Climate Change Statement

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Project: Side and rear extensions to an existing house

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1. Introduction

This Climate Statement accompanies the planning application prepared by PAD Architecture on behalf of the client.

It sets out the project's approach to mitigating climate change, reducing greenhouse gas emissions, enhancing resilience to climate-related risks, and aligning local and national policy objectives.

The proposed side and rear extensions are designed to improve living conditions for a growing family while minimizing environmental impact throughout the building's life cycle.

2. Climate Objectives and Policy Context

Align with the National Planning Policy Framework (NPPF) and relevant Kirklees Local Plan policies on climate change, design quality, energy efficiency, and sustainable development.

Pursue reductions in operational carbon through improved fabric performance, efficient systems, and demand-side management.

Incorporate passive design principles to maximize natural daylight, ventilation, and solar gain where appropriate.

Promote resilience to overheating, flood risk, and other climate-related hazards.

Facilitate adaptable spaces that can respond to future low-carbon technologies and occupier needs.

3. Carbon and Climate Resilience Strategy

Target: Minimize operational carbon emissions of the extended dwelling and reduce whole-life embodied carbon where feasible.

Approach:

- Optimize solar orientation, shading, and thermal mass to reduce heating and cooling loads.
- Prioritize high-performance building fabric to reduce heat loss in winter and limit overheating in summer.

Consider passive cooling strategies (cross-ventilation, natural ventilation where appropriate) to reduce mechanical cooling demand.

Incorporate resilience measures (adequate insulation, moisture management, and robust, durable materials).

4. Energy Efficiency and On-Site Renewable Opportunities

Fabric Performance:

High levels of insulation, airtightness, and thermal bridging minimization in line with or exceeding Building Regulations.

Appropriate glazing specification to balance daylight with solar gains and glare control.

Heating and Hot Water:

Evaluate low-carbon heating options (e.g., air source heat pump) should the project be updated to reflect evolving policy and cost considerations.

Efficient heat recovery ventilation (MVHR) where mechanical ventilation is required.

Electricity:

Encourage the integration of energy-efficient LED lighting, smart controls, and opportunities for future solar PV installation on suitable roof surfaces, subject to planning and structural feasibility.

Water Heating:

Consider efficient domestic hot water systems with insulation and circulation strategies to minimize heat loss.

5. Building Performance and Modelling

Modelling Approach:

Where required by the planning authority, undertake simplified energy assessments or compliant Building Regulations submissions to demonstrate expected performance.

Use performance-based design to compare alternatives (e.g., glazing areas, insulation thickness) and select the lowest feasible carbon option.

Targets and Benchmarks:

Demonstrate alignment with local and national benchmarks for residential extensions in terms of energy efficiency and overheating risk.

6. Materials and Embodied Carbon

Material Selection:

Prioritize durable, low-embodied-carbon materials were feasible, with consideration of sourcing proximity and recycled content.

Construction Waste:

Implement waste reduction and recycling plans on site to minimize embodied carbon associated with demolition and construction.

Treated Timber and Steel:

Ensure sustainable sourcing for timber (FSC/PEFC) and manage steel usage to control embodied energy.

7. Water Efficiency and Drainage

Water Use:

Install water-efficient fittings (aerated taps, low-flow showers) to reduce potable water consumption.

Drainage and Flood Risk:

Ensure appropriate drainage strategy to manage surface water and mitigate flood risk in line with local guidance.

8. Transport, Travel Demand, and Accessibility

Accessibility:

Promote safe, convenient access for occupants, visitors, and service deliveries.

Transport:

Surface-level changes that do not increase reliance on private car use beyond existing levels.

Consider cycle storage provision and charging points for future electric vehicles, where feasible.

9. Construction Phase Considerations

Emissions and Resource Use:

Adopt best practices to reduce onsite emissions, energy use, and material waste during construction.

Site Management:

Plan for efficient delivery schedules to minimize traffic disruption and noise, with consideration for local air quality.

10. Adaptability, Futureproofing, and Net-Zero Readiness

Adaptable Design:

Layouts and services designed to accommodate future low-carbon technologies and changing occupancy patterns.

Net-Zero Readiness:

Although planning policy timelines vary, the project seeks to avoid lock-in of high-energy systems and retains flexibility for future upgrades.

11. Biodiversity and Green Infrastructure

Green Features:

Where feasible, incorporate soft landscaping that supports biodiversity, such as native planting and habitat-friendly spaces.

Green Roofs or Walls:

Consideration of green roofs or living wall opportunities, subject to structural feasibility and planning constraints.

12. Compliance, Monitoring, and Reporting

Compliance:

Ensure that design decisions comply with relevant Building Regulations, planning conditions, and policy requirements.

Monitoring:

Where appropriate, provide clarity on how energy performance will be verified post-construction (e.g., energy certificates, occupancy strategies).

13. Summary

The proposed extensions are designed to respond to the climate challenge by improving energy efficiency, reducing operational carbon, and enhancing resilience to climate risks.

The project aims to balance comfort and practicality for a growing family with responsible environmental stewardship.

By integrating high-performance fabric, potential low-/zero-carbon heating options, efficient water use, and adaptable spaces, the scheme aligns with both Kirklees Local Plan policies and national planning guidance on climate change.