

BELFAST

FOR PEOPLE AND NATURE



SITE INTERVENTIONS:

- 1 Research Plots
- 2 Rewild and nature walk
- 3 Agroecology community garden & community education space
- 4 Nature based medicine garden
- 5 Communal tree nursery

QUEEN'S QUARTER



LOWER BOTANIC

Current use:

The Belfast demonstration site is an informal open green space. The site is close to the Lyric Theatre, Queen's University's Physical Education Centre, Botanic Primary School, and Botanic playpark. During the day, the site is used mainly by dog walkers as it is a quiet space close to several neighbourhoods. At night, the site is unlit and unused, however nearby sports pitches are utilised up to the late evening. A large car park owned by the PEC sits next to the site providing additional day and evening surveillance. Despite this, residents next to the site have reported that it is occasionally associated with anti-social behaviour due the limited night-time surveillance.

A path through the **demonstration site links neighbourhoods along the Annadale embankment including Botanic Gardens, Queen's University Belfast PEC, and the Queen's University campus. It is used by cyclists, walkers, and school children** to connect residential neighbourhoods along the Stranmillis Embankment (a National Cycling Route), to Ormeau, the Holylands, Stranmillis and the wider South Belfast area. Botanic Gardens closes at night so connectivity through the site is cut off out of daylight hours.

Existing biodiversity of the site is most prominent at its fringes, with some native trees, and evidence of invasive species, such as Japanese knotweed, as well as non-native planting of bamboo from a previous Japanese garden on the western periphery of the site. A badger sett has been identified on the site and an ecological survey was carried out which identified extensive biodiversity present on the site's open grassed area.

QUEEN'S AREA

BOTANIC GARDENS

BOTANIC PRIMARY

PEC

LYRIC THEATRE

HOLYLAND AREA

LOWER ORMEAU

Ormeau Embankment

ORMEAU PARK

ORMEAU

STRANMILLIS

Annadale Embankment

Previous use:

The former Botanic Gardens, later adapted as a **public park** (14.3ha), lies on the western bank of the River Lagan, some 1.5km towards the south of Belfast City Centre. Botanic Gardens **today is a heavily used public park and thoroughfare**, which has excellent features and planting. It was established in 1828 by the Belfast Botanical and Horticultural Society in response to demands for a botanical garden for Belfast and was open to Society members. **Belfast Corporation purchased the property in 1895 and they were opened to the public.** The park contains historical buildings of European significance such as the Palm House and Tropical Ravine. Throughout its history Botanic Gardens was used as an events space, hosting garden fetes, flower shows and private events. It hosted the first Irish balloon ascent in the largest balloon in the world, as well as the Great International Fruit and Flower Show of August 1874.

The area where the UPSURGE site is located was an additional piece of ground acquired along the River Lagan, which was less developed than the formal gardens, but also used for growing. The Lower Botanic site for a period housed the Jaffe Memorial Fountain, erected by Otto Jaffe, Belfast's first Jewish Lord Mayor, in commemoration of his father who funded Belfast's first synagogue. This has since been restored and returned to its city centre location.

From 1946, during the post second world war housing shortage the site housed temporary prefabricated huts for use as accommodation. They were known as Botanic bungalows. These were here until the clearance of the site for use as the Ulster 1971 Convention, a large festival held from May to September, originally conceived to mark the 50th anniversary of the establishment of Northern Ireland. The site has remained undeveloped and is identified on historical maps as playing fields. It has more recently been used for events such as music concerts and circuses. There is evidence of asbestos, and waste materials from previous uses as well as from other nearby sites following recent site investigations.

New green investments in BELFAST

City-centered approach to catalyze nature-based solutions through the EU Regenerative Urban Lighthouse for pollution alleviation and regenerative development.

UPSURGE's main objective is to build the EU Regenerative Urban Lighthouse as a reference framework offering guided support on how tested and verified NBS can be strategically implemented to significantly improve the multitude of problems faced by cities.

The Lighthouse will be a knowledge and practice-based European framework created on real-life tested NBS practices implemented by different innovative EU cities, research institutions and companies. As the knowledge core of the Lighthouse, the Urban Regenerative Development.

Belfast

Belfast is the capital city of Northern Ireland (NI), and it is a maritime city located along the River Lagan at the mouth of Belfast Lough. The local government district had a population of 345,418 in the 2021 census but the Belfast metropolitan area has a population of 671,559 (2011 census), equating for 37.1% of NI's population. Belfast city accounts for 18% of the population of NI and 30% of all jobs at over 220,000. 93% of jobs are in the services sector, with almost one third in the public sector. The median gross weekly pay in 2009 was £575. The area of Belfast Local Government District is 42.31 square miles (109.6km²). Belfast has 24.88 persons per hectare, compared with the average for Northern Ireland of 1.34 (Census 2011) making it the densest local government district, however there is an ambition to densify and grow the population of the city by 66,000 more people by 2035 (Belfast Agenda, 2018).

It is one of the youngest cities in Europe with young people up to the age of 21 making up nearly a third of the city's population, while a fifth of the city is under 15 years old. The city is growing older though, with today 15% of the population 65 and older. By 2035, this will rise to 20%. Currently, life expectancy for males is 75.9 years, whilst for females it is 81.1 years however the gap between the 10% most deprived and least deprived areas of NI is 10.7 years for males and 7.7 years for females.

Northern Ireland has a stable climate due to the moderating effect of the Atlantic Ocean, resulting in mild winters and cool summers. The indented shape of the coastline and the presence of high ground introduce localised differences in weather. July is normally the warmest month with temperatures varying from 17.5 °C to 25 °C. The number of warm days exceeding 25°C corresponding to heatwaves have increased threefold in the last decade. The wettest months are between October and January. The average annual temperature in Belfast is 9.2°C.

As a post-conflict city, Belfast has a high number of physical barriers, largely located in the inner city. These barriers promote private car use, disincentivise active travel and directly impact the city's carbon emissions and air quality. Belfast is a car dominated city despite around 40% of households with no access to a car or van. Belfast has 66 parks, totalling an area of 946.6 hectares, 38 growing spaces, totalling 1.8 ha, and overall, a total of 2388.4ha of open spaces including playing fields, play areas, amenity space, civic spaces, and cemeteries. The city has several statutory designations which include the Belfast Lough SPA and RAMSAR site (428.64ha), Belfast Lough Open Water SPA (5,591.73ha), seventeen priority habitats and several important wetlands, one Area of Scientific Interest, three Nature Reserves, and Lagan Valley Area of Outstanding Natural Beauty, and six areas of Earth Science Interests and Assets.

Through a city-wide resilience assessment, the Belfast Resilience Strategy (2020) identifies several shocks and stresses facing the city. Shocks facing the city include the area's infrastructure capacity, public health, cyber resilience, the condition of existing housing stock, flooding, and extreme weather events as well as the UK's exit from the EU. Stresses facing the city are its economic recovery capacity, climate change, mental ill health, poverty and inequality, housing supply, use of prescription drugs, population change, segregation and division, governance and financing of risk and carbon intensive systems.

Lower Botanic

The demonstration site identified for Belfast, is located in the South of the city.

The site, **known locally as Lower Botanic**, has been chosen as it is an **underutilised piece of open space** currently within the Council's estate that is close to a range of surrounding and diverse communities. **The site is linked and part of the Botanic Gardens, a designated Historic Park and Demesne with a rich history of botany, growing, civic and community uses.** Whilst not within the conservation area, the site sits adjacent to Queen's Conservation area, the first to be designated in Belfast in 1987. It is also recognised as a Local Landscape Policy Area, and sits adjacent to the Lagan Valley which is a Special Protected Area and a RAMSAR site of European importance. The UPSURGE demonstrator site runs along the Stranmillis Embankment facing into the River Lagan to the east. Lower Botanic is close to Queen's University Belfast and so offers a high level of access for research activities to take place on the site. To the west it sits adjacent to some housing and the Lyric Theatre. The Lower Botanic site is easily accessible by bike, car and by walking from all sides, however access through Botanic Gardens is usually limited to daylight hours. It sits within the larger Queen's Quarter of South Belfast which is an area of the city with a large student population and a large university estate. The Holylands is a residential area with a large number of Houses of Multiple Occupation which is a short walk along the embankment from the site.

The park already benefits from a local group of community interests, the **Friends of Botanic** and a substantial operation of park staff that currently **maintain, develop, and act as stewards for the Park.** The site has significant potential for contamination due to its previous uses over many years and so offers a unique opportunity to test soil decontamination through growing and other nature-based solutions.

Intervention 1 Research Plots

One section will **measure bio-accessibility values** from soils and vegetables grown onsite in non-amended and biochar-amended soils. The other section will **measure carbon and nitrogen isotope values from soils** (and potentially vegetables) grown onsite in non-amended, biochar, basalt, and biochar+basalt amended soils in conjunction with Antwerp University. This research contributes to the city challenges around health and Brexit, identifying ways in which a more sustainable food system might be achievable in Belfast through food growing and remediation on contaminated land. **A sustainable food system is one of the ambitions of the Belfast Resilience Strategy.**

Intervention 2 Rewild and nature walk

Areas of the site will be **'rewilded'** to **encourage biodiversity** and **increase ecosystem services** in the area. This will also encourage more wildlife habitats and provide pollination and food to support improving biodiversity in the city and citizens will be encouraged to help record, monitor and track how this changes across the site as the NBS is established.

Intervention 3 Agroecology community garden & community education space

This space will provide growing opportunities for groups and residents to engage with the site. Various health benefits are known from shared growing and engaging in urban green spaces in a city, and this will also provide a space to overcome segregation and division that is built into the physical layout and residential make-up of the city. It is also hoped that this space will also **help tackle poverty and inequality** by developing opportunities for social enterprise through making, growing, creating etc. Giving young people and older people a **space to work** alongside one another, will also help create more inclusive, **age friendly environment.**

Intervention 4 Nature based medicine garden

This space will **encourage development of horticultural skills** among groups such as the Friends of Botanic and a **growing volunteer base** for Botanic Gardens. Accredited courses could be run to help enable skills growth and stewardship of Belfast's natural and green spaces.

Intervention 5 Communal tree nursery

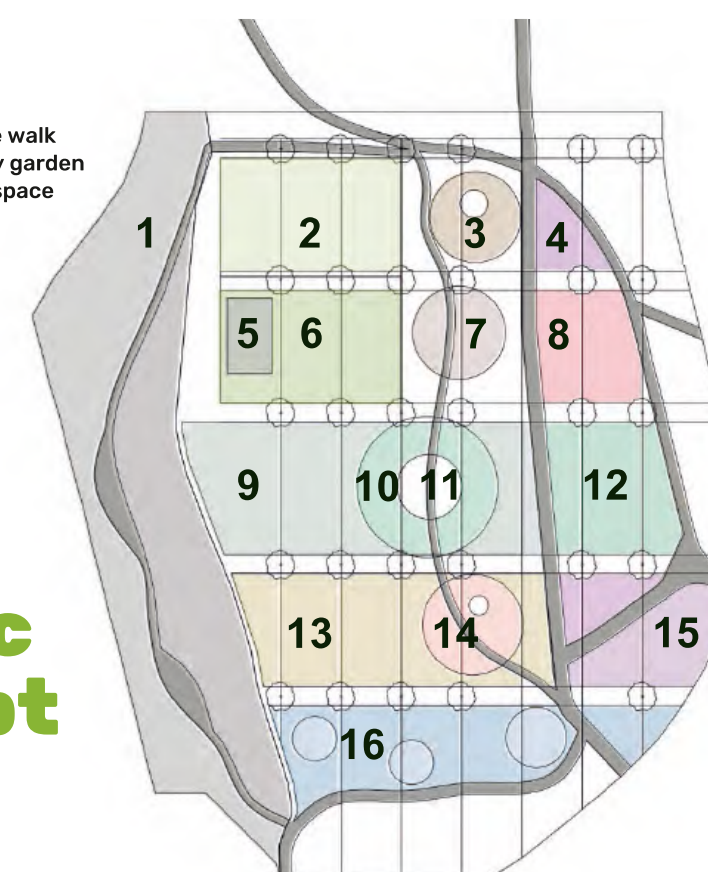
Brexit has created **challenges for the sustainable and bio secure supply of trees** to Northern Ireland. There is also the need to **develop an awareness of the climate benefits of trees and shrubs.**

BEFORE

AFTER



- 1 rewild & boarded nature walk
- 2 agroecology community garden
- 3 community/education space
- 4 informal marketplace
- 5 research plots
- 6 nature based medicine garden
- 7 resilient plant show garden
- 8 cycle shelter and edu-sculpture park

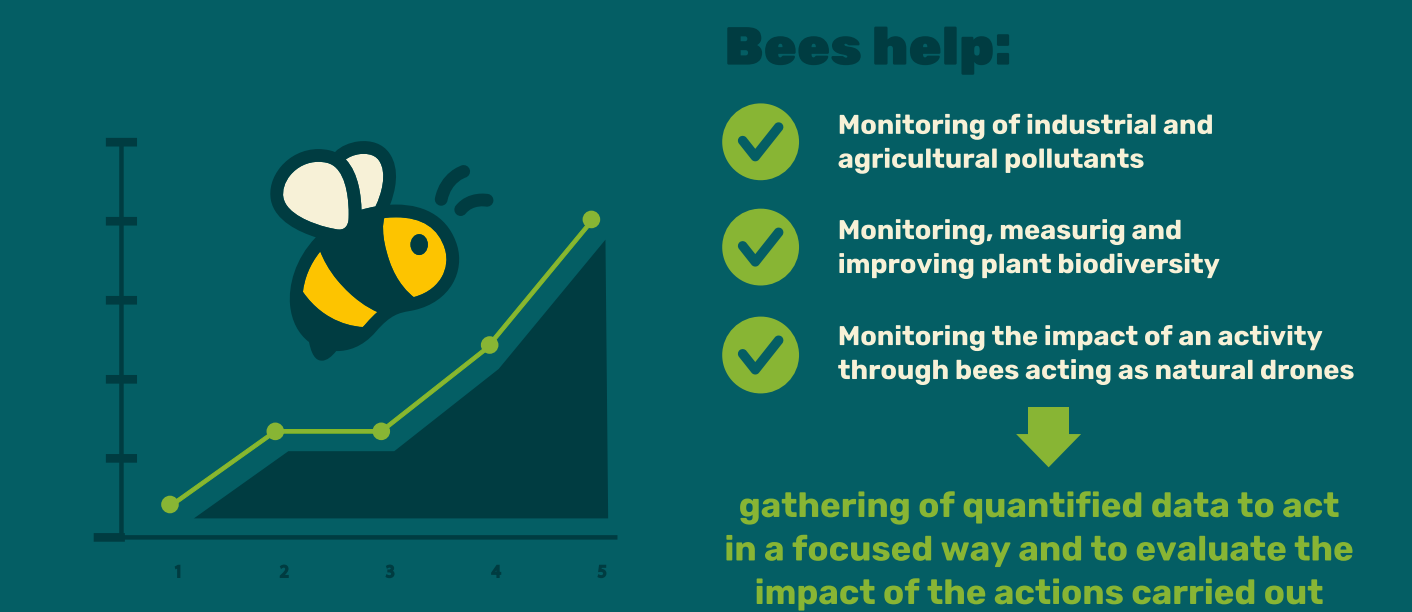


- 9 meadow
- 10 miyawaki intense urban forest
- 11 forest clearing
- 12 climate arboretum + „1 million trees“ zone
- 13 flax field
- 14 outdoor theatre clearing
- 15 nature play zone
- 16 ponds, dipping ponds + water garden

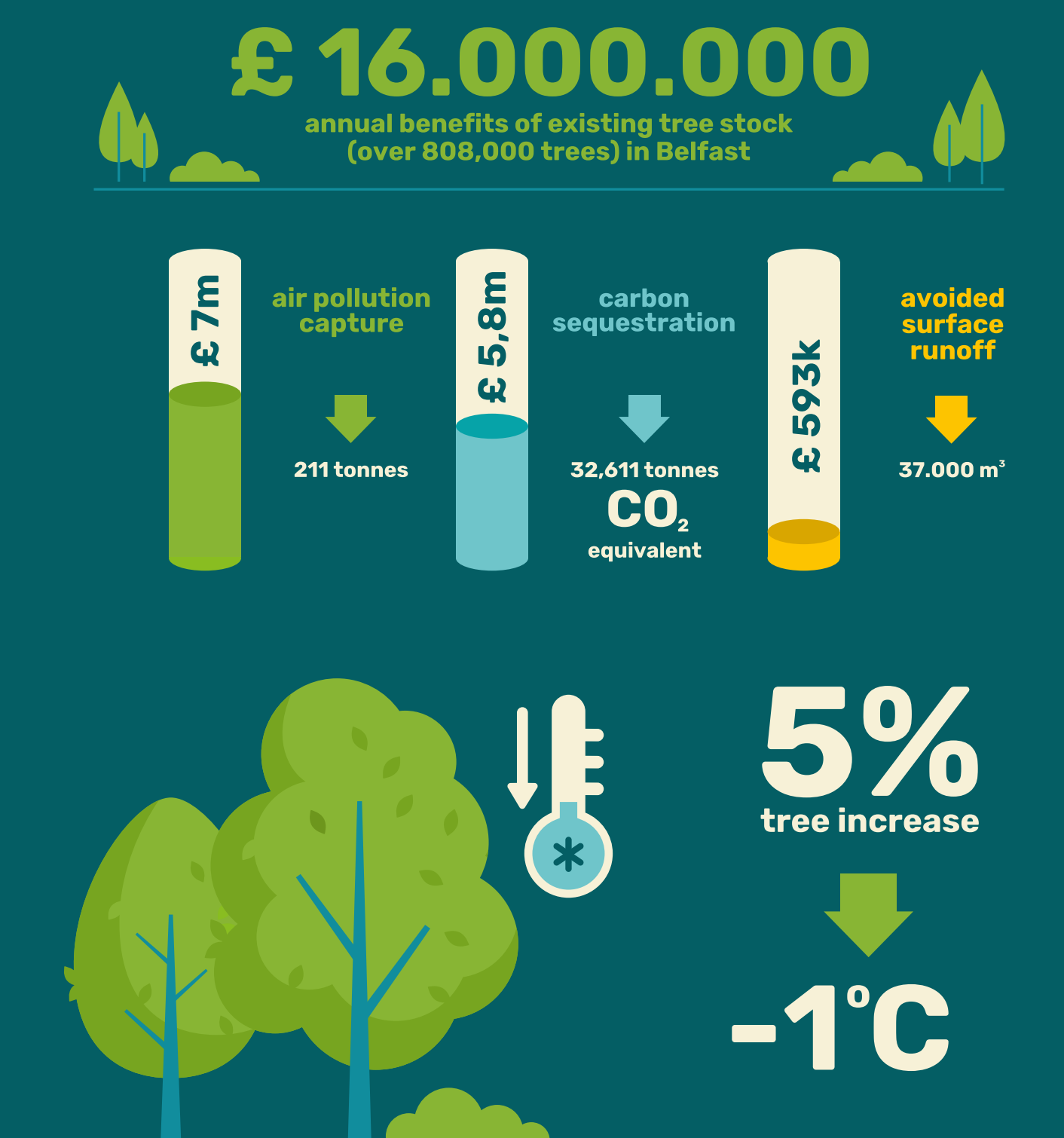
Lower Botanic Concept Design

Do you know that...

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