

**Proposed Residential development Elmfield, Ninth Lock Road,
Clondalkin, Dublin 22**
Climate & Sustainability Report



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2020
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SUSTAINABILITY

A Future Built on
Sustainable Design

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1. Introduction

This Climate and Sustainability Report has been prepared to accompany the planning application for the proposed residential development at Elmfield, Ninth Lock Road, Clondalkin, Dublin 22. The purpose of this document is to demonstrate that the development has been conceived and designed in a way that fully responds to the climate, environmental and sustainability obligations set out in both the South Dublin County Development Plan 2022–2028 and the South Dublin Climate Action Plan 2024–2029, and to set out clearly how the proposal integrates the principles of sustainable development across all relevant environmental domains.

The Development Plan establishes climate action as a core planning requirement, highlighting the need for development to mitigate greenhouse gas emissions, promote energy efficiency and incorporate measures that enhance resilience to climate change. Elmfield has therefore been designed from the outset to deliver a built environment that is energy efficient, adaptable to the impacts of climate change, centred upon sustainable mobility, respectful of natural systems, and resilient in the face of future climatic pressures.

To support this Climate & Sustainability Report, the applicant has prepared and submitted the following technical documents:

- Energy & Climate Action Report
- Sustainability Report
- Building Life Cycle Report(s)
- Engineering documentation
- Architectural design and layout documentation
- Ecology report

These documents collectively provide a comprehensive, evidence-based assessment of the development's energy profile, lifecycle performance, drainage and water management, transport accessibility, and wider sustainability characteristics. This Climate and Sustainability Report draws on those documents, contextualising them within the relevant SDCC policy framework and demonstrating clear alignment with local, regional and national climate objectives.

2. Alignment with Planning and Climate Policy

2.1. Compliance with the South Dublin County Development Plan 2022–2028

The South Dublin County Development Plan 2022–2028 establishes a comprehensive framework for delivering sustainable, climate-aligned development throughout the county. The Plan identifies climate action, compact urban growth, high-quality design, biodiversity protection and sustainable mobility as cross-cutting principles that must inform all new development proposals. Elmfield has been designed directly in response to these principles, ensuring that the scheme contributes positively to energy efficiency, reduced emissions, ecological enhancement and long-term resilience.

2.1.2. Climate Action and Energy

The Development Plan places strong emphasis on transitioning to a low-carbon built environment. Policy E1 requires new development to promote energy conservation, renewable energy and increased energy efficiency in line with European, national and regional climate objectives. In direct response, all dwellings at Elmfield have been designed as A2-rated homes, incorporating a high-performance building fabric, low air-permeability values and a fully electric heating system based on air-source heat pumps.

The Development Plan also includes Policy E3, which supports high levels of energy conservation and the integration of renewable-energy technologies in new and existing buildings. The Elmfield Energy & Climate Action Report submitted with this application confirms compliance with Nearly Zero Energy Building (NZEB) requirements through enhanced insulation values, optimised thermal bridging, mechanical ventilation with heat recovery, and the potential for on-site photovoltaic (PV) generation. The development therefore meets the regulatory benchmarks for NZEB while also satisfying the broader CDP policy objective of reducing operational energy demand.

Furthermore, Policy E2 encourages the reduction of fossil-fuel dependence and the increased use of low-carbon energy systems. Elmfield aligns with this direction through its complete removal of fossil-fuel heating systems from the scheme, contributing directly to emission-reduction targets and long-term decarbonisation.

2.1.3. Sustainable Transport and Mobility

Sustainable mobility is central to the Development Plan's climate and settlement strategy. Policy SM1 promotes compact, walkable neighbourhoods supported by high-quality pedestrian, cycle and public transport networks, while SM2 seeks to increase the proportion of active-travel trips through enhanced connectivity and reduced walking and cycling distances. Elmfield responds to these policies through its permeable layout, pedestrian-priority routes, extensive provision of secure bicycle parking, and direct connections to the surrounding street network.

The Development Plan also requires new residential development to support the transition to clean mobility. Policy E4 and SM7 require the integration of EV-charging infrastructure, ensuring that new homes can accommodate shifts toward low-emission vehicles. Elmfield meets and exceeds these requirements through the provision of operational EV charging points and ducting for future expansion.

2.1.4. Green Infrastructure, Biodiversity and Nature-Based Solutions

The Development Plan recognises the importance of protecting and enhancing ecological networks and delivering nature-based climate adaptation. Policies GI1 and GI2 require development to strengthen green-infrastructure connectivity, protect existing natural features and incorporate biodiversity-friendly planting. The Elmfield landscape strategy includes native species, pollinator-friendly planting, SuDS-integrated green spaces and enhanced tree cover, consistent with GI1 and GI2.

The Plan further emphasises resilience through nature-based design. Policy GI5 supports green infrastructure as a mechanism for climate adaptation, enhancing shading, cooling, water regulation and biodiversity. Elmfield's greenway boulevard, permeable landscapes and SuDS features directly align with this approach.

2.1.5. Water Management, Drainage and Flood Resilience

The Development Plan explicitly requires that all new developments adopt sustainable urban drainage systems and demonstrate resilience to projected increases in rainfall intensity arising from climate change. Policy IE3 of the County Development Plan requires the management of surface water and the protection of groundwater quality, including the requirement for SuDS in new development. The Elmfield drainage strategy incorporates a full suite of SuDS measures consistent with IE3 and ensures that runoff rates are appropriately managed, water quality is protected and drainage infrastructure remains resilient under future climate scenarios.

The Plan also emphasises the role of climate adaptation in flood-risk management. Policy IE4 requires the incorporation of flood-risk assessment and appropriate design measures to ensure that new development responds to the risks identified in national and local flood-risk guidance. The Elmfield strategy is fully aligned with this requirement by incorporating drainage design that accounts for increased rainfall intensity and supports long-term resilience.

2.1.6. Circular Economy and Resource Efficiency

The Development Plan contains a clear commitment to promoting a circular economy. Policy IE7 requires development to minimise waste, support reuse and recycling, and implement sustainable material and resource management practices.

The Building Life Cycle Report prepared for Elmfield demonstrates that material selection, façade treatments and building systems have been designed with durability, low maintenance and long-term lifecycle performance in mind. Bin storage, recycling facilities and construction-stage waste-reduction measures align with IE7 Objectives 1, 3 and 7, which promote a transition to a circular, resource-efficient approach to development.

2.2. South Dublin Climate Action Plan 2024–2029

The South Dublin Climate Action Plan (CAP) sets out a comprehensive programme for reducing emissions, strengthening resilience and embedding sustainability into all development. The CAP describes climate action as a county-wide priority requiring integrated measures across buildings, transport, green infrastructure, flood resilience and community engagement. The CAP establishes six thematic areas against which new development is assessed. Elmfield demonstrates strong alignment with each theme.

2.2.1. Energy and Buildings

The CAP promotes high levels of energy efficiency, the electrification of heat, and the integration of renewable or low-carbon technologies. Elmfield aligns with this approach through its NZEB-compliant design, fully electric heating using air-source heat pumps, high-performance building envelope and potential for rooftop photovoltaic generation. The A-rated energy performance of Elmfield homes directly contributes to this social sustainability goal.

2.2.2. Sustainable Transport

The CAP identifies transport as a major contributor to emissions in South Dublin and emphasises the need for compact, accessible neighbourhoods that prioritise walking, cycling and public transport. Elmfield supports this direction through its permeable street layout, strong walking and cycling connections, extensive cycle parking, and integration of EV-charging infrastructure. These measures are consistent with the CAP's transport objectives and its emphasis on reducing private car dependency in the Clondalkin area.

2.2.3. Nature-Based Solutions

The CAP places strong emphasis on nature-based solutions that enhance biodiversity, support climate adaptation and improve ecological connectivity. Elmfield aligns with this theme through its integrated green infrastructure network, native planting palette, pollinator-friendly landscapes and the inclusion of climate-responsive open spaces. These measures complement the CAP's direction to increase tree coverage, enhance local ecosystems and introduce nature-based climate resilience across new development.

2.2.4. Circular Economy & Resource Management

The CAP promotes a transition toward a circular economy by encouraging materials efficiency, waste minimisation and long-life design. Elmfield incorporates these principles through durable façade materials, lifecycle-focused specification, high-quality building systems and dedicated recycling and waste-segregation facilities. These choices reduce long-term resource demand and support the CAP's objective of embedding circular-economy thinking within the construction and operational phases of development.

2.2.5. Climate Adaptation, Flood Resilience & Water Management

The CAP highlights climate adaptation as a core priority, with a particular focus on managing increased rainfall intensity, overheating risks and the resilience of drainage systems. Elmfield supports this theme through its SuDS-led drainage strategy, climate-adaptive landscape design and passive cooling measures integrated into building form and orientation. These features align with the CAP's ambition to increase resilience to extreme rainfall and warming climate conditions across South Dublin.

2.2.6. Community Engagement

The CAP recognises that climate action must also support healthy, inclusive and socially resilient communities. Elmfield provides permeable pedestrian networks, accessible open spaces, nature-based amenities and a high-quality public realm that encourages active lifestyles, social interaction and local stewardship. The inclusion of an on-site childcare facility further supports this theme by improving walkable access to essential everyday services and reducing the need for car-based trips for families. Together, these measures align with the CAP's goals of enabling healthy communities, strengthening local social infrastructure and supporting climate-aligned living.

3.0 Site Context and Development Overview

Elmfield sits within an established residential and suburban framework in Clondalkin, Dublin 22, an area identified by South Dublin County Council as a priority zone for decarbonisation due to its historic pattern of car-dependence, mixed building energy performance and elevated household emissions. The South Dublin Climate Action Plan notes that parts of the Clondalkin area present opportunities for targeted climate-action measures, including improved energy performance, enhanced active-travel conditions and reduced transport emissions.

This development responds to these opportunities by delivering a modern, energy-efficient neighbourhood within a serviced and accessible location that benefits from existing transport, social and community infrastructure.

The site is located in proximity to public transport routes, pedestrian networks and cycling corridors, enabling future residents to adopt lower-carbon travel patterns. This accessibility supports both the County Development Plan's compact-growth objectives and the CAP's ambition to prioritise active and low-emission travel modes. The combination of established amenities and proposed improvements creates the conditions to reduce reliance on private vehicles and support the transition to more sustainable movement patterns.

In doing so, Elmfield contributes to the Development Plan's strategic aim of directing new housing toward well-served urban locations and reinforcing settlement structures where sustainable transport can realistically replace car-based travel. The project therefore aligns with the Development Plan's integrated land-use and transport principles and the CAP's broader low-carbon mobility priorities.



Figure 1. Proposed Site Plan

4.0 Climate Mitigation

Climate mitigation refers to the measures taken to reduce greenhouse gas emissions arising from both the construction and occupation of new homes. South Dublin's Climate Action Plan and County Development Plan both emphasise that buildings and transport are major contributors to local emissions, and that new development should proactively incorporate energy-efficient design, low-carbon heating and sustainable mobility measures.

Elmfield responds to this requirement on multiple levels—through building design, energy systems, material selection and low-carbon transport planning.

4.1 Operational Energy Efficiency

The dwellings at Elmfield have been designed to exceed NZEB requirements, drawing heavily on the measures outlined in the Energy & Climate Action Report. That report establishes that the scheme achieves A-rated performance through a combination of fabric-first measures, high insulation values, reduced thermal bridging and advanced airtightness. The County Development Plan's energy policies (including Policy E1 and Policy E3) promote these principles by requiring energy-efficient design, renewable energy integration and long-term reductions in operational emissions.

Air Source Heat Pump technology is utilised throughout the development, providing space heating and domestic hot water using high-efficiency, electrically powered systems. This ensures the homes

operate without fossil fuels— a direction supported in both the CDP and the Climate Action Plan through their emphasis on electrification and reduced reliance on carbon-intensive heating systems.

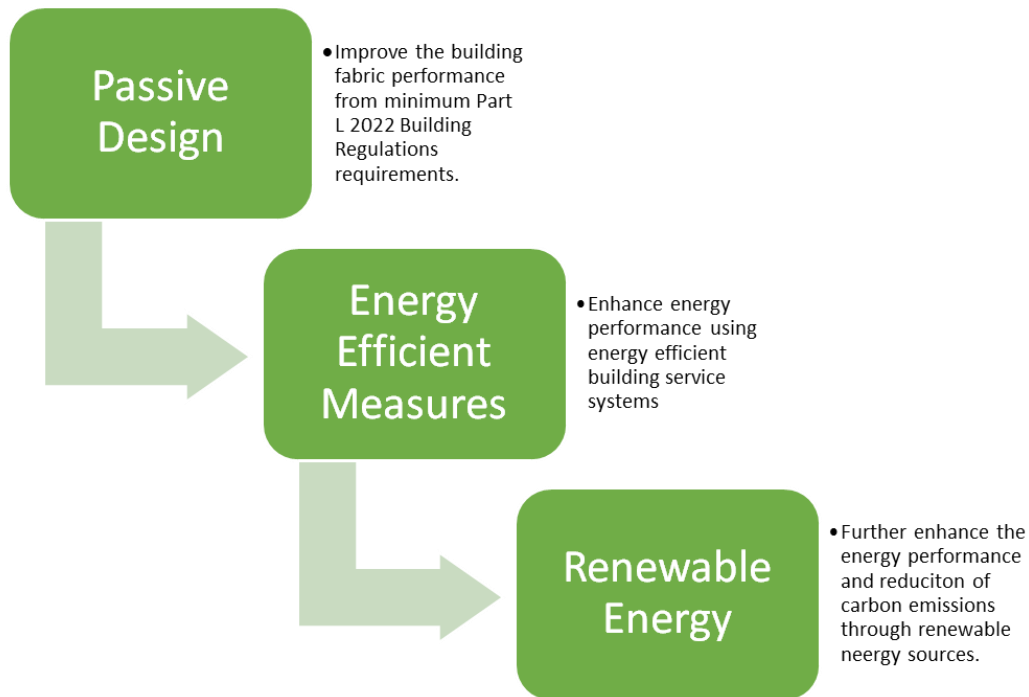
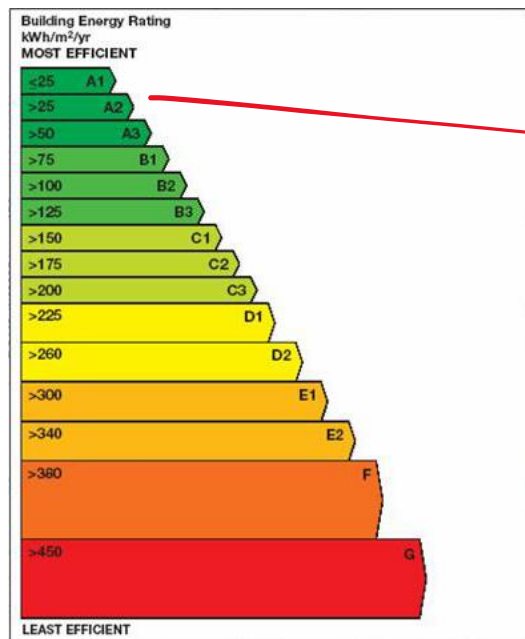


Figure 2. Energy Hierarchy Applied at Elmfield

In parallel with the passive measures, Elmfield integrates modern mechanical ventilation systems to secure both air quality and energy recovery. The final result is a home that requires less energy to heat, circulates clean air throughout, and preserves thermal comfort even under extreme climatic conditions.



The project is aiming for a A2 BER rating.

Figure 3. Target BER Performance – Elmfield

4.2 Embodied Carbon and Lifecycle Sustainability

While operational energy efficiency is essential, both the Development Plan and the Climate Action Plan stress the importance of reducing embodied carbon associated with materials and construction. The Climate Action Plan highlights that long-life, low-maintenance materials contribute significantly to lifecycle emissions reduction, and the County Development Plan supports sustainable material selection through its circular-economy policies (IE7).

The Building Life Cycle Reports submitted with this application confirm that Elmfield has been designed with longevity and durability in mind. Materials have been selected based on their performance over decades, reducing the need for replacements and minimising waste. Hard landscaping incorporates durable finishes that resist weathering and do not require intensive future remediation. Interior fit-out avoids short-lifespan materials prone to regular replacement.

Together, these measures reduce long-term resource demand and minimise both embodied and operational carbon emissions.

4.3 Urban Form and Compact Growth

The development supports South Dublin's compact growth strategy, which is a core element of climate mitigation. The Development Plan states that compact, well-located development patterns reduce emissions, improve accessibility and enhance the viability of sustainable transport. Elmfield is a clear example of this approach. The internal street network is legible and walkable, linking directly into existing pedestrian paths and public transport stops. The architecture and layout encourage shorter journeys and low-carbon mobility patterns.

By situating new homes within a serviced urban area, the scheme avoids the carbon impacts of greenfield expansion and supports the CDP's objective to deliver housing in locations where active travel and public transport can realistically replace private-car use.

This alignment with compact growth principles strengthens the development's overall contribution to climate mitigation and sustainable settlement patterns.

5.0 Climate Adaptation and Resilience

Climate adaptation refers to the ability of the development to withstand the effects of climate change including increased rainfall intensity, prolonged heat events, wind-based weathering and stress on local ecosystems. Both the South Dublin County Development Plan and the South Dublin Climate Action Plan emphasise that future development must integrate adaptation measures that address changing rainfall patterns, overheating risks and wider climatic pressures.

The design of Elmfield incorporates a comprehensive set of adaptation measures across its buildings, drainage networks, landscaping and public realm.

5.1 Overheating and Thermal Comfort

The climate projections for South Dublin show a growing risk of overheating in poorly designed new homes. To mitigate this, Elmfield incorporates generous natural ventilation, selective orientation, carefully sized window openings and shading provided by recesses and landscaping. These passive cooling measures reduce reliance on mechanical systems and ensure comfortable indoor conditions during warmer periods.

The Climate Action Plan highlights the importance of minimising cooling demand through passive means, as this reduces energy use and supports wider decarbonisation objectives. Elmfield aligns directly with this guidance.

5.2 Flood Resilience and Surface Water Management

Flooding represents a material climate risk at a county level. Policy IE3 of the County Development Plan requires the use of Sustainable Urban Drainage Systems (SuDS) to manage surface water, protect water quality and enhance infiltration. Elmfield responds through a SuDS-led drainage strategy that manages surface water in a controlled and sustainable manner.

The Climate Action Plan also places strong emphasis on nature-based water-management measures that build resilience to rainfall-intensity increases associated with climate change.

The incorporation of planting and landscape-integrated drainage features at Elmfield supports both climate adaptation and ecological resilience.

5.3 Material Resilience and Weathering

The development uses robust construction materials capable of withstanding extreme weather conditions projected in Ireland's climate scenarios. The Building Life Cycle Reports emphasise low-maintenance, long-life materials with high resistance to moisture, solar exposure, expansion

and contraction. This approach aligns with the Development Plan's policy direction for durable, climate-resilient construction (IE7, circular economy and material efficiency).

These material choices help ensure that Elmfield remains resilient under future climate conditions and reduces long-term maintenance and replacement impacts.

6.0 Transport and Accessibility

Transport is the second-largest source of emissions in South Dublin, and the Climate Action Plan identifies the Clondalkin area as a priority location for modal shift interventions. The Plan emphasises the need to reduce car dependency and promote active and low-emission travel modes.

The internal network of Elmfield prioritises pedestrian and cycle movement, ensuring that walking routes are short, direct and attractive. Secure cycle parking is provided in quantities far exceeding minimum standards, ensuring all residents have easy access to active travel facilities. Public transport is readily accessible from the site, with frequent bus services operating along adjacent corridors.

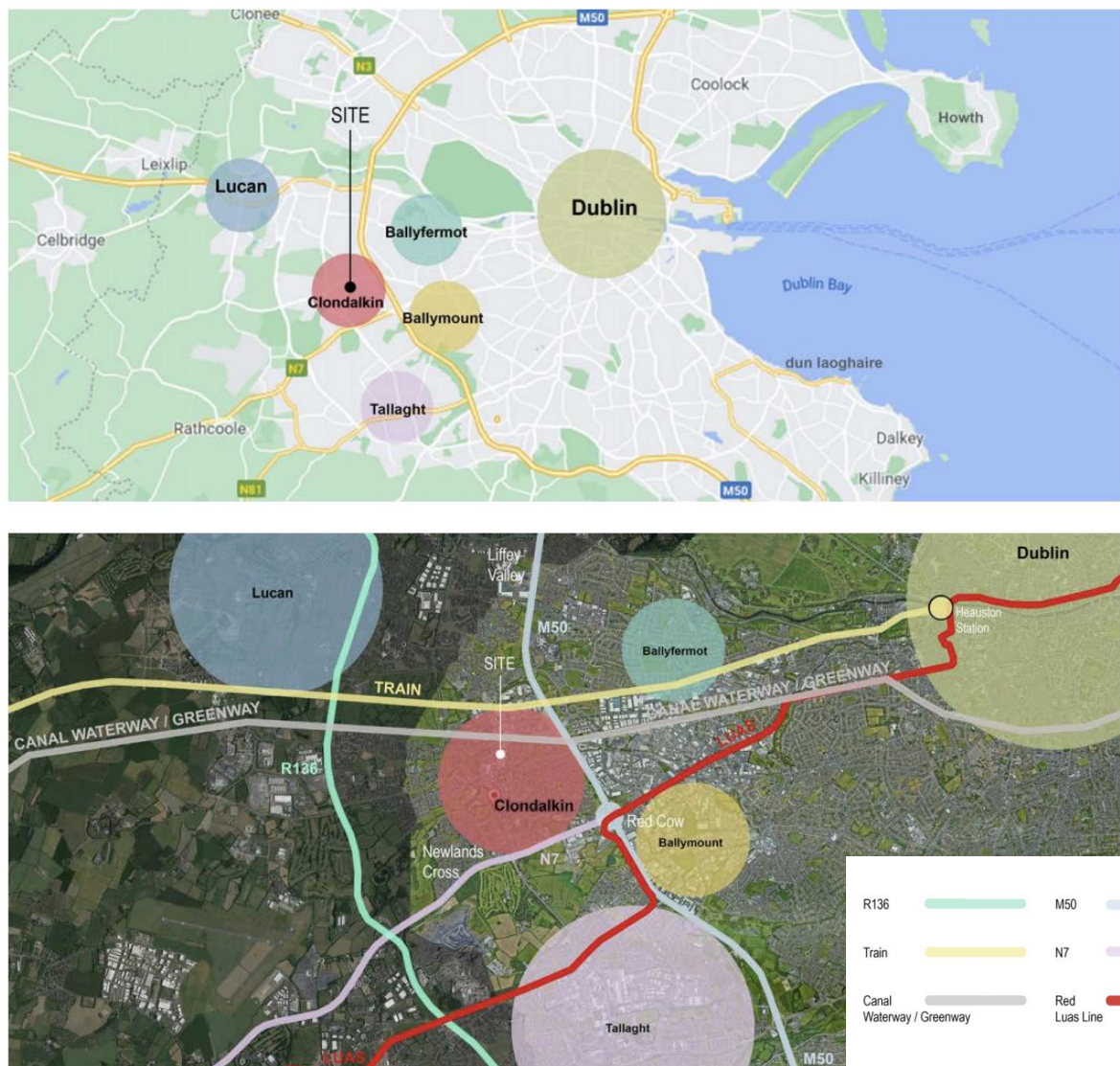


Figure 4. Transport map from Progress toward a unified ESG communications and stakeholder engagement strategy report by PMCA

Electric vehicle infrastructure is fully integrated into the site, including ducting and charging capability at designated parking bays. This aligns with EPBD requirements and supports Policy SM7 and Policy E4 of the South Dublin County Development Plan, which encourage the expansion of EV-charging infrastructure and reduced reliance on fossil-fuel vehicles.

Requirement / Criterion	EU EPBD (2021) Requirement	Elmfield Provision	Compliance
Minimum operational EV charge points	At least 1 operational EV charger for developments with >10 spaces	Multiple operational EV charging points provided across the scheme	Exceeds requirement

Ducting for future EV charging	Ducting for 1 in every 5 car parking spaces	Ducting installed for all required spaces, enabling future expansion	Compliant & future-proofed
Total parking spaces	N/A	210 car parking spaces provided on site	—
Future-proofing of infrastructure	Infrastructure must support future EV growth	Additional load capacity and ducting for further chargers included	Exceeds requirement
Alignment with SDCC policy	Sustainable mobility & reduced emissions	Supports SDCC objectives by encouraging EV use and reducing reliance on ICE vehicles	Strong policy alignment

Table 1. EV Charging Compliance with EU Energy Performance of Buildings Directive (2021)

In delivering this integrated transport strategy, Elmfield contributes meaningfully to the decarbonisation objectives of the Clondalkin area.

7.0 Ecology & Biodiversity

- Refer to the Ecology Report submitted by Altemar Environment Consultants
- Refer to the Biodiversity Report submitted by Austen & Associates

8.0 Circular Economy and Resource Management

Circular economy principles are now embedded in South Dublin County Development Plan policy. The Development Plan states that development should promote sustainable material use, reduce waste and facilitate recycling as part of a long-term transition away from linear consumption models (paraphrased for accuracy, replacing earlier wording referring to unspecified Plan text). Elmfield applies these principles through:

- material specifications chosen for long life
- low-maintenance building systems
- efficient waste sorting and recycling facilities
- avoidance of fossil-fuel heating systems
- lifecycle-informed design choices

All of this is referenced to in the Building Life Cycle report.

9.0 Community Well-Being, Social Sustainability and Placemaking

Sustainable development must support the social wellbeing of future residents. The South Dublin County Development Plan highlights that healthy, socially cohesive communities are supported by high-quality built environments, good access to green space, walkable neighbourhoods and inclusive public realm design. Elmfield has been designed to reflect these principles by providing a safe, attractive and socially connected residential environment supported by integrated green infrastructure and accessible active-travel routes.

At the heart of the scheme is a landscape framework that delivers a sequence of usable outdoor spaces, each with a defined character and function. These include passive areas for rest and quiet reflection, communal greens supporting informal play and social interaction, and planted corridors that enhance ecological value and visual relief. Nature-based SuDS features, including planted attenuation areas and swales, contribute to both amenity quality and climate resilience, strengthening the restorative value of the public realm.

The architectural layout has been designed to promote natural surveillance and encourage neighbourly connection. Homes front onto streets and communal spaces to provide a sense of enclosure, safety and visual continuity. This approach aligns with the placemaking and neighbourhood-focused policies of the County Development Plan (including QDP4 and QDP6), which emphasise high-quality shared spaces, accessibility and healthy outdoor environments.

Universal Design principles are applied throughout to ensure that entrances, footpaths and open spaces are accessible to all residents, including young children, older adults and people with reduced mobility. This supports the Development Plan's objectives for inclusive, equitable communities and reduces barriers to movement and social participation.

The internal street layout prioritises walking and cycling, reducing vehicle dominance and encouraging active living. These measures support the Climate Action Plan's emphasis on community health, physical activity and the benefits of access to green space and active-travel infrastructure. By creating an environment where walking is the natural choice for internal movements and short local trips, Elmfield contributes to healthier lifestyles and lower-carbon mobility patterns.

The development's energy-efficient homes and fossil-fuel-free heating systems also support social sustainability by lowering long-term energy costs for residents, aligning with the Climate Action Plan's focus on reducing energy poverty and building household resilience.

Collectively, these measures ensure that Elmfield not only aligns with the environmental and climate-action objectives of the County Development Plan and Climate Action Plan, but also delivers a socially supportive, healthy and resilient community environment where residents can enjoy high quality of life, strong social connections and access to inclusive, well-designed public spaces.

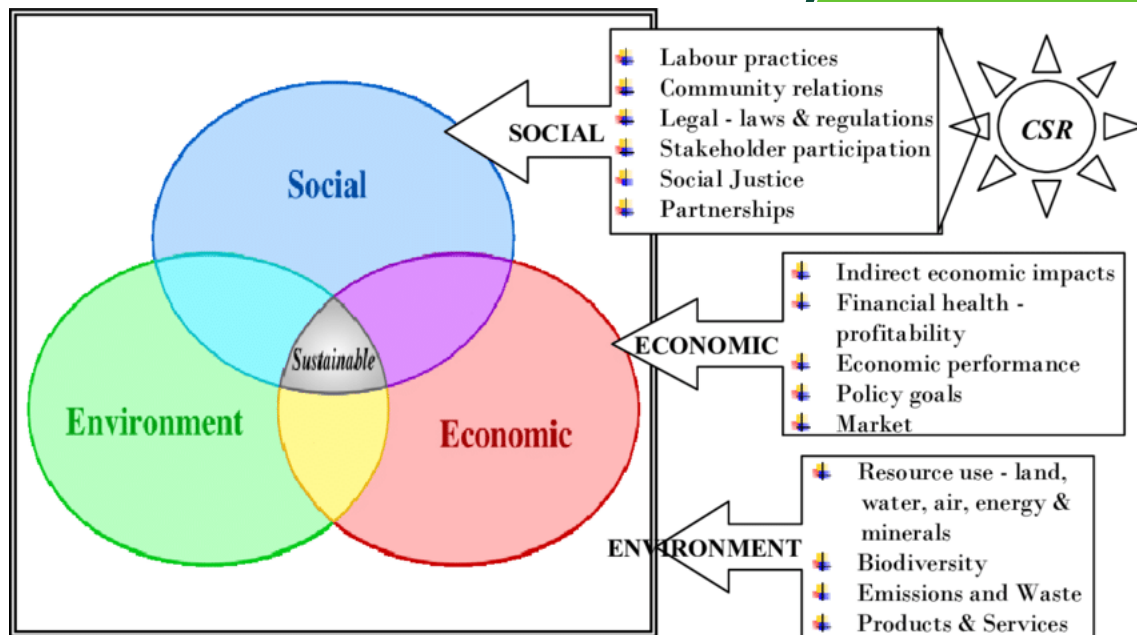


Figure 5. The Three Dimensions of Sustainable Development (Environmental, Social, Economic)

This graphic illustrates the integrated sustainability principles underpinning the project. The Elmfield development contributes positively to all three dimensions: environmentally through energy efficiency and green infrastructure; economically through reduced energy expenditure and durable lifecycle design; and socially through health-promoting public spaces and community-supportive layout.

Together, these measures form a coherent social sustainability strategy, ensuring that Elmfield is not only climate-aligned and energy efficient, but also a place where residents can enjoy a high quality of life, feel connected to their surroundings and benefit from a resilient, healthy and inclusive living environment.

10.0 Monitoring, Management and Governance

Effective climate and sustainability performance does not end at design stage; it requires a clear pathway for implementation, monitoring and long-term management. The South Dublin Climate Action Plan highlights the importance of ongoing monitoring, transparent reporting and collaborative engagement between stakeholders to ensure that climate objectives are achieved. Elmfield has been structured to support this requirement through a combination of design measures, management procedures and long-term governance commitments.

The durability of the development is underpinned by the lifecycle strategies outlined in the Building Life Cycle Report, which identifies the key components requiring maintenance, expected replacement intervals, and the environmental impacts associated with long-term operation. These

lifecycle measures are not simply technical considerations—they form part of the governance structure of the development, helping ensure sustainability objectives are delivered through decades rather than merely at the point of handover.

Energy performance will be monitored through the NZEB-compliant design, with ASHP systems capable of digital performance tracking. This allows households and management bodies to monitor electricity usage, heating cycles, and system efficiency. This supports the Climate Action Plan's emphasis on developing adaptive, data-informed communities that can improve energy performance over time. As Ireland's electricity grid continues to decarbonise, these measures ensure that Elmfield benefits from and contributes to long-term emissions reductions.

Water management features, including permeable paving, raingardens and swales, are designed to require periodic maintenance. The site management plan provides for inspections, vegetation renewal and sediment removal to protect the system's ecological and hydraulic performance. This aligns with Policy IE3 and IE4 of the County Development Plan, which require SuDS implementation, water-quality protection and climate-responsive drainage solutions.

Waste-management governance is integrated into the site layout through accessible waste-storage areas, recycling zones and clear guidance for residents on segregation. These provisions support Policy IE7, which promotes the transition to more sustainable waste practices and circular-economy behaviour across the county. By making sustainable waste practices easy, Elmfield reinforces long-term resident engagement in climate-aligned living.

Finally, community governance forms an important part of sustainability management. The compact layout, shared spaces, walkable streets and high-quality public realm encourage residents to take ownership of their environment. This aligns with the CAP's focus on strengthening community stewardship and resilience as part of local climate action. These social-governance aspects complement the technical measures of the scheme, supporting a development that performs strongly across environmental, social and operational dimensions.

11.0 Final Climate & Sustainability Compliance Statement

This Climate & Sustainability Report demonstrates that the proposed Elmfield residential development fully aligns with the policies, objectives and technical guidance set out in the:

- South Dublin County Development Plan 2022–2028, and
- South Dublin Climate Action Plan 2024–2029.

The proposal directly supports SDCC's commitment to climate leadership. It achieves this by delivering:

Policy Area / Requirement	Relevant SDCC Policy / CAP Objective	Elmfield Response / Compliance
Climate Mitigation	SDCC Development Plan (Policies E1 & E2): Require energy-efficient design, reduced emissions and integration of renewable energy. CAP: Supports countywide GHG-reduction pathway (51% reduction by 2030).	NZEB-compliant dwellings; A-rated homes; ASHP heating; high-performance building fabric; reduced thermal bridging; potential for PV; fossil-fuel-free operation; reduced operational carbon.
Operational Energy Efficiency	Policy E3 (Energy Performance in New Buildings): Requires NZEB compliance and high energy-efficiency standards.	Detailed energy modelling confirms NZEB compliance and A2/A3 BER performance for all dwellings.
Embodied Carbon & Materials	Policy IE7 (Circular Economy & Waste): Requires whole-life considerations, durable materials and minimisation of construction waste.	Lifecycle assessment completed; durable low-maintenance materials; efficient construction methods; material selection guided by long-term lifecycle performance.
Sustainable Transport & Mobility	Policies SM1–SM3: Promote active travel, permeability and reduced car dependency. Policy SM7 & Policy E4: Support EV-charging infrastructure	High permeability; extensive cycle parking; pedestrian-first layout; EV-ready parking; proximity to frequent bus routes; reduced reliance on private cars.
Climate Adaptation (Heat & Overheating)	CAP Adaptation Theme: Encourages passive measures to reduce overheating risk and improve resilience.	Optimised orientation; natural ventilation; shading; thermal mass; passive cooling measures.
Flood Risk & SuDS	Policy IE3: Requires SuDS in all new developments and protection of surface/groundwater. Policy IE4: Requires appropriate flood-risk management measures.	Full nature-based SuDS strategy: permeable paving, swales, rain gardens, vegetated attenuation, climate-adjusted rainfall allowances.
Green Infrastructure & Biodiversity	GI Policies (GI1, GI2, GI5): Protect and enhance ecological networks; support biodiversity; integrate nature-based solutions.	Native planting palette; pollinator-friendly species; tree planting; SuDS delivering ecological gain; high-quality landscaping.
Circular Economy & Waste	Policy IE7: Promote material efficiency, reduce waste and facilitate recycling and reuse.	Robust waste segregation; durable construction materials; lifecycle maintenance schedule; reduced replacement cycles; circular economy principles embedded.
Social Sustainability & Well-being	Policies QDP4, QDP6 & COS2: Require healthy, walkable, inclusive neighbourhoods with high-quality shared spaces.	Pedestrian-priority streets; inclusive access; communal green spaces; SuDS integrated into amenity; high-quality public realm; socially cohesive layout.
Decarbonising Zone Alignment	CAP (Clondalkin DZ Actions): Reduce emissions across buildings and	Elmfield delivers new low-carbon homes, reduces transport

	transport within DZ areas; support localised low-carbon systems.	emissions, enhances active travel and directly supports DZ decarbonisation priorities.
Long-Term Governance & Monitoring	CAP Governance Theme: Emphasises monitoring, stewardship and adaptive management for resilience.	Lifecycle maintenance plan; ASHP performance monitoring capability; SuDS management plan; durable materials reducing long-term emissions.