the resilience of their university.
University of Strathclyde	The Sustainable Strathclyde: Adaptation webpage. University of Strathclyde: Climate ready Clyde – why city and region collaboration for climate resilience works. The University of Strathclyde is a member of Climate Ready Clyde, a cross-sector initiative that aims to enable climate adaptation for the Glasgow City Region, and which has helped the university itself to develop resilience planning for its campus and beyond. You can download the PDF here . The University of Strathclyde's Climate Resilience and Vulnerability Assessment .

UK Universities

Institution	Resources
University of West London	University of West London: Building energy resilience in a changing climate. To build energy resilience, the University of West London has invested in natural low-emission heating and ventilation systems as energy sources while also improving biodiversity on campus. You can download the UUCN Case Study PDF here .
Oxford Brookes University	Oxford Brookes University: Resilient student halls. In November 2021, Oxford Brookes University received planning permission to redevelop the Clive Booth Student Village – an existing student accommodation site. This redevelopment will increase resilience to higher temperatures and heatwaves, flooding and

	potential risks of energy shocks, while also providing benefits to student quality of living, reducing pressure on local housing supply and reducing carbon emissions. You can download the UUCN Case Study PDF here .
Newcastle University	Newcastle University: Addressing flood risk through city-university collaborations. Driven by significant disruption from flooding, Newcastle University implemented sustainable drainage systems and green infrastructure across its campus. You can download the UUCN Case Study PDF here .
Loughborough University	Loughborough University: Building resilience to flood risk. Floods caused by heavy rainfall and streams overflowing occasionally impact Loughborough University campus and the frequency and severity of these floods are expected to increase because of climate change. To build resilience to this current and growing risk, Loughborough has developed a set of flood risk indicators and implemented a high-resolution flood nowcasting system for the campus. You can download the UUCN Case Study PDF here. A prominent researcher in the climate risk management field is also based at Loughborough University. Professor Rob Wilby, convener of the EAUC Community of Practice 'Managing Climate Risks', collaborated with Shona Smith, Head of the Priestley Centre for Climate Futures at the University of Leeds to write a series on climate risks for Times Higher Education. In order, they are: 1. Start your university on a path to resilient net zero. 2. Setting scenarios for a university adapted to climate change. 3. A guide to evaluating and managing climate risks to universities. 4. How to select and monitor climate adaptations for universities. Although these articles draw on methodology other than that from the Adaptation Scotland programme, the articles will still contain key insights directly applicable to universities in particular.
Cranfield University	Cranfield University: Developing a University climate change risk assessment and adaptation strategy. Cranfield University developed a Climate Change Risk Assessment followed by a draft plan for adaptation measures, by involving staff and students in a series of workshop-based exercises. Download the UUCN Case Study PDF here .
University of Nottingham	You can <u>watch the recording</u> of the University of Nottingham's presentation to <u>EAUC's Managing Climate Risks Community of</u>

<u>Practice</u> talking about their adaptation measures in more detail (EAUC member institutions can log in to see further resources).

Hydrock delivered a climate risk study with recommendations for climate adaptation on one of the University of Nottingham's campuses to ensure long term resilience and continuity for students and research studies. See the case study here.

Further and Higher Education membership organisations

Organisation	Resources
EAUC – The	Apart from this guide, EAUC have published two guides on
Alliance for	adaptation-related topics:
Sustainability	 The main guide, Adapting universities and colleges to a
Leadership in	changing climate: Making the case and taking action, provides
Education	 a range of support, from an initial self-assessment on climate readiness and an example Elevator Pitch, to climate projections, examples of risks and potential adaptation actions, and a compilation of resources to support your institution. 2. An accompanying guide, Using an existing organisational resilience framework to develop a Climate Change Adaptation Plan, advises the embedding of climate change risk management within your institution's existing risk and business continuity procedures. It gives a seven-step process to make your Climate Change Adaptation Plan (CCAP). The advice includes how to run Business Impact Analysis
	workshops that can evaluate the risks to your operations presented by climate change and how to gauge the necessary actions that would reduce significant risks.
	 EAUC also manage the following Community of Practice: Managing Climate Risk to Colleges and Universities Community of Practice. This Community of Practice is open to all EAUC Educational Members and other invited parties to learn and share experiences in relation to managing climate risk. This is one of EAUC's most popular Communities of Practice.
UK Universities Climate Network	Assessing climate risk and strengthening resilience for UK Higher Education Institutions. This working paper supports higher education institutions to develop processes to assess their risk to their current and future climate risks,
	put in place plans to adapt to these risks, and identify opportunities to strengthen their resilience. Authored by 19 experts from across 13 institutions, the guidance draws on the latest evidence and is

intended to be a valuable resource to support decision makers, senior leaders, sustainability practitioners and risk experts within HEIs to undertake this urgent work. Download the PDF here.

Public and Third Sector Organisations

Organisation	Resources
The Adaptation	The Adaptation Scotland programme provides advice and support to
Scotland	help Scotland be prepared and resilient to the effects of climate
programme and	change. Adaptation Scotland is a programme funded by the Scottish
Sniffer	Government and delivered by the sustainability charity Sniffer.
J	You can read more about the tools they offer earlier in this guide:
	1. Starter Pack.
	 A Capability Framework for a Climate Ready Public Sector.
	3. Benchmarking Tool.
	4. Public Sector Climate Adaptation Network.
	5. Becoming Climate Resilient Training is a 1-day course
	delivered by Sniffer, focusing on climate adaptation, climate
	risk, and opportunities to build resilience and a fairer,
	flourishing future.
	You can contact the Adaptation Scotland progamme using its Enquiry
	Service, or by emailing adaptationscotland@sniffer.org.uk.
	You can also sign up to the Adaptation Scotland newsletter, for
	regular news and updates.
Sustainable	The <u>Sustainable Scotland Network (SSN)</u> is Scotland's public sector
Scotland	network on sustainability and climate change. They support over 600
Network (SSN)	members across public bodies in Scotland on their journey to net
rectwork (3314)	zero. The network supports the public sector to drive action on
	climate change, scaling up impact through leadership, policy and
	research. Each year SSN presents a summary analysis and key findings
	from public sector bodies' annual reports.
	Trom public sector bodies annual reports.
	In their latest summary analysis for the last reporting year (21-22),
	SSN included analysis on adaptation progress. SSN found that: 'The
	majority of Educational Institutions (60%) have carried out a limited
	risk assessment, 11% a comprehensive risk assessment and 29% have
	not completed any kind of risk assessment' (page 44). They also
	found that out of 45 educational institutions, 15 had taken no action
	on climate change adaptation at all, along with 23 institutions taking
	'some action'. Only 7 institutions have taken 'good action' and none
	have taken 'advanced action' (page 45). It was from this analysis
	report that EAUC Scotland realized the need for bespoke FHE
	·
	guidance on adaptation. As a sector, we need to rapidly move
	towards 'good' and 'advanced' action. You can read the full report
	<u>here</u> and other SSN adaptation resources <u>here</u> .

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	Annual reports: All individual reports and summary analysis reports can be found here . You can view adaptation actions for individual institutions by clicking on the 'Part 4: Adaptation' tab located at the bottom of their 2021/22 reports.
Scottish Government	Scotland's devolved statutory framework on climate change, established through the Climate Change (Scotland) Act 2009, includes strategic planning for climate change adaptation. The second such programme to date under the 2009 Act, Climate Ready Scotland: Second Scottish Climate Change Adaptation Programme (SCCAP2), was published in September 2019 in response to the 2017 CCRA2. The Programme sets out over 170 policies within an outcomes-based framework and takes a people-centric approach to climate change adaptation in Scotland over the period to 2024.
	To support Scottish public bodies' leadership role in adapting to climate change, the Climate Change (Duties of Public Bodies: Reporting Requirements) (Scotland) Amendment Order 2020 sets out that bodies will be required from reporting year 2021-22 to provide annual information, where applicable, on what contribution the body has made to helping deliver Scottish Adaptation Programmes.
	Scottish Climate Change Adaptation Programme: Progress Report 2022. Third annual progress report on the "Climate Ready Scotland: Scotland's Climate Change Adaptation Programme 2019 to 2024" May 2022. The next Scottish Climate Change Adaptation Programme is expected by Autumn 2024.
UK Government	UK Climate Change Risk Assessment 2022. As required by the Climate Change Act 2008, the UK government has undertaken the third five-year assessment of the risks of climate change on the UK. This is based on the Independent Assessment of UK Climate Risk, the statutory advice provided by the Climate Change Committee (CCC), commissioned by the UK government and devolved administrations.
	Third National Adaptation Programme (NAP3). This report sets out the actions that government and others will take to adapt to the impacts of climate change from 2023 to 2028. The NAP primarily covers England as well as covering UK-wide areas, to address climate change risks following each Climate Change Risk Assessment. Northern Ireland, Wales and Scotland develop their own respective adaptation programmes.
Climate Change Committee	The <u>Climate Change Committee (CCC)</u> is an independent, statutory body established under the Climate Change Act 2008. Their purpose is to advise the UK and devolved governments on emissions targets and to report to Parliament on progress made in reducing

	greenhouse gas emissions and preparing for and adapting to the impacts of climate change. A notable publication is: 'Is Scotland climate ready? – 2022 Report to Scottish Parliament.' The Independent Assessment used to help inform the third UK
	Climate Change Risk Assessment (CCRA3) assesses 61 risks and
	opportunities from climate change to Scotland, including to business, infrastructure, housing, the natural environment, our health and risks from the impacts of climate change internationally. You can read the Evidence for the third UK Climate Change Risk Assessment (CCRA3) Summary for Scotland here .
C40 Cities	C40 Cities is a global network of nearly 100 mayors of the world's leading cities that are united in action to confront the climate crisis. Mayors of C40 cities are committed to using an inclusive, science-based and collaborative approach to cut their fair share of emissions in half by 2030, help the world limit global heating to 1.5°C, and build healthy, equitable and resilient communities. We have found some of their guidance on adaptation to be useful. In particular, the following resources: 1. Assessing Climate Risks. Assessing climate risks, now and in the future, is a vital step for developing a strategy to address them. A climate change risk assessment looks at the likelihood and potential impact of a range of climate risks and hazards, including impacts on different groups and areas of the city. 2. Adaptation and Mitigation Interaction Assessment (AMIA) tool. To help cities understand the interactions and interdependencies associated with climate change adaptation and mitigation actions, C40 Cities produced the Excel-based Adaptation and Mitigation Interaction Assessment (AMIA) tool. The tool is designed to support city practitioners in climate action planning by mapping the synergy potential, trade-off potential, mal-investment risk and piggybacking opportunities of a wide range of actions, such as switching to electric buses and investing in building-scale solar energy. It also includes 60 examples of city initiatives that have aimed to maximise synergies and address these interdependencies.

Regional initiatives

Organisation	Resources
Climate Ready	Climate Ready Clyde (CRC) is a cross-sector initiative funded by 13
Clyde	member organisations and supported by the Scottish Government to

(Glasgow City Region (East Dunbartonshire, East Renfrewshire, Glasgow City, Inverclyde, North Lanarkshire, Renfrewshire, South Lanarkshire, West Dunbartonshire)

create a shared vision, strategy and action plan for an adapting Glasgow City Region.

Glasgow City Region's first <u>Climate Change Risk and Opportunity</u> <u>Assessment</u> sets out the risks and opportunities posed by climate change to the end of this century, and highlights areas where more action is needed in the next five years. See the interactive document here.

Climate Ready Clyde has developed Glasgow City Region's first Adaptation Strategy and Action Plan. The Strategy was launched in June 2021, ahead of COP26 in Glasgow.

To view Glasgow City Council's Climate Adaptation Plan 2022-2030, see here.

Participating institutions: University of Glasgow, University of Strathclyde.

Aberdeen Adapts (Aberdeen City)

Aberdeen City Council worked with the University of Aberdeen, the <u>Adaptation Scotland</u> programme and local organisations to develop Aberdeen Adapts, a city-wide climate adaptation framework.

Originally approved in 2019, <u>Aberdeen Adapts: Climate Adaptation</u> <u>Framework 2022</u> was refreshed in 2022 to show synergies and interdependencies with the Net Zero Aberdeen Routemap. The Framework aims to increase awareness of the climate challenges facing Aberdeen and set the foundations for long term local partnership working on climate change.

Key links are:

- <u>Aberdeen Adapts</u> Aberdeen City Council webpage.
- Aberdeen Adapts Climate Adaptation Framework 2022 PDF Document.
- <u>Aberdeen Adapts Evidence base</u> PDF Document.
- Aberdeen Adapts Adaptation Scotland case study.

Participating institutions: University of Aberdeen.

Climate Ready Aberdeenshire (Aberdeenshire)

<u>Climate Ready Aberdeenshire</u> is a voluntary cross-sector network to create and coordinate Aberdeenshire's climate change adaptation and mitigation strategy. It brings together the views and expertise of a range of diverse stakeholders from public, private, and third sector organisations, to set out how they can work collaboratively to meet the challenges of a changing climate in Aberdeenshire.

Participating institutions: University of Aberdeen.

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Highland Adapts	<u>Highland Adapts</u> brings communities, businesses, land managers and the public sector together to facilitate transformational action towards a prosperous, climate-ready Highland. A recent initiative that is developing well.
Climate Ready Edinburgh (Edinburgh City)	Website and further information coming soon. Participating institutions: University of Edinburgh.
Sustainable Dundee (Dundee City)	Sustainable Dundee is a partnership of organisations working together to tackle the Climate Emergency. Dundee City Council prepared and launched a Climate Action Plan in December 2019 with 64 actions, which are undertaken with partners across the themes of Energy, Waste, Transport, and Resilience. Participating institutions: Abertay University and University of Dundee.
Outer Hebrides Community Planning Partnership Climate Change Working Group (Na h-Eileanan Siar/ Western Isles)	The Outer Hebrides Community Planning Partnership (OHCPP) established a New Climate Change Group in the Outer Hebrides in 2019. The group has broad representation from public bodies throughout the islands and is working to develop actions and targets around climate issues for subsequent inclusion in the OHCPP Local Outcome Improvement Plan. Participating institutions: University of the Highlands and Islands.



Figure 10: A managed floodplain in Kingussie, Highland before (left) and after (right) flooding. Creating areas of long grass with mown paths allows for improved biodiversity and health and wellbeing benefits during dry periods. During heavy rainfall, floodwater has a place to drain to, avoiding key buildings (Credit: Lara Fahey 2023).

Concluding comments

As mentioned in the beginning of this guide, working on climate change adaptation takes a degree of bravery and we commend you for being here on this journey.

We hope that this guide has helped to signpost the resources and networks out there designed to support your institution's adaptation journey. Be sure to join the Adaptation Scotland programme's Public Sector Climate Adaptation Network and EAUC's Managing Climate Risk to Colleges and Universities Community of Practice.

If you need assistance with the adaptation section of your <u>Public Bodies Climate Change Duties</u> submissions, please contact us at <u>Scotland@eauc.org.uk</u> or email adaptationscotland@sniffer.org.uk.

Adaptation knowledge gaps

If you are reading this and would like to contribute to knowledge on adaptation for universities and colleges, we have noted a number of significant gaps in knowledge that could be integrated into future research and educational opportunities:

- College adaptation case studies.
- Institutional best practice examples from those taking advanced adaptation action.
- The creation of a resource bank of FHE-specific resources and guidance on adaptation. This could include, but is not restricted to: communicating adaptation to staff and students, adaptation action plans, costs of action (and costs of inaction), methodology for monitoring severe weather events at institutions and efficacy of adaptation measures.

Together we can make Scotland's education institutions resilient to climate impacts and help them flourish for centuries to come.



Figure 11: Creating areas of urban green space like this community garden (left) and roof terrace garden (right) on tall buildings have many benefits. They allow for increased health and wellbeing of staff and students and create learning opportunities in food growing and biodiversity. They also act to reduce flooding during heavy rainfall events and cool roof spaces during hot weather spells. Both images are of City of Glasgow College, 2023. (Credit: Lara Fahey).

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Image credits

Borders College photos and information for case study and tool.

All other images have been credited below the respective figure.

Contact us

Do you have an adaptation case study from your institution? Would you like it included in this guide? Share it with EAUC Scotland via scotland@eauc.org.uk.

Found a broken link or a gap in information? This guide was published in October 2023 and will be reviewed on a regular basis. Please email us about any errors or omissions.

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