

Sustainability Blueprint V1

*Project Green,
Lethamhill Golf Course
Glasgow, Scotland*

Planning Issue

Produced by:



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1. INTRODUCTION

This Sustainability Blueprint has been prepared by GEO in order to present a concise summary of the anticipated environmental enhancements and social value integrated into this proposed flagship project for sustainable golf and urban greenspace regeneration.

It provides an overview of the vision and the approach being taken to help ensure that the project fulfils its overall potential to go beyond responsibility and into social and environmental regeneration, in a way that strengthens the overall business model.

The Blueprint also forms the key milestone report, for the project on the pathway to the GEO Certified® Development mark.

The GEO Certified® Development mark is the international sustainability certification system for golf design and construction. It represents the highest available standard of sustainable design and construction for the golf industry.

The mark aims to distinguish the world's most sustainable golf developments. It gives credible recognition to projects which demonstrate leadership from local through to global level in all three pillars of sustainability: environment, society, and economy.

The project is independently verified at key milestones corresponding to the following stages of golf development:

1. **Design**
2. Construction
3. Completion

This Sustainability Blueprint report corresponds to the design stage of the certification process. For more details of the certification system, its process and assurance model visit

<http://www.sustainable.golf/>

Lethamhill Golf Course formally registered in the OnCourse® Developments programme in December 2020.

2. PROJECT OVERVIEW

CLIENT PROJECT PHILOSOPHY

The development at Lethamhill is perfectly aligned to The R&A's purpose: **“To make golf more accessible, appealing and inclusive, and thriving 50 years from now.”** The R&A believe that golf started in Scotland as a game for the people. It was not just a game, but a key component of community life. Over the passage of time this has been largely lost and the sport has moved in a different direction. We see the future of golf being driven by a new model, a new “pathway to golf” which is open, accessible and focuses on being family orientated.



Figure 1: The Hub – Concept Visual (Source: Client)

In June 2020, The R&A identified Lethamhill Golf Club in Glasgow, Scotland, as the first potential location of “Project Green”. The Vision is to create a golfing experience, with an inspirational delivery of the game which truly encompasses: **1) shorter forms of the game, 2) increased family and community orientation and 3) accessibility.** For golf to evolve it needs to deliver improved accessibility as well as affordability. This new facility would aim to inspire future golfers to join us on the “pathway to golf”, with a great experience, available to all, with local community at it’s heart. Project Green Glasgow, would be a unique test-case and could provide the framework for further roll-out of similar facilities across the UK and beyond, intending to deliver core objectives directly to a global audience.



Figure 2: The Hub – Concept Visual (Source: Client)

SUSTAINABILITY VISION

CREATING A MODEL FOR SUSTAINABLE DEVELOPMENT

The proposed project looks to renovate and further develop the recreational provision of the existing 18 golf course at Lethamhill represents an opportunity to present a new value packed model for golf, the environment and communities. It is a chance to show how great golf, wider social value and an ecologically rich landscape can combine to:

- underpin the profitability and financial sustainability of the operations for the long term.
- deliver tangible environmental and ecosystem services benefits to communities.
- provide even greater health and wellbeing benefits to local people.
- stimulate new social enterprise multipliers, which go on to extend the positive impact even further out into society.

At the heart of the proposed project lies a desire to maximise the all-round productivity of this area of urban greenspace.

- To generate more prosperity, jobs and income.
- To provide more access to open space recreation with the associated physical and mental health benefits.
- To create more habitats that provide more ecosystem services for people and stimulate more biodiversity for nature.

Lethamhill will aim to achieve these things whilst reducing resource consumption, emissions and pollution risks - directly and through the supply chains - by attention to detail in energy efficiency and demand; use of renewable energy sources; procurement of local, recycled and recyclable materials that in turn can help grow the green economy.

By doing this, the proposed '**Lethamhill Model**' aims to become a relevant and inspiring example for thousands of other golf courses around the world.

This model would also connect directly to the local, national and international goals, policies, targets and frameworks to which successful sustainable businesses contribute to.



Figure 3: Lethamhill Overview (Source: Client)

INTRODUCTION

The purpose of this 'Project Overview' section of the report is to provide a brief overview of the context of the proposed project with respect to the main factors potentially influencing sustainability.

It is presented in two parts, addressing first the wider context of the Glasgow and the West of Scotland region, followed by a more detailed description of the proposed project site. The site information is drawn primarily from the baseline studies undertaken by the project team.

Key scope and components of the development:

- Amendments to current existing 18-hole golf course to create:
 - A 9-hole full length golf course
 - A 9-hole par 3 course
- Full Length Driving Range (with indoor bays, and grass hitting area)
- Short game practice area – A family chipping course (named as 'The Playground')
- Public putting course
- Practice putting green
- Adventure Golf Course

Other core golf components include:

- A 'Hub' building
- A Maintenance Facility

The Sustainability Project Team includes:

- Project Owner: The R&A
- Golf Course Architect: Scott Macpherson
- Project Management: Russell Hannah, IMG
- Building Architect: Holmes Miller
- Agronomy: Richard Windows, The R&A
- Drainage Consultant: Gordon Howat
- Ecologist: Sophie Olejnik, STRI
- Irrigation Designer: Giles Wardle, Irriplan
- Woodland Management: Eamonn Wall & Company

CONTEXT

The purpose of this section of the report is to provide a brief overview of the context of the project with respect to the main factors potentially influencing the sustainability of the proposed project – Environment, Community and Economy. The site information is drawn primarily from the baseline work undertaken for the project to date, including an initial site visit, associated conversations with project stakeholders and desk-based research.

PROJECT LOCATION



Figure 4: Aerial Photo of Context (Source: Google Earth)

Socio Economic

- Lethamhill Golf Course site is located within the city of Glasgow in West Central Scotland and sits approximately 6km to the north-east of the city centre.
- There are two international airports nearby, Glasgow (less than 30km) and Edinburgh (less than 60km).
- The population of Glasgow North East is around 180,000, which accounts for approximately 30% of the overall population of 630,000 who live within the Glasgow City council area. The Greater Glasgow area has an estimated population of around 1.2 million, which contributes to around 20% of Scotland's overall population.
- At a local level, indicators such as low life expectancy, high levels of poverty and high unemployment show that North East Glasgow is considered relatively deprived in the context of Glasgow and, to a greater extent, Scotland as a whole. Crime rates within the area are also significantly higher than the Scottish average.

- Glasgow is the most densely populated city in Scotland, with 3,400 living in each square kilometre.
- At a city level, Glasgow's economy is becoming increasingly diverse and consists of growth sectors such as Education, Technological Services, Tourism and the Create and Low Carbon Economies.
- There are good transport infrastructure connections to the site, based primarily on the A80 Cumbernauld Road adjacent to the Lethamhill Golf Course site.
- There are good sustainable transport options available, including the 38 bus which connects Lethamhill Golf Course to Glasgow City centre. The site is served by the close by Robroyston rail station on the national rail network.
- Good cycling infrastructure is available locally – Type 1 (traffic free) on site and around Loch, Type 2 (may encounter some traffic) on Cumbernauld Road.
- There are good road connections to the site, including the A80 Cumbernauld Road and the M8 motorway which connects Scotland's central belt.
- There are several golf courses within the Glasgow City area. Those in closest proximity to the development are Glasgow Life owned Littlehill Golf Course, the James Braid designed Crow Wood Golf Course.
- The west of Scotland is renowned for well-regarded golf courses and is, therefore, popular with golf tourists. The development site is located within 60km of several high-profile golf courses, three of which - Royal Troon, Turnberry and Prestwick – have hosted The Open Championship. One of these remains on the rota for hosting the Championship, Royal Troon, and last did so in 2016.

Environment

- The Lethamhill development is likely located on the site of a drumlin, created through glaciological processes¹.
- The landscape surrounding the site is relatively flat, with more upland areas such as the Campsie Fells in view to the north of the site.
- The south east corner of the Loch Lomond and The Trossachs National Park is located approximately 40km to the north west of the development site
- Hogganfield Park sits directly adjacent to the Lethamhill development site. The park is known to host a number of bird species and is a base for migratory birds who are wintering in this part of the northern hemisphere. None of the winter bird species identified on site are species of conservation concern – see list below from Sophie Olejnik, STRI:

¹ Suggested through discussion with client and interpretation of research carried out on Glasgow's glaciology here: <https://www.tandfonline.com/doi/pdf/10.4113/jom.2008.1040> - relevant page 409.

- | | |
|---------------------|-----------------------------------|
| ○ Blackbird | <i>Turdus merula</i> |
| ○ Black-headed gull | <i>Chroicocephalus ridibundus</i> |
| ○ Blue tit | <i>Cyanistes caeruleus</i> |
| ○ Buzzard | <i>Buteo buteo</i> |
| ○ Carrion crow | <i>Corvus corone</i> |
| ○ Chaffinch | <i>Fringilla coelebs</i> |
| ○ Fieldfare | <i>Turdus pilaris</i> |
| ○ Goldcrest | <i>Regulus regulus</i> |
| ○ Goldfinch | <i>Carduelis carduelis</i> |
| ○ Great tit | <i>Parus major</i> |
| ○ Greenfinch | <i>Carduelis chloris</i> |
| ○ Grey heron | <i>Ardea cinerea</i> |
| ○ Herring gull | <i>Larus argentatus</i> |
| ○ Long-tailed tit | <i>Aegithalos caudatus</i> |
| ○ Magpie | <i>Pica pica</i> |
| ○ Mistle thrush | <i>Turdus viscivorus</i> |
| ○ Pied wagtail | <i>Motacilla alba</i> |
| ○ Redwing | <i>Turdus iliacus</i> |
| ○ Robin | <i>Erithacus rubecula</i> |
| ○ Rook | <i>Corvus frugilegus</i> |
| ○ Treecreeper | <i>Certhia familiaris</i> |
| ○ Wood pigeon | <i>Columba palumbus</i> |
| ○ Wren | <i>Troglodytes troglodytes</i> |
- Glasgow has a warm and temperate climate, with its weather patterns often influenced by the Atlantic Ocean.
 - Glasgow experiences a significant amount of rainfall during the year, recording an average of around 1200mm per year.
 - July is the warmest month with an average high of 18.5 degrees Celsius. January is the coldest month, with an average maximum temperature of around 6 degrees Celsius.
 - There are around 1200 sunshine hours during the year in Glasgow, with the highest monthly total occurring in June.

Cultural

- The Lethamhill development site is located in an area of Glasgow which has agricultural, coal mining and weaving mill heritage.
- Hogganfield Loch, which is adjacent to the development site, is known for having played an important role in Glasgow's industrial development, including through the provision of water for nearby mills and the harvesting and sale of ice.

- The gated entrance along the South West edge of the site backing onto the B76 is thought to be originally one of the entrances to the Lethamhill Estate and house. Little information exists on the house but it was on maps from as far back as 1850s and appeared to have a fairly large ornate garden. The surrounding land had a quarry in later years that served the Gartcraig brickworks² and stretches from the entrance round to Hogganfield loch.
- Hogganfield Loch is in the early stages of the Molendinar Burn, a freshwater flow said to have played a central role in Glasgow's development as a city. The burn was covered up in the late 19th century, although still exists today in a tunnel network under the city. The burn flows into the River Clyde through the north west corner of Glasgow Green.
- The Blackhill housing development sits less than 1km from the South West corner of the Lethamhill Golf Course boundary. An 18-hole golf course layout existed here prior to the land use change, which hosted the Glasgow Golf Club before their inner-city relocation to Killermont in the early 20th century. Glasgow Golf Club also played at Alexandra Park in the late 19th century, which has existed as a Glasgow Life 9-hole property into the present day.



Figure 5: Local Flood Estimation Map of Lethamhill and surrounds (Source: UK Centre for Ecology and Hydrology)

² <https://www.scottishbrickhistory.co.uk/gartcraig-fire-clay-co-millerston-glasgow-history/>

SITE DESCRIPTION

The Lethamhill Golf Course site is in close proximity to the central business district of the City of Glasgow, with the distance around 6km. The site is located on the property of Glasgow City Council and is directly connected to Hogganfield Park, which is earmarked as one of four 'gateways' to Glasgow's Seven Lochs wetland parks. The land is currently used for golfing purposes and is entirely within the Council's property under the management of the charitable organisation Glasgow Life, which has over 65,000 sports users across the city's sports facilities.

The overall proposals as part of the masterplan affect the land in that is currently occupied by the 18-hole Lethamhill golf course and a single storey 1970's clubhouse building. The overall area takes in the existing golf course, its associated woodland, and other recreational land on the shores of the Local Nature Reserve of Hogganfield Park and Loch.



Figure 6: Illustrative Site Area (Source: Google Earth)

Environment

- Hogganfield Park is known as an important site for migratory and wintering birds
- The neighbouring Hogganfield Park is also a Site of Importance for Nature Conservation (SINC) and a Site of Special Landscape Importance, part of which also extends into the Eastern portion of the golf course property.
- The site itself also contains a Site of Importance for Nature Conservation (LSINC028 – Lethamhill Golf Course (part)) noted for the population of Scottish water voles. Initial findings have shown a likelihood of Scottish water vole, badger and bat activity on site. See Ecology Report for details.

Topography and Drainage

- The views on the site vary from enclosed to very open depending on location and elevation.
- The vista is primarily urban, particularly in a south west direction towards Glasgow city centre, with some less typical rural features visible immediately to the north and east of the golf course site, towards Hogganfield Loch.
- The undulating nature of the site presents some challenges in terms of drainage and the potential ground shaping required as part of future proposals.
- The Campsie Fells can be seen from some of the higher vantage points on the current site.
- Visual integration with the surrounding landscape is not perceived to be a significant issue for the project at this stage, however the site does have natural view corridors into and out from the site
- The soils on site may pose some drainage challenges, particularly as a result of the existence of a clay layer and lack of maintenance along some of the existing main waterways – resulting in the silting up and the resultant slowing of flow rates.
- Options for mixing and import of materials for turfgrass cultivation purposes should be considered by the project team.
- The climate and availability of water are not an immediate cause of concern.

Vegetation

- The site area is predominately mown managed amenity grassland with both sparse and dense areas of diverse woodland, wetland, scrub vegetation and grassland currently in ‘out of play’ areas.
- The areas of amenity grassland offer low ecological value; however, the patches of scrub vegetation and woodland are of good ecological value to the site, especially the larger areas where wetlands are evident, such as to the left of the existing 5th hole.
- There is some evidence of Ash (*Fraxinus excelsior*) dieback³ in parts of the site.
- Existing species of trees and shrub on site as noted by Sophie Olejnik, STRI:
 - Alder *Alnus glutinosa*
 - Ash *Fraxinus excelsior*
 - Beech *Fagus sylvatica*
 - Blackthorn *Prunus spinosa*
 - Broom *Cystisus scoparius*
 - Cotoneaster sp. *Cotoneaster spp.*
 - Crack willow *Salix fragilis*
 - Cypress sp. *Cupressus spp.*
 - Dog rose *Rosa canina*
 - Dogwood *Cornus sanguinea*

³ <https://www.kew.org/read-and-watch/what-is-ash-dieback>

○ Elder	<i>Sambucus nigra</i>
○ European larch	<i>Larix decidua</i>
○ Field maple	<i>Acer campestre</i>
○ Hawthorn	<i>Crataegous monogyna</i>
○ Hazel	<i>Corylus avellana</i>
○ Holly	<i>Ilex aquifolium</i>
○ Hornbeam	<i>Carpinus betulus</i>
○ Ivy	<i>Hedera helix</i>
○ Laurel	<i>Prunus laurocerasus</i>
○ Lime	<i>Tilia spp.</i>
○ Lodgepole pine	<i>Pinus contorta</i>
○ Norway maple	<i>Acer platanoides</i>
○ Norway spruce	<i>Picea abies</i>
○ Oak	<i>Quercus robur agg.</i>
○ Poplar sp.	<i>Populus spp.</i>
○ Rhododendron	<i>Rhododendron ponticum</i>
○ Scot's pine	<i>Pinus sylvestris</i>
○ Silver birch	<i>Betula pendula</i>
○ Sycamore	<i>Acer pseudoplatanus</i>
○ Viburnum sp.	<i>Viburnum spp.</i>
○ Whitebeam	<i>Sorbus aria</i>
○ Wild cherry	<i>Prunus avium</i>
○ Wild privet	<i>Ligustrum vulgare</i>
○ Willow sp.	<i>Salix spp.</i>





Figure 7: General photos of site habitat and wetland areas (Source: GEO)



PROJECT DESCRIPTION

The proposed development, Project Green, comprises a new golf centre and an updated golf offering to include a range of family friendly activities and facilities to broaden the appeal of the site. The golf offering includes amendments to current existing 18-hole golf course to create a 9-hole full length golf course and a 9-hole par 3 course; a short game practice area; a practice green and putting course; public access putting course; an adventure golf area and a full-length driving range. There are plans for a central 'Community Hub' building which will contain education space and interpretation rooms, operated in partnership with 7 Lochs. Plans also include a Maintenance Facility, as well as extensive ground for habitat creation, a village green, walkway and new car parking areas.

A key component of the proposed project focusses on opening up the site to multiple users through an extensive network of pathways as part of 'The 3 W's of Lethamhill' concept. This concept incorporates environmental education and park type experiences safely alongside the golf components

The three proposed curated trails allow multiple users – either education or hobbyists – to experience the different key landscape characters and habitats of Lethamhill – the wetlands, woodlands, wildflower areas. Along the trails will be a set of 'learning labs' to host talks, outdoor lessons and community gatherings in open green space. All trail loops would connect back to The Hub building and allow the indoor learning spaces be connected directly to the outdoor space – a highly beneficial feature that potentially 7 Lochs will be able to utilise to improve their offering.

As part of the proposed environmental enhancement across the site a woodland management plan is due to be carried out from February 2021. At present, either thinning or felling is proposed to take place on approximately 4.8Ha of the existing property, with around 1.6Ha of new planting to take place. This proposed design work is anticipated to improve the overall health and biodiversity long-term for the woodland areas on the site.



3. ROADMAP

SUMMARY

The Lethamhill development team are addressing a wide range of social and environmental issues throughout the planning, design and construction of the re-imagined facility. The roadmap below outlines the proposed '**Lethamhill Model**' and the actions that are being undertaken to ensure that nature conservation; resource efficiency; social value and climate action are all fully integrated into the project.

NARRATIVE ROADMAP

The proposed renovation and redevelopment of the Lethamhill golf course into a public accessible golf facility for the 21st Century would be a significant step forward for the perception and expectations of modern public golf. Combining 'community park' type activities comfortably alongside best-in-class golf holes and golf facilities, the new Lethamhill facility aims to re-imagine public golf as we know it. This transformation is based on short formats of golf, increased family and community orientation, as well as maximising accessibility for the public.

Situated in the urban setting of wider Glasgow, with direct connections to the city centre and central belt of Scotland, the site couldn't be better situated to attract the next generation of golfers, serve its local community with accessible green space, and protect and preserve that open space in a growing and vibrant, dense urban setting.

As part of the proposals there are key contributions towards a more sustainable form of golf development across issues of nature rehabilitation and preservation, resource efficiencies and community connections.



NATURE

The site is an existing golf course with mature woodlands, areas of wetland and open water. It represents an opportunity to increase biodiversity levels across the site with more nature-based solutions to solve drainage issues, reduction in overall highly maintained amenity grass areas, improve woodland health and management and increase habitat creation opportunity with a 're-naturing' of significant new areas of the site.



Figure 8: Example of some of the wetland areas and drainage ditches currently on site. (Source: GEO)

A careful and considered tree management and conservation management approach has been developed during design stage with careful removal of unwanted or poor condition specimens and a robust re-planting strategy to the tree areas of the site. Adding to that a wildflower area are proposed to be introduced in place of mown amenity grass areas and open ditches proposed to deal with areas requiring high drainage capacity – while providing good water vole habitats.

The nature goals will be delivered by:

- Increasing overall net biodiversity levels.
- New areas of wildflower meadows.
- Extended use of grassland swales and drainage ditches.
- New native tree species planted.
- Enhancement and conservation of open water areas and habitats.



RESOURCES

The site selection of regenerating an existing facility brings with it significant potential resource savings typically used in the creation of new holes and parking provision. The proposed golf plan utilises a number of the existing hole corridors and likely minimises earthworks and impact on tree plantings wherever possible.

Long-term there are clear ambitions to propose a take a pro-active approach to waste management and recycling of waste generated. Waste initiatives are proposed to become fully integrated in a future zero-waste-to-landfill target and wherever possible local suppliers and supply chain partnerships should be established to ensure support for the local economy and that a robust future-proofed supply chain is in place for the next 50 years.

The resource goals will be delivered by:

- Seeking a renewable supply of energy.
- Adopt a robust waste management policy for The Hub building.
- Move minimal amounts of earth to form the golf holes.
- Recycle green waste generated on site.
- Aim to use permeable surfaces across the golfing grounds and trails system.
- Strive for a net carbon neutral facility by 2030 with a robust carbon management plan and policy in place.



COMMUNITY

Extensive efforts have been made to ensure stakeholder and community consultation, including building a partnership with the neighbouring 7-Lochs group and engagement with the wetland parks network, the Glasgow Life membership and community groups based around Glasgow. Educational programmes for delivery at Lethamhill are being developed in collaboration with The Golf Foundation and Scottish Golf and are intended for schools and other educational groups to experience both the golf facility offering and Hogganfield Loch. A central focus of the proposed facility will be to protect and enhance the public and accessible nature of the golf course.

Environmental education is also a focus area, with 7 Lochs helping to ensure alignment with the needs of local educational groups and schools to maximise people's experience of both the golf activities and wetland park at Hogganfield loch. Proposed business planning and projection are being developed based on an alignment with affordable greens fees and an ambition to make the golf offering available for as many people as possible – helping people gain access to golf as part of a 'pathway into golf' for families.



Figure 9: Concept visual - Café and practice range area (Source: Client)

There is ongoing work to look at feasibility of securing local business partnerships for service and material providers, locally based contractors will be preferred, and the intention is to implement a local staff policy and training policy to encourage upskilling and high-quality staff environment.



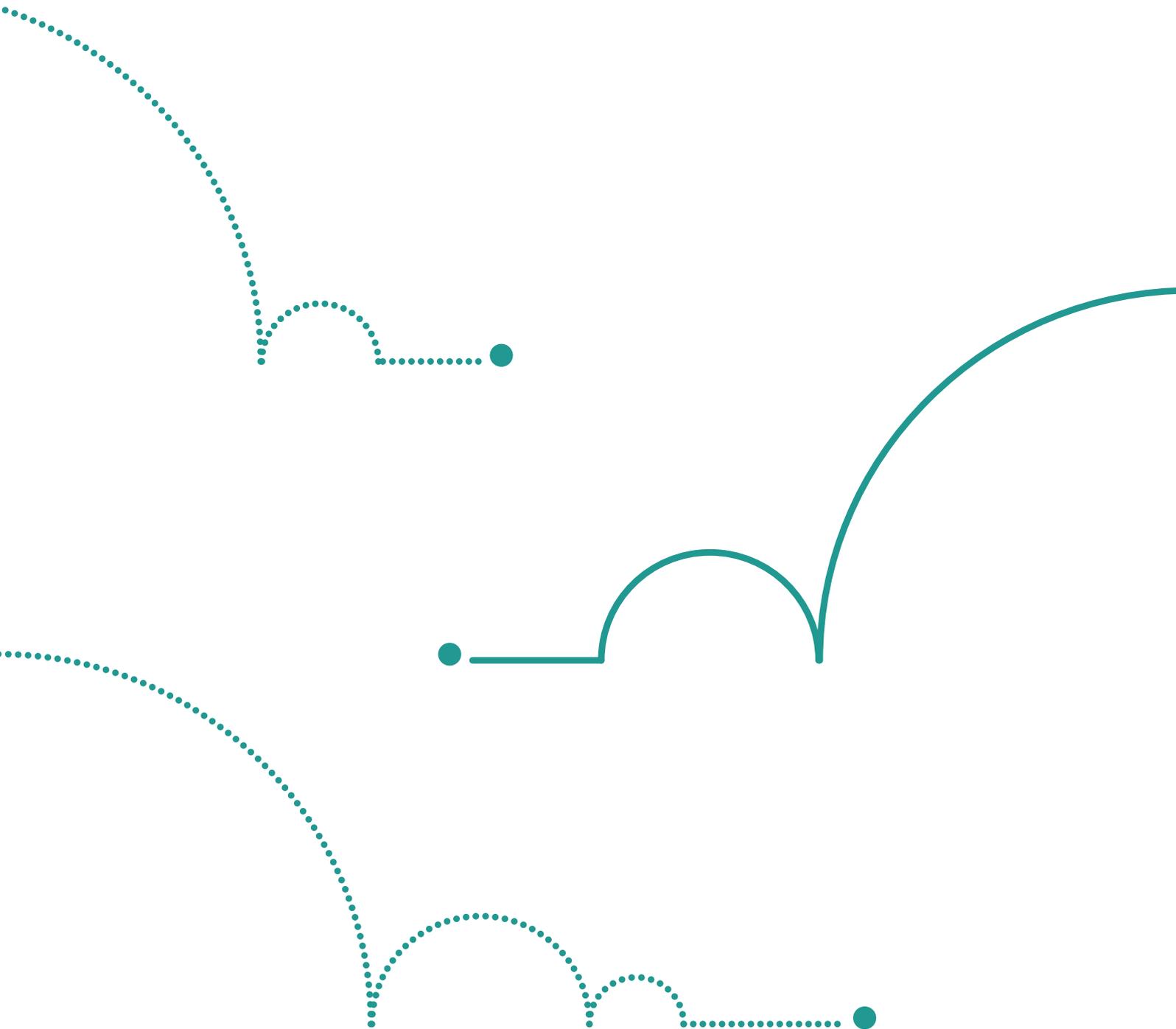
Figure 16: Concept visual – 7-loch area within The Hub building (Source: Client)

The Hub building is proposed to act as a community hub, fully publicly accessible, and to serve as an office environment and education centre for the 7-lochs group as part of the Heritage Lottery Fund application. The intention is to connect The Hub's functions to outdoor learning, activity, golf, running and other passive recreation activities will ensure a vibrant and well used community facility year-round.

The community goals will be delivered by:

- Creation of accessible trails around the property and connected to Hogganfield park.
- Establish indoor learning space and outdoor learning labs for all.
- Establish working partnerships with local community groups, volunteer schemes and charities to further breakdown any perceived barriers to accessing the property.
- Commitment to a long-term 'Community Outreach and Action' policy to continually innovate around ways in which to deliver community involvement with Lethamhill such as 'Park Runs', Nature surveys, tree planting days, guided walks, educational tours.

TABULAR ROADMAP



THEME	TARGET CODE	PROJECT TARGETS
NATURE	N1	Increase the overall area of native woodland on site
	N2	Improve and regenerate the native broadleaved woodland habitats on the site.
	N3	Adopt a tree re-stocking policy to balance tree areas proposed to be removed with tree areas proposed to be created.
	N4	Create new open ditches as part of a nature-based solution in the surface water drainage network.
	N5	Improve and regenerate open water and marginal wetland habitats on the site.
	N6	Create new open water ponds, ditches and marginal wetland habitats on the site.
	N7	Aim to increase the overall net habitat / biodiversity levels across the property working towards 30% increase from 2020 levels by 2030.
	N8	Conversion of amenity grassland into improved ecological territory such as rough grassland, wildflower type, woodland or wetland marginal.
	N9	Create of wetland wildflower meadows.
	N10	Utilize existing golf corridors where possible to minimize overall earthwork demand and to retain existing landscape character of the site.
	N11	Increase populations of water vole (<i>Arvicola terrestris</i>) through increase in suitable habitat and forage grounds across the property ⁴ .
	N12	Encourage pollinator species e.g. bees, butterflies to be attracted by using orchard planting and pollinator preferred plant species in the plant and seed mixes where appropriate.
	N13	Target priority species listed by local biodiversity action plan and develop habitat management regimes to encourage their colonization of the site and increase in populations in collaboration with RSPB.

⁴ To be done inline with Glasgow City Council's Local Species Action Plan

THEME	TARGET CODE	PROJECT TARGETS
	N14	Establish a long-term robust monitoring plan of the flora and fauna species found on site – targeting a year-on-year increase in populations and relative health of the habitats.
	N15	Establish a long term monitoring plan for the water environment with regular checks of water quality indicators in all open water bodies and at outfalls from the site.
	N16	Target and track the delivery of the ecosystem services related to Air Quality, Biodiversity, Carbon sequestration, recreation, education, national heritage, health and well being and climate event mitigation.
	N17	Include the creation of new and enhanced native and biodiverse hedgerow planting.
	N18	A comprehensive ecological habitat management plan to monitor out of play area and control any spread of invasive species.
	N19	State-of-the-Art maintenance facility with international best practice pollution control measures.
	N20	New plant species to be native and locally sourced where available.
RESOURCES	R1	Implement a nature-based solution to main site drainage proposals such as open water ditches, swales, raingardens, open water retention and detention areas, wetland and marginal habitats.
	R2	Ensure no overall increase in green field run off rates from the site and no increase in flood risk as a result of drainage proposals.
	R3	Integrate micro scale re-capture and re-use of rainwater at the maintenance facility for wash down of maintenance equipment purposes.
	R4	Incorporate a grey water recycling system with the building designs
	R5	Materials needed for the golf course to be sourced from local suppliers wherever possible.
	R6	Best-in-class irrigation system proposed for tees and greens.

THEME	TARGET CODE	PROJECT TARGETS
	R6	Use renewable energy sources and/or green tariffs by 2025 for energy usage.
	R7	Implement a carbon management policy with a circle target to aim for net zero carbon operations by 2030.
	R8	Improve water management of discharge rates off site to help mitigate any flood risk present and ensure no increase in discharge rates.
	R9	Propose permeable surfaces across the golfing grounds and waling trail system.
	R10	Explore the use of hybrid or electric maintenance machinery with Maintenance Facility future proofed to support future charging requirements – delivering a reduction in carbon emissions compared to typical comparable golf facility.
	R11	Commitment to long term sustainable operations of the golf course with minimal fertilizer, pesticide and herbicide applications – all recorded online through use of OnCourse® ⁵ sustainable management web application.
	R12	Make provision for electric charging points for EV's and include cycle parking.
	R13	Green complex designs promote ease of access for maintenance staff and vehicles with multiple walk on/off areas.
	R14	Integrate solar panel provisions into the Maintenance Facility designs.
	R15	Minimise the used of plastic pipe in the drainage design and utilise surface contours with nature based solutions approaches - soakaways, swales and low areas away from playing surface to handle surface water.
	R16	Establish an onsite micro turf nursery to improve future resilience to supply chain and allow on-site training, learning and testing of equipment, staff and turf species.
	R17	Establish an onsite 'green waste' composting facility to process landscape waste generated through typical maintenance practices.

⁵ <https://getoncourse.golf/>

THEME	TARGET CODE	PROJECT TARGETS
	R18	Use of technology in The Hub building to improve ICT access and experience for visitors and as part of the learning and meeting facilities provided within The Hub.
COMMUNITES	C1	Create accessible walking and/or running trails safely routed alongside the golf course layout and create direct connection to Hogganfield Park.
	C2	Aim to establish strong local supply chain network for future operational supplies of The Hub using local suppliers where possible.
	C3	Create outdoor learning labs safely located within the out of play areas for use by local education and community groups along with 7 Lochs to inspire human-nature relationships.
	C4	Build partnerships with local education groups and schools aimed at raising awareness of environmental and sustainability issues relevant to the local area and at a global level – which are being addressed at the property.
	C5	Facilitate the future hosting of community events both within and connected to Lethamhill such as park runs, bird watching events with RSPB, geo-caching, sports day events.
	C6	Create working partnerships through 7 Lochs to engage volunteer group and educational / social well-being activities connected to environmental enhancements or habitat creation activities at Lethamhill.
	C7	Create budget for the role of a ‘community engagement’ to be delivered by one or more future staff members at Lethamhill.
	C8	Provide designated and flexible meeting room and offices for 7 Lochs group and for use as a meeting room for other community groups and educational users.
	C9	Create a diverse golf offering to accommodate all levels, ages and abilities of player and encourage an atmosphere of total inclusion at the facility.
	C10	Provide and promote golf and non-golf activities that will be provided for at the property to ensure a broad and diverse visitor demographic.
C11	Implement an internship program to encourage young and local people to learn new job and life skills at the facility either in operation and services or with grounds and maintenance sectors.	

THEME	TARGET CODE	PROJECT TARGETS
	C12	Explore potential to process green waste into a compost available for use in community allotments, gardens or other city parks as needed.
	C13	Explore the potential to establish a bee apiary safely on site as part of ground staff's responsibilities to encourage pollinators species and provide pollination of orchard and honey crop products for The Hub.
	C14	Act as a showcase facility for the industry through planned open day events and learning activities with peers in greenkeeping and golf operations to share knowledge and best practice guidance.
	C15	Ensure fully accessible provisions are in place for all at The Hub building and an accessible route for all disabled users to safely use and benefit from the facility's external environments.
	C16	Proactively create working partnership with local or city wide groups to consult on their needs to help the delivery of social and mental health support activities in a safe open green space.

4. EXTERNAL SUSTAINABLE DEVELOPMENT INDICATORS

As part of internal aspirations within the project team, the client proposes to look at ways in which to report its eventual achievements against global sustainable development goals and delivery of relevant ecosystem services from the proposed project's activities and green infrastructure. Although in the early stage of adoption, the following pages begin to look at a prototype methodology for this long-term performance reporting.

GLOBAL SUSTAINABLE DEVELOPMENT GOALS

There are a number of ways in which Project Green is contributing to the achievement of the Global Sustainable Development Goals (SDG). Early project planning has helped to identify the delivery areas, which will form the basis of this external reporting using the project's sustainability targets. Set out below is the identified Global Goals with their associated targets⁶, and how Project Green's targets will contribute.



The identified SDG targets

- 11.4 Safeguard cultural and natural heritage*
- 11.6 Reduce the adverse per capita environmental impact of cities, including air quality and municipal and other water management*
- 11.7 Provide universal access to safe, inclusive and accessible green spaces for all demographics*
- 11.a Support positive economic, social and environmental links between urban, peri-urban and rural areas*

Sustainable Cities and Communities Goals for Project Green

- 11A** Adding additional value and supporting the continued use of Hogganfield Park for recreational purposes.
- 11B** Adopting sustainable supply chain practices, including circular economy principles.
- 11C** Implementing a sustainable woodland management plan
- 11D** Provision of facilities for low carbon and active transportation alternatives
- 11E** Encourage an atmosphere of total inclusion at the facility.

Project Green's relevant sustainability targets

- C1** Create accessible walking and/or running trails safely routed alongside the golf course layout and create direct connection to Hogganfield Park.
- R15** Make provision for electric charging points for EV's and include cycle parking provisions.
- N2** Improve and regenerate native broadleaved woodland habitats on the site.
- C10** Provide and promote golf and non-golf activities that will be provided for at the property to ensure a broad and diverse visitor demographic.

⁶ The Sustainable Development Goals and subsequent targets are adapted from the online publication - <https://sdgs.un.org/goals> (accessed Jan 2021)

[further pages to be developed on SDG reporting]

EUROPEAN ECOSYSTEM SERVICES

The European Environment Agency's (EEA) Common International Classification of Ecosystem Services (ES) provides ecosystem service definitions for two main categories defined below (*cultural and regulatory*). Project Green intends to provide several ecosystem services to all users the facilities and the local community. The Ecosystem Services Matrix below details the approach to delivery.



Definitions of Ecosystem Services:

Cultural Ecosystem Service

The non-material benefits people obtain from ecosystems, including environmental education and health and well-being

Regulatory Ecosystem Service

The benefits obtained from the regulation of ecosystem processes, including pollination and regulation of water and soil quality

Ecosystem Services Matrix

Based on Common International Classification of Ecosystem Services V5.1 – March 2018⁷. The services are tracked and noted using the sub-header nomenclature: *ES Section – Code – Simple Descriptor*

Cultural – 3.1.2.2 – Studying Nature

Relevant Strategic ES Goals for Project Green

- Deliver education in and about the natural environments of Lethamhill.
- Provide accessible facilities for use by local groups and schools to further knowledge.
- Strengthen pro-environmental attitudes through communication to the multiple user of the golf facility about protected species or habitats and conservation for future generations.
- Link to voluntary groups for planting and conservation activities.

Project Green's relevant sustainability targets

- C3** Create 5 outdoor learning labs safely located within the out of play areas for use by local education and community groups along with 7 Lochs to inspire human-nature relationships.
- C4** Build partnerships with local education groups and schools aimed at raising awareness of environmental and sustainability issues relevant to the local area and at a global level – which are being addressed at the property.
- C6** Create working partnerships through 7 Lochs to engage volunteer group and educational / social well-being activities connected to environmental enhancements or habitat creation activities at Lethamhill.

⁷ Haines-Young, R. and M.B. Potschin (2018): Common International Classification of Ecosystem Services (CICES) V5.1

[further pages to be developed on ES reporting]

5. VERIFIER INTERIM REVIEW – TO BE CONFIRMED

At this stage of the proposal developments, I am very pleased to have reviewed the Sustainability Blueprint V1 above in conjunction with the project's supporting information. The proposals presented demonstrate a clear intention to deliver a sustainable golf development in line with the international Voluntary Sustainability Standards for golf development⁸ as adopted for the GEO Certified[®] Development certification. Particular points of note include:

- A strong desire to increase overall biodiversity levels and nature-based solutions for the site and support that with a long term-environmental management policy to be developed.
- The securing of continuation of a public golf and green space recreation provisions in this part of the city for future generations.
- The inclusive nature of the proposed facility – with community connections to education and environmental awareness using the built and natural assets of the proposed project.
- Resourceful approach to masterplan development – utilising existing infrastructures, golf areas and the existing landscape framework of the site to minimise resource requirements and limits site disturbance.

I look forward to seeing hopefully seeing the next stages of the project's design development and that it can progress onto construction and deliver on the high level of quality and ambition shown in the project proposals to date.

Matt Johns

Independent Verifier for Project Green

⁸ https://sustainable.golf/assets/0005/9770/Dev-VSS_web_V1.pdf

LIMITATIONS

The content of the Sustainability Blueprint is drawn from information contained within existing project documentation and surveys carried out by consultants hired by Project Green. It reflects information correct at the time of writing, it is possible that new information will become available after the completion of this report. This new information would be incorporated into future revisions of this report or in the subsequent stages of the certification reporting.



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