

# Living Lab Case Study

Enhancing the Botanic Garden, College Grounds, University and Community Allotments through Permaculture Principles

## Introduction: What is Permaculture?



As defined by the Permaculture Association UK, permaculture is a design process. It helps design intelligent systems which meet human needs whilst enhancing biodiversity, reducing our impact on the planet, and creating a fairer world for us all. This design process is frequently used in Agroecology projects.

Agroecology is the application of ecological concepts and principals in farming, as defined by the Soil Association UK. By introducing university staff and students to this principle, particularly those associated with grounds, gardens, and allotments, we hope to teach useful skills that will benefit both them and local wildlife.

## Our Aims

### **Educating staff, students and community members – Collaboration with abundant Earth**

One of the founding members of Abundant Earth, Wilf Richards, holds a Diploma in Applied Permaculture Design, making them a qualified tutor capable of delivering day courses and Permaculture Design certificates. The techniques and principles taught in these day courses and possibly future courses provided grounds staff with the language and theory needed to be effective biodiversity advocates. The principles learned from the permaculture classes will also help staff, students and residents to adapt the grounds to the problems the climate crisis poses through the recognition and incorporation of ecosystem services, and the creation of earthworks and water harvesting systems.

### **Enhancing allotments with reused materials**

The maintenance depot currently holds a wide variety of materials that could be used to construct raised beds and create a variety of wildlife habitats. The Botanic Garden can also donate spare organic compost made onsite to allotment groups. Additionally, woodpiles from the estate could be moved to allotments to create homes for insects and hedgehogs.

### **Staff and community volunteering**

There are often enough enthusiastic students to run college allotments through their own societies during term time. However, over the summer months students often go home, leaving the allotment in an unkept state. We aim to remedy this through staff volunteering and community partnership who can benefit from the yields they produce while students are away. This will also give students the opportunity to connect with the wider Durham residential community and get them involved other aspects of the biodiversity action plan.



## What we did

### Permaculture principles day course for Estates Staff with Abundant Earth

We hired one of the founders of a local organic food Cooperative 'Abundant Earth' to host two-day courses on the 3rd and 10th of March, from 9am - 3am at The Botanic Garden. A total of 22 staff members from the Estates and Facilities directorate attended, including staff from The Botanic Garden, Grounds Maintenance team and The Energy and Sustainability team. As well as five other individuals from groups such as Ustinov Allotment society, Friends of The Botanic Garden and the Botanic Garden Enhancement group. The course had both theory and practical elements of permaculture design, Figure 1 outlines the key themes explored in the class.



Figure 1; Key permaculture theory principles.

### Permaculture principles day course for Students with Abundant Earth

We hosted two further permaculture skills courses on 28th April and 20th May from 9am-3pm for student allotment members. Both courses took place on college allotments, one at St. Chad's and another at Ustinov allotment. A total of 17 students attended the courses and will take the skills gained from the course into their practical work on the university allotments. Figure 2 shows the students taking part in the permaculture class on their allotment.



Figure 2; Students outside at Ustinov allotment, taking part in the permaculture class.

The techniques and principles taught in these day courses provided staff, students and residents with the skills to design and manage their allotment space in line with our Biodiversity Strategy.

The principles learned from the permaculture classes will also help staff, students and residents to adapt the grounds to the problems the climate crisis poses through the recognition and incorporation of ecosystem services, and the creation of earthworks and water harvesting systems.

### Enhancing allotment sites using reused materials



Figure 3; Student volunteers managing the allotment at Ustinov and creating new raised beds using repurposed slate and donated manure.

Slate from the estates and facilities maintenance department has already been used to mark the boundaries of the raised beds at Ustinov allotment society, Figure 3 shows the student volunteers managing the allotment at Ustinov. Which has not only saved the allotment society a significant amount of money but has also prevented the purchase of new materials that would carbon and environmental accosts associated with them.

### Reviews

*“Thank you so much for organising the course for us. It was amazing to learn new skills and ideas about permaculture. Especially, the analysing the overlap of principles in permaculture was quiet interested in for me, because it clarifies and simplifies many practices in the allotments. Also, it was great to receive advice from an experienced gardener directly about my college allotment. After I talked about this event with my friends in college and course mates, they are very keen to know about it more.”*

**Yuka, St Chad’s Allotment Society**

*“Overall, it is definitely positive from me. Love the structure of the day, the balance between theory and practical work, flexibility to leave when needed, the group atmosphere. I can’t think of any downsides!”*

**Ophelia, Conservation Society, ECO DU**

### Evaluation, next steps and further monitoring

To evaluate the success of this scheme we will measure the species richness of the allotments and the Botanic Garden to see if the abundance of native pollinators increases and if hedgehogs can be spotted in the area.

# BioBlitz

We hosted a BioBlitz event with student volunteers at the Botanic Garden in June. This event contributed to further outreach work to enhance and promote biodiversity across the University estate. The BioBlitz event was facilitated in line with elements of the Biodiversity Strategy and the Botanic Garden policy, referenced below.

## Working within the University and with the wider Community to promote biodiversity



- 1) Work alongside University students, University staff, Friends of the Botanic Garden, Visitors, the local community and other stakeholders to promote and encourage Biodiversity
- 2) To positively promote environmental sustainability within the Botanic Garden
- 3) Regularly review working practices to look for more sustainable ways of working
- 4) Work alongside and incorporate into our everyday work the principles of 'Durham University Biodiversity Strategy Action Plan (2022-2032)'.

## What is a BioBlitz?

A BioBlitz is a race against time to create a snapshot of the variety of life found in a specific location. Wildlife experts and the wider public work together, within a set amount of time, to find and identify in the area as many species of plants, animals and fungi as possible.

BioBlitzes can be carried out anywhere there is wildlife, including urban areas such as parks, cemeteries and canals. The records collected during a BioBlitz form part of a genuine scientific survey of the area.

The event is an informal and fun way for young people and other members of the public to learn alongside experts, and share and develop their enthusiasm for nature.

People all over the world take part in BioBlitzes. Museum led BioBlitzes often involve activities led by our scientists and other experts, such as pond dipping, field surveys and wildlife walks.

Participants can also use identification guides and tools like microscopes to help study species.

*(Natural History Museum, BioBlitz Guidance. Available at: <https://www.nhm.ac.uk/take-part/citizen-science/bioblitz.html>)*

