

Forth Valley Royal Hospital and Larbert Woods



Development Name: Forth Valley Royal Hospital and Larbert Woods

Location: Larbert, Scotland

Type of project: Community infrastructure

Applicant: NHS Forth Valley

BwN Assessor: Sheena Raeburn, RaeburnFarquharBowen

BwN Award: Full (Excellent), National Award 2020

Key Stakeholders: Forestry and Land Scotland, Green Action Trust, Maggie's Centres, Falkirk Council

The Forth Valley Royal Hospital and Larbert Woods development, Winner of the Building with Nature National Award 2020, was a replacement for Falkirk and Stirling hospitals, delivering 25 wards and 16 operating theatres. At the point of construction, it was the largest NHS construction project in Scotland.

The development is an exemplar of how a shared vision for protecting and enhancing existing natural features can be achieved through collaborative working at all stages of planning, design and delivery. The central partnership between NHS Forth Valley and Forestry and Land Scotland, benefited from the input of the Green Action Trust who provided the detailed design of the woods area, and from landscape architects RFB who designed the hospital grounds, as well as setting out a masterplan and design guide for the woods area. There is also a new Maggie's Centre situated to make the most of this tranquil environment.

At the heart of this community infrastructure project was a decision to restore the historic

landscape, including Larbert Woods and an existing loch. New green infrastructure features were introduced throughout, including garden courtyards within the hospital facility for patients and staff, an accessible visitor garden and play features at the entrance to the facility, and above-ground surface water management features throughout the car parking area.

Overall, green infrastructure has been fully integrated to promote good health and wellbeing, not just treating illness - bringing benefits for patients, staff, visitors, and the local community. Landscape and nature have been central to the project, and we would suggest that the imaginative thinking which is evident at Forth Valley can provide lessons for all NHS Estates.

*A **Building with Nature Full Award** externally certifies that a scheme meets the BwN Standards and delivers high-quality green infrastructure, at both pre- and post-construction stages.*

Introducing Building with Nature

At Building with Nature our mission is to put high-quality green infrastructure at the heart of placemaking in the UK, maximising benefits for people and wildlife. By bringing people closer to nature and building great places for us to live, work and play, development can make a major contribution towards better health and wellbeing in our communities and tackling the climate and ecological emergencies.

Building with Nature is the first evidence-based benchmark for high-quality green infrastructure in the UK. The BwN Standards Framework has been created in partnership with planners, developers, and other key stakeholders, providing a shared understanding of ‘what good looks like’ throughout the whole lifecycle of green infrastructure – from the policy framework and early-stage design, through to implementation, and long-term management and maintenance. The BwN Standards are free to use and can be downloaded from the BwN website. Building with Nature also provide a voluntary accreditation process, helping developers and other stakeholders move through the planning process more effectively, and providing an independent verification of quality when it comes to green infrastructure assets.

This case study demonstrates how this scheme’s green infrastructure meets the BwN Standards, illustrated through the BwN themes of Core, Wellbeing, Water and Wildlife.

Scheme Green Infrastructure Objectives

The new hospital development is located mostly on the site of the old Royal Scotland NHS hospital. A primary goal of the new development was to integrate more successfully with the surrounding natural asset of the Larbert Estate, which had suffered from neglect and absence of any maintenance. The key objective for the design was to promote the wellbeing of patients and staff while enhancing engagement with green spaces and associated woodland.

Due to the neglect of the estate and woodland, the existing ecological value of the site was low. Many invasive species had limited the regeneration of the original trees. The result was lower diversity across the site. Another priority was the regeneration and improvement of the biodiversity around the existing loch.

Sustainable water management was a necessity due to the size of the new hospital. The loch was integrated into the SuDS strategy, which included northern areas of the site getting future flood alleviation schemes.

NHS Forth Valley had to agree to the maintenance of the natural environment as part of the consenting process for the planning application. They provide a fund for on-going management. An established maintenance period of three years was also included in the planning process.



Image 1: Accessible footpaths through the site allow year-round access to the green infrastructure



Image 2: Maggie’s Centre next to the main hospital building has views out onto green infrastructure from all sides, including onto the loch



Image 3: The viewing platform creates a meeting place by the loch

CORE Standards

- Standard 1** Optimises Multifunctionality and Connectivity
- Standard 2** Positively responds to the Climate Emergency
- Standard 3** Maximises Environmental Net Gains
- Standard 4** Champions a Context Driven Approach
- Standard 5** Creates Distinctive Places
- Standard 6** Secures Effective Place-keeping

Connectivity is a key theme throughout the built and natural environment on the site. Grey and green infrastructure features tie seamlessly into the setting of Larbert estate, for example integrated planting schemes that align native hedgerows and tree species to pedestrian pathways.

Multifunctionality is another primary goal. It is effectively met throughout the site with the provision for both the ecosystem and wellbeing in single features. An example of this are new woodland plantings that provide screening to service buildings while functioning as areas where patients can benefit from nature.

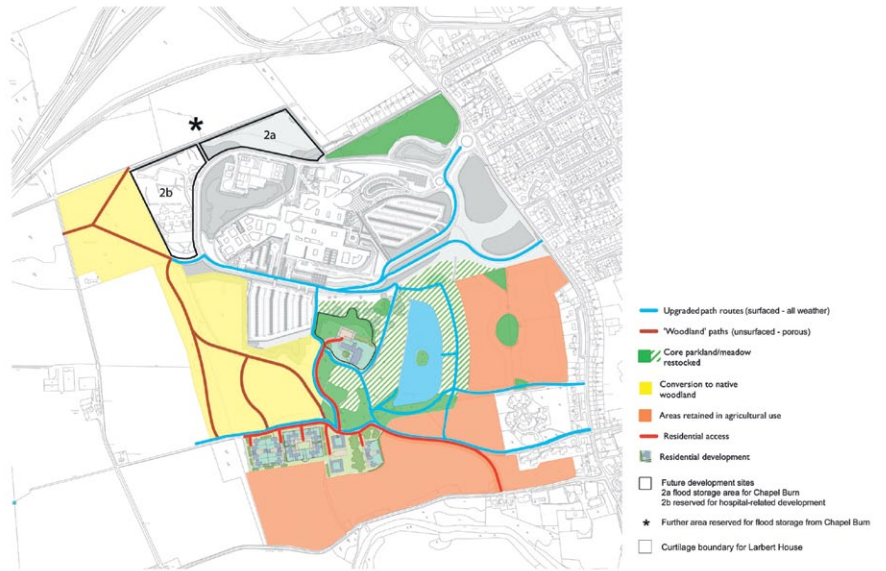


Figure 1: Green infrastructure features and access routes across the Larbert estate

Both the natural environment and historic buildings of Larbert estate are respected in the scheme. Throughout the development, there are **positive visual connections** from the main building entrance over the open parkland. The Women and Children’s Department features views over Larbert House loch.

Other examples of sensitive green infrastructure design are shown throughout the estate including the **restoration of Larbert Woods**, a historic woodland, involving the reassembling of fragmented copses, and redesigning the landforms in open grass areas.

There are a variety of management plants that provide for the **long-term management** of all on-site green infrastructure features. These include the Tree and Woodland Management plan, FVRH Maintenance Specification and the RSNH Masterplan and Management Framework.



Image 4: Green pathways surround the hospital main building

WELLBEING Standards

- Standard 7** Brings Nature Closer to People
- Standard 8** Supports Equitable and Inclusive Places

Green infrastructure features are used throughout the entire development to cement the **accessibility of nature** for all members of the community, no matter their mobility levels. For example, all the pedestrian routes leading to the hospital are lushly planted with vegetation. The internal courtyards for visitors, patients and staff are planted with distinct characters; colours and species change seasonally to encourage further engagement.

The orientation of the buildings allow for patients and staff to have clear lines of site out to Larbert Woods, wetland meadows and loch. These viewing corridors provide visual and auditory access in times of need.

Forestry and Land Scotland piloted their ‘health rangers’ model, bringing together mental healthcare workers and outdoor rangers, at Forth Valley. Activities available include health walks, tai chi, conservation activities, bushcraft and environmental art. **Branching Out**, an innovative programme of outdoor activities for adults who access mental health services in Scotland, has been very successful in assisting vulnerable people with



NHS Forth Valley

Images 5 & 6: Community residents engaging with the newly regenerated green infrastructure of Larbert Woods

both physical and mental health inequalities to reconnect with nature, and functions as a crucial part of their treatment, encouraging individuals to move into inclusive community activities.

The project demonstrates unequivocally how green infrastructure can align with targeted health outcomes. It highlights the importance of the natural environment for the day-to-day life of an entire community.



Image 7: The iconic pier which leads out onto the beautiful loch, perfectly framing Larbert Old Church on the horizon



Image 8: Visitors at the Maggie’s Centre can enjoy the sights and sounds over the loch



Image 9: Well-equipped family and play area a few metres from the hospital’s main entrance

WATER Standards

Standard 9 Delivers Climate Resilient Water Management

Standard 10 Brings Water Closer to People

Sustainable water management is a key tenet of the Forth Valley Hospital and Larbert Woods development. The SuDS strategy is fully integrated within the landscape planning proposals.

The **water strategy** includes a management train of diverse SuDS components. Surface water runoff is attenuated in shallow grass swales which convey water from impermeable roads, footways and car parks. The water then moves towards the newly developed loch and wetlands. An eastern attenuation ditch mitigates flood risk even further, by transferring surface water towards the River Carron.

The newly regenerated Loch (0.5ha) provides significant benefits through provision of standing open water and wetland habitat on site. In addition, wetland vegetation supports important habitats and species and helps to maintain water quality.



Image 10: Vegetated swales and filter strips throughout car park and grounds



Image 11: Mute swans enjoying the loch

Additional **SuDS features** run along the southern perimeter road. There is a large swale feature with detention levees to provide treatment for the water from nearby impermeable surfaces. This swale is planted and maintained with a biodiverse meadow grassland and acts as an ecological corridor along the roads to allow safe species movement.



Image 12: The loch integrates new wetland habitat and marginal planting, a result of removing large areas of rhododendron which obscured the loch and prevented access for many years



Image 13: It is clear that water is regarded as a natural asset throughout the development, providing an opportunity to benefit people and wildlife.



Image 14: The viewing platforms allows an experience of being immersed in the loch and its natural landscape

WILDLIFE Standards

Standard 11 Delivers Wildlife Enhancement

Standard 12 Underpins Nature's Recovery

Much of the biodiversity enhancement on the site occurred through the **targeted regeneration** of the surrounding woodland. Prior to the development, the colonisation of invasive species decreased the bio- and age-diversity of the woodland.

New native plantings replaced the invasive sycamore, birch and rhododendron with native oak, beech and Scot's Pine. The new plantings improved the site's biodiversity and resilience as well as ensuring linkages through hedgerows and trees to the larger habitat in Larbert woods.

Furthermore, the estate boundary woodlands were reinstated with a focus on tree species that would help replicate the original planting and landform.



Image 15: Management and maintenance is key to the longevity of the green infrastructure, and an ongoing partnership between NHS Forth Valley and Forestry and Land Scotland ensures a dedicated resource for sensitive management



Image 16: Improved marginal species biodiversity as a result of invasive weed removal

Alongside the woodland habitat enhancements, **key conservation habitats and species** were targeted, such as the roosting spaces provided for brown long-eared bats, and measures for swallows and thrushes.

Finally, coot, mallard, and mute swans have been observed re-entering the loch habitat due to the easier access provided to them after the removal of invasive species. The species provide opportunities for the public to appreciate the ecological value of key species and enhance the education around them.

Policy Applications

The Forth Valley Royal Hospital and Larbert Woods development showcases how an infrastructure development can go above and beyond policy compliance. Founded in 2010, the development pre-dates Falkirk Council's draft Green Infrastructure and New Development SPG (2021) by over a decade. And yet, the key principles in the policy document, covering wellbeing, provision for open space and active travel, have been comfortably demonstrated.

Themes drawn from the emergent National Scottish Planning Policy (NPF4) are also evident. For example, the design successfully demonstrates how to 'protect, enhance and promote green infrastructure, including open space and green networks, as an integral component of successful placemaking.'



Forth Valley Royal Hospital

Image 17: Forth Valley is an exemplar for green infrastructure in development

“ This award-winning project showcases what can be achieved when environment and health professionals work together and build with nature to transform and revitalise the outdoor NHS estate for health and wellbeing. ”

Kevin Lafferty – Scottish Forestry, National Policy Advisor Access, Health and Recreation

Summary

At the heart of this development, is an innovative partnership between NHS Forth Valley, Forestry and Land Scotland and Scottish Forestry. With technical input from other key stakeholders, including Green Action Trust and RaeburnFarquharBowen, Forth Valley Royal Hospital and Larbert Woods demonstrates what is possible when a medical facility is truly assimilated into high quality natural landscape.

The built development enhances and contributes new green infrastructure through garden courtyards and visitor gardens. Additionally, the existing resource of Larbert Woods and the wider Larbert estate has been restored to its former ecological value, with the loch and wetlands becoming a focal feature for patients, staff, visitors, and the local community to engage with and benefit from nature.

“ The woodland around Forth Valley Royal Hospital provides a great resource for local patients, staff, visitors as well as the wider community to enjoy being more active, more often outdoors. Within minutes you can reach beautiful greenspace which has a very calming effect. People of all ages walk, jog, cycle around the loch and network of woodland paths. Many groups and organisations, including local schools make use of the hospital grounds for exercise, learning and a wide range of outdoor activities which is fantastic to see. ”

Linnet McGeever, Lead Colorectal Clinical Nurse Specialist, Forth Valley Royal Hospital

Useful Links

Building with Nature: www.buildingwithnature.org.uk www.buildingwithnature.org.uk/video-case-studies

Applicant: www.nhsforthvalley.com

BwN Assessor: www.raeburnfarquharbowen.com

About the scheme: <https://nhsforthvalley.com/media-item/greenspace-initiatives/>

Download the BwN Standards: www.buildingwithnature.org.uk/standards-form



Building with Nature

Conservation Centre
Robinswood Hill Country Park
Reservoir Road
Gloucester, GL4 6SX

Telephone: **01452 383 333**

Email: [**info@buildingwithnature.org.uk**](mailto:info@buildingwithnature.org.uk)

Build with Nature Ltd, trading as Building with Nature.
Company number 11283471