

Case Study Inspiring Spaces, Improving Green Infrastructure on Swansea Bay University Health Board Estates

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Presented by
Kathryn Thomas



Caru Natur Cymru
Biophilic Wales

Case Study Outline

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Supporting Well-being and Wildlife in Wales

Introduction

This case study looks at the work completed and lessons learnt through the length of the project.

Biophilic Wales is an ENRaW (Enabling Natural Resources and Well-being) funded partnership between National Botanic Garden of Wales, Swansea Bay University Health Board (SBUHB), Swansea University and Natural Resources Wales, aiming to increase the well-being of people, biodiversity and the environment throughout Wales using three interconnected work packages: Inspiring Spaces, Grasslands for Life and Plants for People.

Inspiring Spaces - transforming amenity grasslands and under-utilised outdoor areas, into spaces that are full of wildlife, where people can enjoy and be restored by the natural world.

Grasslands for Life - developing resilient grassland ecosystems by revolutionising monitoring and strengthening restoration activities.

Plants for People - celebrating Wales' natural heritage by protecting our most threatened plants, for the people of Wales.



The Health Board engaged with all three of these areas, but **Inspiring Spaces** has had the most impact on NHS sites.

National Botanic Garden of Wales has been working within the Swansea and Neath Port Talbot area, with a target of interventions on 40 sites within the SBUHB estate as focal points for community co-developed green infrastructure projects. The sites surround hospitals, health-centres, and mental health and residential facilities. The project has increased biodiversity value, accessibility, ecosystem services and connectivity, through the creation of inspirational green spaces for people, and evaluates what works best to develop models that can be applied throughout Wales.

Biophilia states that humans possess an innate tendency to seek connections with the natural world and that this is vital to their health and well-being.

Our relationship with nature should be a reciprocal arrangement. We need nature and nature needs us. Nature will find a way to survive in the tiniest crack in the pavement but with our care and some positive changes in the management of our environment, nature can have a transformative effect on our everyday spaces.

Our everyday spaces can also extend the range of our native plants, whose typical habitats might be under threat. **Plants for People** has banked seed from rare native plants and after "bulking up" (the process of growing a single seed into a plant which provides more seeds which are collected and grown on), some of these seeds have been planted on Health Board sites. **Grasslands for Life** is revolutionising how we survey grasslands, by using DNA in soil to assess its biodiversity.

Inspiring Spaces continued to operate throughout the COVID 19 pandemic, which has presented us with all with many challenges. Never before have NHS staff been under so much pressure and in need of any measures that can improve their well-being. **Inspiring Spaces** has provided outdoor areas, for people to escape the clinical environment of hospitals and clinics and take a break, no matter how short, in the fresh air.



Strategic Plan

During October – November 2019, 35 SBUHB sites were visited to assess how Biophilic Wales could make changes to green infrastructure to increase biodiversity and the well-being of the people who use or could potentially use these areas. The findings of these surveys informed the Strategic Plan.

Sites were assessed for several criteria, including -

- current biodiversity of green infrastructure,
- connectivity with neighbouring wildlife rich areas,
- the location of the site,
- the number of people who would benefit from increased nature on the site.
- Consideration was also given to how the project could also alleviate health and economic inequalities.

Each site was evaluated for feasible interventions. These ranged from small changes such as installing bat and bird boxes, to larger tasks such as creating wildflower meadows. In some cases, the only intervention required would be a change in routine maintenance and where this is the case, this should result in reduced maintenance for estates teams rather than an increase in labour, so that the work will be sustainable beyond the life of the project. Where there was little or no possibility to improve biodiversity outside the building, nature could be brought inside the building with artwork and well-being films that celebrate Welsh grasslands.

These well-being films can also be used to relieve the stress felt by patients undergoing treatments which might be unpleasant.

Interpretation and education is integrated into our work on Health Board sites to explain the reasoning for the change in presentation of the sites and the benefits to native Welsh wildlife.

At the time of undertaking the sites visits, it wasn't possible to produce comprehensive vegetative surveys as many plants were no longer flowering or had died back completely. However, it was obvious from a cursory assessment to see that some areas were more biodiverse than others.



Project outcomes

Objectives

- Working with nature to improve health and well-being
- Maintain and enhance biodiversity
- Value our green infrastructure and the contribution it makes to our well-being
- Improve our knowledge and understanding of the natural environment
- Reduce our carbon footprint

Key indicators

TREES

>400 trees planted orchards, large trees and hedges

HOMES FOR WILDLIFE

Bird boxes, bat boxes and insect hotels deployed on >5 sites

BETTER CONECTIVITY

>5 sites better connected to surrounding green spaces

GRASSLAND

>25 hectares of grassland with management optimised for biodiversity

INTERPRETATION

>40 interpretation panels across all the sites

POLLINATOR PLANTING

>20 sites with added pollinator planting

FRESH AIR, EXCERCISE AND RELAXATION

Create relaxation areas and walking routes around sites, providing spaces to improve well-being on >10 sites

Achievements

Green infrastructure development and the principles of Biophilia can improve health and well-being of people, wildlife and the environment.

KEY INDICATOR	OUTPUTS	BENEFITS
At least 400 trees planted	<ul style="list-style-type: none"> Welsh native heritage orchards, comprising of 40 trees on six sites. Species include Margoed Nicholas, Kenneth, Bakers Delicious, Pren Glas, Brith Mawr, Channel Beauty, St Cecilia, Bardsey, Cissy 	<ul style="list-style-type: none"> orchards are valuable, biodiverse habitats supporting pollinators propagating and preserving welsh heritage varieties for future generations patients and OTs helped with planting of orchards , which encourages an interest in the trees and looking after them
	<ul style="list-style-type: none"> 3,437 hedging plants. Species include blackthorn, hawthorn, guelder rose, wild privet, hazel, dog rose, field maple, wild cherry. 	<ul style="list-style-type: none"> hedges provide valuable wildlife corridors and improve connectivity hedges provide privacy, shelter and protection from noise and particulate pollution hedges provide food and homes for wildlife improved biodiversity on health board sites
	<ul style="list-style-type: none"> 35 trees of at least 2m in height. Species include silver birch, black alder, aspen, whitebeam, rowan. 	<ul style="list-style-type: none"> larger trees for an instant impact providing enhanced ecosystem services such as flood and pollution mitigation, and carbon sequestration compared to smaller trees.
25 ha grassland managed for optimum biodiversity	<ul style="list-style-type: none"> 31 ha grassed areas with no-mow regimes (this figure will increase as more sites follow suit in 2022) 	<ul style="list-style-type: none"> verges, banks and borders have been left unmown, resulting in flower rich areas, with no need to add any plants, which are great for pollinators and wildlife connectivity. This has also resulted in time savings, less fuel used for mowing and therefore cost savings, and a reduced carbon footprint.

Achievements (continued)

KEY INDICATOR	OUTPUTS	BENEFITS
	<ul style="list-style-type: none"> over 3000 plug plants added to verges. 	<ul style="list-style-type: none"> areas that weren't so flower rich were supplemented, resulting in a more diverse range of wildflowers home volunteers benefited from the experience of growing wildflowers for health board sites. The volunteers appreciated the opportunity of Join Our Growing Team (JOGT), to do something to say thank you to the NHS during the first lockdown
<p>pollinator planting on 20 sites</p>	<p>Pollinator planting on 36 sites</p> <ul style="list-style-type: none"> planters with artistic trellis on 10 sites filled mainly with perennials - common knapweed, field scabious, oxeye daisy, musk mallow, lady's bedstraw and meadow buttercup. courtyard gardens at Tonna Hospital have been planted with JOGT plants and bulbs. verges and flower beds have been enhanced by plugs, bulbs and wildflower seed on many sites 	<ul style="list-style-type: none"> planters enhance the area for staff and visitors (the artistic trellis supports plants and provides interest in the winter) planters are filled with JOGT plants that are especially beneficial to pollinators these areas were neglected and in need of clearing and replanting. Some staff were keen to garden in these areas, but just needed some help to get them started the courtyards provide sheltered microclimates for pollinators Some verges were less flower rich. Here we were able to experiment with different techniques, such as removing turf and top soil to reseed areas or adding wildflower turf

Achievements (continued)

KEY INDICATOR	OUTPUTS	BENEFITS
<p>40 interpretation panels on health board sites</p>	<ul style="list-style-type: none"> • 40 large and small panels have been placed next to Biophilic Wales interventions 	<ul style="list-style-type: none"> • staff, patients, visitors and local communities learn more about the benefits of being amongst wildlife • people can use the panels to identify some of the plants on site • people can learn more about the project and how they can get involved • panels have been especially important for explaining no-mow areas and the benefits for wildlife
<p>relaxation areas and walking routes on 10 sites</p>	<ul style="list-style-type: none"> • 28 relaxation areas <ul style="list-style-type: none"> ◦ 2 green roofed shelters ◦ 6 shelters with seating ◦ 12 picnic benches ◦ 8 benches 	<ul style="list-style-type: none"> • people are encouraged away from their work stations during break times • people are more active, just from walking to relaxation areas • these areas can be used for more informal meetings • it has been proven that stress is reduced whilst spending time in these spaces
<p>5 sites better connected to surrounding green space</p>	<ul style="list-style-type: none"> • almost all the sites we have worked on have seen better connection to surrounding green spaces 	<ul style="list-style-type: none"> • hedges have provided long strips of connectivity on the edge of sites • planters placed on sites with no other green infrastructure have reduced the distance needed to travel for foraging pollinators • working in partnership with B-lines connecting health board sites in Neath and Mumbles to Margam connectivity corridor project

Achievements (continued)

KEY INDICATOR

bird boxes, bug hotels and bat boxes on 5 sites

OUTPUTS

- 20 bird boxes, 4 bug hotels and 1 bat box put up on 19 sites

BENEFITS

- bird boxes and bat boxes replace lost nesting sites
- people have the pleasure of watching bird life during the nesting season
- footage from birdbox webcams can be seen on the intranet and on waiting room monitors



Volunteering

Volunteers are at the heart of Biophilic Wales, and much of **Inspiring Spaces** work would not have been possible without them.

Throughout the project, we have worked in consultation with the volunteer manager for SBUHB.

Most people who volunteer in a health board setting choose to help out in patient facing roles. However, there are a few volunteers that sign up for gardening duties.

Biophilic Wales promoted volunteering opportunities through Volunteering Wales and local Councils for Voluntary Service (Swansea and Neath Port Talbot CVSs) and social media. Biophilic Wales volunteers were managed by the Biophilic Wales team and covered by National Botanic Garden of Wales insurance.

Staff volunteers

Whilst working at health board sites, several NHS staff have expressed an interest in volunteering. We have offered support for staff gardening groups and staff are also willing to give their time to improve courtyard gardens adjacent to their wards.

Social prescribing

Anyone's well-being can benefit from volunteering. It provides social interaction, a sense of community, physical activity in the fresh air, time spent amongst nature and a sense of achievement. **Inspiring Spaces** volunteering was promoted amongst social prescribers and their networks.



Volunteering

Volunteers during a pandemic

Volunteering was severely affected by COVID-19, with national lock downs and extra precautions on Health Board sites. In March 2020, we realised that volunteers wouldn't be able to join us on weekly volunteering. So we devised a home volunteering opportunity.

Join Our Growing Team

This campaign couldn't have been better received as many people were at home on furlough and had time to grow plants. They also recognised that spending time amongst nature was good for their well-being. Just under 2000 people signed up to grow perennial plants for NHS sites.

In January of 2021 COVID restrictions were still very much part of life, so we provided another home volunteering experience, Growing Together.

Growing Together

We asked volunteers to grow annual wildflowers and complete 3 well-being questionnaires during the growing season as part of the biggest well-being study of its kind. Just under 6000 people signed up to participate and grow more plants for NHS. Our hypothesis was that spending time growing plants and volunteering is good for well-being. Results are being fully analysed at the time of writing this case study, but preliminary findings do show that average well-being improved throughout the growing experience.



Space for Nature



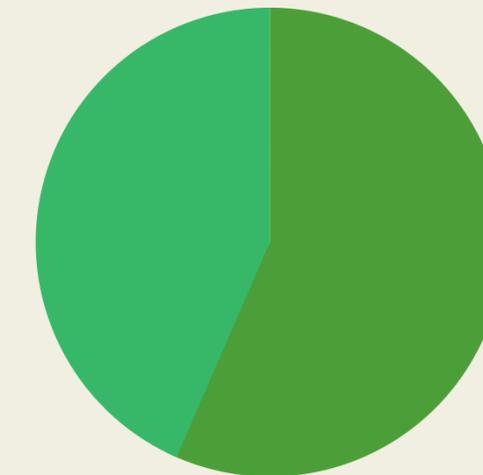
Swansea Bay University Health Board sites vary greatly in how much green space they have.

Many health centres and clinics have no green space at all, parking is at a premium, and there isn't room to add planters.

However larger hospital sites have substantial green space. Some of these spaces are amenity grasslands which are cut short on a fortnightly basis around hospital buildings. There are also wilder areas on the periphery of sites, with well established woodlands and more biodiverse grassland. Management of these wilder areas is minimal, with woodlands only managed for tree safety management.



Green infrastructure
43.5%



built on area
56.5%

Total area of SBUHB land

Relaxation areas



Whilst visiting SBUHB sites to do preliminary surveys, and indeed during subsequent visits, many staff were seen outside between shifts or during breaks. However, as there is no provision for seating or shelter, staff are having to perch on roadside furniture or even fly-tipped rubbish on roadsides.

Inspiring Spaces relaxation areas have provided a place to sit and when people have a place to sit they are more likely to linger for longer. It is during this downtime that people can take the time to notice the wildlife.

- Relaxation areas are areas of calm and fresh air and wildlife vital for people's well-being
- Some of these areas are elaborate and feature shelters with green roofs, some are simply benches and picnic benches, with areas of enhanced biodiversity
- There is a lack of outdoor space for staff to use during breaks, so simply providing seating outside is a huge improvement
- By employing simple inexpensive interventions, many areas could be spread widely over sites, so they were close enough for most staff to use on a short break
- Staff are also keen to use the areas with shelters or picnic benches for outdoor meetings

Bringing nature into the buildings

Of course there are people in health board settings who can't get outdoors. It has been documented that even looking at images of nature can have a calming effect. Biophilic Wales produced a film that brought together all aspects of the project. It celebrated iconic Welsh landscapes with close-ups of plants and pollinators. Coupled with a soothing soundtrack, we hoped the film could be utilised in waiting rooms, but many waiting rooms have been repurposed during the pandemic. Once the waiting rooms are in use again, the film can be used and we're hoping it will have a calming effect while people are waiting for treatment and consultations. There is also potential for the film to be watched on tablets on hospital wards. We are providing a QR code poster for waiting rooms without monitors, so patients can watch the film on their own devices.

GRASSLAND MANAGED FOR OPTIMISED BIODIVERSITY

Communicating the No-Mow message

After preliminary surveys of all the sites, we encouraged site managers to adopt a no - mow regime on as many areas of amenity grassland as possible. Responsibility for the grounds varies on sites. Some areas are managed by an in-house team of gardeners, and on some sites grass cutting goes out to contractors. Whilst this didn't involve an increase in workload or the need to acquire new skills, there was still resistance. Most of the gardeners took pride in keeping their grassed areas neatly trimmed and it forms a significant part of the summer work programme. For some, the reduction in work caused worry about job security. Some just didn't like change. Good lines of communication are vital to explain the benefits of a no-mow regime.



Lessons learnt

GRASSLAND MANAGED FOR OPTIMISED BIODIVERSITY

Initially, our aim was to leave as much grassland as possible, unmown. However, it soon became clear that a little compromise can make the transition easier for the uninitiated. By mowing neat margins around wildflower areas, we sent out the message that these areas were still looked after. We coupled this with simple "Space for Nature" signage to explain why we'd left the area wild. In some cases we went even further with more mown grass and islands of unmown areas. These areas were very effective in giving the impression that we'd planted a wildflower bed. We also cut paths through unmown areas to encourage people to walk through. Many of these mown paths led to benches, for people to take a break.

One area where there was little resistance to the no-mow regime was in car parks. The small strips of grass in car parks are time consuming to maintain and impossible to cut if there are cars parked close by. These areas are generally low fertility, being made up ground and therefore can be flower rich. Some of these areas are also harder to reach or on steep slopes, so reduced mowing on such terrains has Health and Safety benefits, too.

Lessons learnt



GRASSLAND MANAGED FOR OPTIMISED BIODIVERSITY

A major hurdle is people's perceptions of what an unmown area will look like. They expect the grass to get really long, but in many areas, the soil fertility is so low and less vigorous grasses dominate resulting in a low sward height and less thick grass.

Adopting a new no - mow regime results in time and cost savings with a reduced carbon footprint, due to less fossil fuels being used in mowers and trimmers throughout the growing season.

However, it is also essential to remove cuttings when grass is cut at the end of the summer. This reduces fertility, which favours wildflowers by reducing the growth of more vigorous grasses which compete with the flowers. This is a more laborious process than regular cut and drop techniques and if there isn't the space to compost the cuttings on site, there are costs associated with disposing of this green waste and fuel needed to transport to green waste recycling centres.

In the future there is potential for gathering material cut from verges and using it as a feedstock for biogas heat-and-power stations. A study in Lincolnshire showed that the material from verges could be sold for more than the cost of harvesting, and the realistic energy potential of roads within 20km of an Anaerobic Digester plant harvested to a width of 2m could generate 1195 GWh - enough to power 169 homes.

Lessons learnt

The job of cutting and removing grass is made less labour intensive with cut and collect machines, but these are a fairly new addition to the gardener's arsenal, so most gardening teams and contactors won't have these specialist machines. They are significantly more expensive to purchase than a mower, but will hopefully become cheaper and more common as demand increases.

The photos to the right show what can grow, if you stop mowing. The difference between the unmown area and the mowed area is clear to see. There were no other interventions made to this grassed area. Seven bee orchids were also found in this area. The ground on this site was especially poor, which favoured the wildflowers.



DEVELOPMENT OF HEALTH BOARD LAND

There are many areas within the health board, which had potential for biophilic interventions. However, the bigger the green space, the more likely it was that it could be earmarked for development. Hospitals are ever expanding and new buildings or services take up space. When planning the location of trees, or high cost items, we chose areas that were too small to be built upon or where other factors prohibited building.



Lessons learnt

INCREASING ACCESS TO COURTYARDS

The design of many large hospitals incorporates courtyards to supply natural light and a view of the outside world for wards.

Courtyards are accessible from corridors, wards or both, but it was frequently found that the doors were locked.

These courtyards are a valuable resource that could be utilised by staff and patients, but have been rendered inaccessible due to issues with anti-social behaviour - mainly littering and smoking.





Learning Disability Residences (LDR)

Inspiring Spaces have approached these residences with long-term patients and offered to provide bulbs, plants and tools so that residents and support workers could take ownership of their green spaces and enhance their gardens. All LDRs were very grateful and excited to receive the plants and tools. Gardening can be scheduled as a regular activity, which helps give structure to people's routine and greatly improves well-being.

If staff and long-term patients in hospitals can get involved in planting and garden maintenance, they are much more likely to care for the plants, and the results of their hard work will be appreciated all the more when plants flower and thrive.

Lessons learnt

Consultation and Engagement with service users

The more users are consulted and involved in planned interventions, the more we can provide really valuable green infrastructure assets. The Estates team was the main point of contact and our interface with SBUHB, but wherever possible, the opinions of other departments were sought, and their input was especially valuable. However with an organisation as large as the NHS, it isn't easy to reach all the people who would benefit from being involved in the project.

Mainstreaming

There is absolutely no reason why all the methods and interventions employed by this project can't be mainstreamed, both in terms of i) SBUHB maintaining the interventions provided and continuing with more of the same and ii) other Health Boards being able to replicate the work done at SBUHB.

During the 30 months of Inspiring Spaces, it has been shown what can be achieved, but more time is needed to see the long-term results and embed the ethos of the project.



INSIGHT 1

Expectations need to be managed

- Native plants are great for our wildlife, but might not be as showy as cultivated varieties.
- No-mow areas are also great for wildlife, but might look untidy to some who prefer a manicured lawn. But once the benefits to wildlife are explained, most people support the change in management.



INSIGHT 2

Volunteers are a valuable asset,

...but they do need support. All the volunteers for Biophilic Wales are keen to continue volunteering beyond the funding period, but they do need support and good communication to keep them engaged.



INSIGHT 3

Working in Partnership

There are lots of organisations to reach out to for expert advice, if health boards don't have the in-house knowledge. As well as the main partner organisations, Biophilic Wales worked with Keep Wales Tidy, Local Nature Partnerships, Buglife, Magnificent Meadows, Swansea and Neath Port Talbot Councils for Voluntary Services. By linking up it is possible to make more, improved, bigger and better connected places for nature.

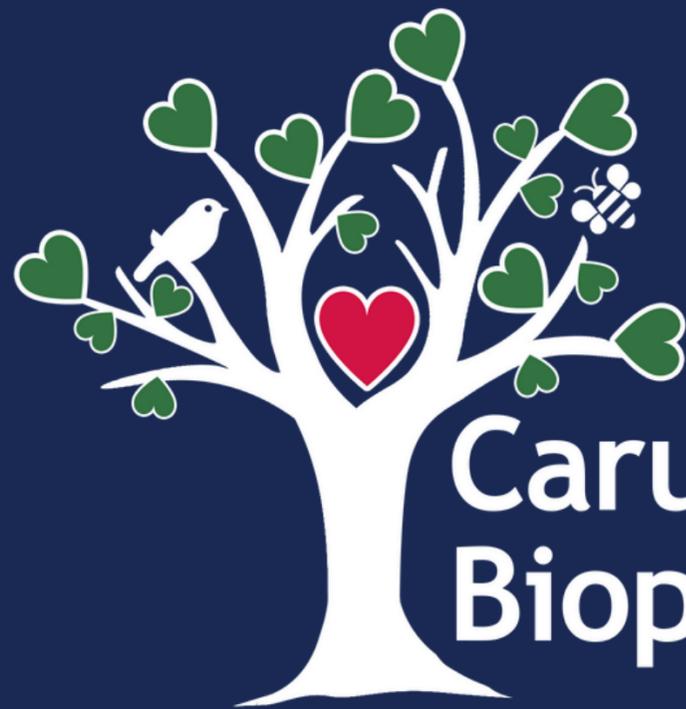
Next Steps

The Strategic Plan identified many possible interventions, and there wasn't capacity to complete all the interventions in two and a half years of Biophilic Wales.

We had hoped to achieve at least two Green Flag Awards during the project. As the Health Board felt the impact of COVID, it is understandable that Green Flag awards were not high on their list of priorities. However, the work completed in Inspiring Spaces puts the Health Board in a very strong position to achieve awards. In the last two months of the project, work resumes to apply for a Community Green Flag for Gorseinon Hospital and a Green Flag Award for Morriston Hospital.

This pilot leads the way so that other Health Boards can be inspired to take even small steps which can make big differences on their sites, and valuable improvements in everyone's well-being.





Caru Natur Cymru
Biophilic Wales

Contact

National Botanic Garden of Wales

Middleton Hall, Llanarthney,

Carmarthenshire SA32 8HG

www.botanicgarden.wales