Green Infrastructure Statement

Extension
83 Neath Road, SA8 3EH

Client(s)	Mr. + Mrs. Kerrigan
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Architecture

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01|INTRODUCTION

This Green Infrastructure statement (GIS) accompanies the planning application for a single-storey rear extension at 83 Neath Road; a thoughtful addition that embraces sustainable living while respecting the existing home. The dwelling in Rhos, will embed green infrastructure within its proposals. The document will detail how existing and proposed features will deliver a range of benefits, including enhanced biodiversity, increased amenity for future occupants, and a positive contribution to the surrounding landscape character.

Site Drawing; Application Document

This extension isn't simply about space; it's about responsible growth. It acknowledges the deep connection between human well-being and environmental health. GI principles aren't mere add-ons; they're the very foundation upon which the extension rests. The design strikes a harmonious balance: expanding living space while minimising environmental impact. The extension seamlessly blends in but aspires to be more – an active contributor to the local ecosystem. This statement details the meticulous measures woven into the design, measures that tell a story of sustainability.

Image; Siting of Proposed Extension

Beyond fulfilling immediate needs, the extension fosters a deeper connection with nature. It envisions a haven for the homeowners and wildlife alike, where built and natural environments blur, fostering a sense of shared existence. This = statement is the roadmap for achieving this vision, detailing the design choices that prioritise ecological health and environmental responsibility. This isn't just an extension; it's a blueprint for a sustainable future at a domestic scale. It showcases how thoughtful design and a commitment to GI principles can pave the way for progress that doesn't come at the expense of the natural world, but rather, thrives alongside it. This statement stands as a beacon of hope, demonstrating that environmental well-being and human comfort can co-exist in harmony.

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02|LEGISLATIVE CONTEXT

The integration of Green Infrastructure statement (GIS) into planning and development has become a cornerstone of sustainable, resilient, and healthy communities in Wales. Underpinning this approach is a robust framework of legislation and policy, guiding the creation of Green Infrastructure Statements (GIS) that ensure effective planning and delivery of GI benefits. This document delves into the key elements of this framework, drawing upon Planning Policy Wales (PPW), Natural Resources Wales (NRW), and The Environment (Wales) Act 2016.

PPW is the basis spatial planning in Wales; significant emphasis on GI has been placed here. Policy PPW10 specifically addresses GI, advocating for its proactive and integrated approach into planning decisions. This policy requires planning authorities to:

- Identify, protect, and enhance: Existing GI networks and assets, including parks, woodlands, rivers, and green corridors.
- Provide and deliver: New GI provision proportionate to the scale and impacts of development.
- Deliver measurable: Net environmental gains through GI interventions.
- Prepare and consider: GIS alongside planning applications, particularly for developments with significant impacts.

PPW further strengthens GI's role through policies like PPW7 (sustainable development), PPW9 (sustainable transport), and PPW11 (natural resources and waste). These policies emphasize GI's contribution to biodiversity protection, climate change mitigation and adaptation, flood risk management, and public health and well-being.

NRW plays a crucial role in supporting and guiding GI implementation. Their "Building with Nature" framework provides practical guidance for incorporating GI into development projects. Additionally, NRW's Green Infrastructure Assessment (GIA) methodology offers a valuable tool for developers and planning authorities to assess the existing GI provision, potential impacts of development, and opportunities for GI enhancement. NRW also contributes to GI policy through its Area Statements, which set out regional priorities for environmental management and identify key GI corridors and opportunities. Furthermore, NRW's role in managing and protecting designated landscapes and habitats adds another layer to the GI framework, ensuring consistency and coherence with wider environmental objectives.

The Environment (Wales) Act 2016 is landmark legislation introduces a set of principles and duties that further elevate the importance of GI. The "Sustainable Management of Natural Resources" principle requires public authorities to take actions that contribute to the improvement of the state of the environment, with GI serving as a key tool for achieving this. Furthermore, the Act's duty on public bodies to "promote biodiversity" places additional emphasis on GI's role in enhancing and protecting habitats and species. These principles and duties, alongside the Act's focus on long-term planning and ecosystem resilience, provide a robust legal framework for embedding GI into all aspects of decision-making.

The combined force of PPW, NRW's guidance and tools, and The Environment (Wales) Act 2016 creates a comprehensive and dynamic framework for GI in Wales. Green Infrastructure Statements, informed by this framework, play a crucial role in ensuring that GI is effectively planned, delivered, and monitored, contributing to the creation of vibrant, healthy, and resilient communities for future generations.

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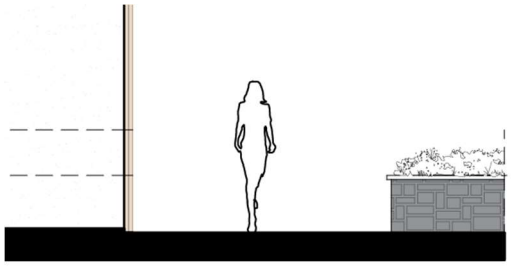
03|GREEN INFRASTRUCTURE DESIGN

Green infrastructure design in architecture is a sustainable approach that enhances buildings and their surroundings through the incorporation of natural elements. This can lead to numerous benefits, including improved energy efficiency, reduced stormwater runoff, and enhanced occupant well-being. The project will delve into the aspects of GIS and biodiversity enhancement and as such, demonstrate how the philosophy of a greener, sustainable future has been at the core of the design.

03.1 // Green Planting

Background:

Traditionally, gardens can be paved with impermeable surfaces throughout to minimise maintenance. This increases surface water runoff and lacks the ingredients for enhancing biodiversity.



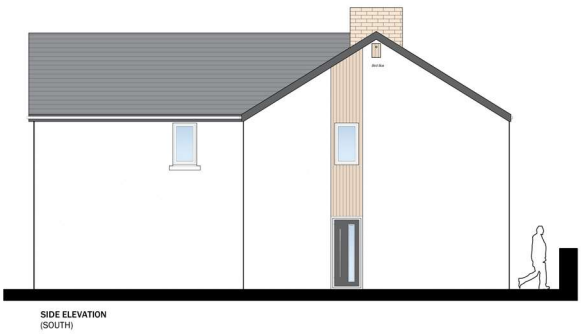
Rear Elevation; Application Document

Justification

Integrating green planting and wildflowers is vital for sustainable development, offering significant ecological, social, and economic benefits. Ecologically, they enhance biodiversity by providing habitats and food for pollinators, improving soil health and water management, sequester carbon, and mitigate urban heat. Economically, they can increase property values and reduce energy and stormwater management costs. Investing in green planting and wildflowers creates more resilient, attractive, and beneficial environments for both nature and people.

03.2 // Bird Box

Background: Birds are vital indicators of environmental health and contribute to pollination and pest control. Green infrastructure, including diverse planting and trees, provides essential habitat and food sources for a thriving bird population..



Proposed Elevation Drawing; Application Document

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Justification: The bird box will provide refuge from predators and adverse weather conditions, crucial factors for successful nesting. Depending on the design and entrance hole size, it can attract a variety of common garden bird species, such as blue tits, great tits, or house sparrows, contributing to the overall avian diversity of the area. Monitoring the bird box can also offer valuable insights into local bird activity and breeding success, fostering a greater appreciation for wildlife among future occupants and potentially contributing to local ecological initiatives.

03.3 // Solar Gains

Background: Solar gain, the increase in internal building temperature due to solar radiation, is a key factor in energy efficiency. Understanding and mitigating excessive solar gain through design and landscaping is crucial for reducing cooling demands, improving occupant comfort, and minimising the environmental impact of the proposals.

Elevation Drawing; Application Document

Justification: Strategic consideration of solar gain in the design is paramount for achieving a thermally comfortable and energy-efficient building. Unmanaged solar gain, particularly through south and west-facing glazing during warmer months, can lead to overheating, necessitating increased reliance on energy-intensive cooling systems. This not only elevates operational costs for future occupants but also contributes to a higher carbon footprint. Conversely, harnessing beneficial solar gain during colder periods can passively contribute to heating, reducing the demand on traditional heating systems and lowering energy consumption. The proposed development will therefore incorporate design strategies to optimise solar gain. This may include careful orientation of the building, appropriate window-to-wall ratios, the specification of high-performance glazing with suitable solar heat gain coefficients, and the potential incorporation of external shading devices such as overhangs or strategically placed vegetation.

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04|BENEFIT ANALYSIS

The proposed Green Infrastructure (GIS) measures for the extension at 83 Neath Road will offer a multitude of advantages for both the project and the surrounding community. These features will demonstrably contribute to a healthier environment and a more vibrant local area.

Effective Stormwater Management:
The green areas and wildflower planting will work together to efficiently manage rainwater. By reducing surface runoff and allowing for infiltration, they will alleviate pressure on drainage infrastructure and mitigate flood risks. This not only protects the immediate property but also benefits the wider community by ensuring a safer and more resilient environment. Additionally, the vegetation on the green roof will improve air quality by filtering pollutants and releasing oxygen.

Enhanced Biodiversity and Educational Value:
The bird box will provide a valuable habitat for local species, promoting biodiversity within the built environment. The strategically planted native species around the extension will further contribute to a thriving ecosystem by offering food and shelter for local wildlife. This not only enriches the natural world but also serves as an educational resource, raising awareness about the importance of native species and environmental stewardship.

Solar Gains:
By effectively managing solar heat, particularly during peak summer months, the reliance on energy-intensive cooling solutions will be substantially reduced, leading to lower electricity consumption and decreased energy costs. This also directly translates to a smaller carbon footprint, contributing to broader sustainability goals. Conversely, the intelligent design will aim to maximize beneficial solar gain during the colder winter months. This passive solar heating can significantly reduce the demand on traditional heating systems, further lowering energy bills and carbon emissions. The resulting stable and comfortable internal environment enhances occupant well-being, reducing the likelihood of overheating or excessive cooling. This holistic approach to solar gain management ensures a more energy-efficient, cost-effective, and environmentally responsible building operation throughout the year.

Lasting Benefits for All:
The positive impacts of these GI measures will extend far beyond the immediate project. Improved air quality, enhanced biodiversity, and reduced flood risks will contribute to a healthier and more liveable environment for residents and the wider community. Additionally, the focus on sustainable materials sets a positive precedent for future developments, ensuring a more sustainable future for generations to come.

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05|**CONCLUSION**

In conclusion, the proposed Green Infrastructure statement (GIS) provides a commitment to building a sustainable and environmentally responsible development. By meticulously integrating these features, the project will contribute to a healthier planet, a more vibrant local environment, and a resilient community.

From the green planting to bird boxes, the extension assists with fostering biodiversity, each measure showcases a dedication to environmental stewardship. The measures extend far beyond the immediate project. enhanced biodiversity will create a healthier and more liveable environment for residents and the wider community. Moreover, the educational value of the landscaped area and the focus on sustainable materials serve to raise awareness about environmental responsibility and inspire future generations to adopt similar practices. By demonstrating a holistic approach to environmental responsibility, it showcases how development can coexist harmoniously with nature and contribute positively to the local community. This project sets a compelling example for future developments, paving the way towards a more sustainable and resilient future for all.

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