University of Surrey - Climate Adaptation and Resilience Plan 2025 – 2030

Executive Summary

Climate change adaptation is essential to ensure the long-term resilience of the University of Surrey's estate, infrastructure, and operations. This Climate Adaptation and Resilience Plan (CARP) sets out a practical, cost-effective, and measurable approach to addressing climate risks, with a focus on **financial viability** and **operational deliverability**.

The CARP has been informed by industry-leading frameworks and best practices to ensure scientifically sound, cost-effective, and measurable climate adaptation strategies. Key contributions include:

- **BRE:** Flood risk management, BREEAM adaptation criteria, climate-resilient design.
- **BSRIA:** Building services resilience, HVAC system efficiency, post-occupancy monitoring.
- **UN SDGs:** Sustainability governance, water and energy efficiency, infrastructure resilience.
- **Climate Change Act 2008 (as amended):** Ensuring alignment with the UK's legally binding net-zero target and climate adaptation requirements.
- **Environment Act 2021:** Aligning with biodiversity, air and water quality regulations, and fostering nature-based solutions.
- **Flood and Water Management Act 2010:** Incorporating sustainable drainage solutions and flood resilience strategies at the local level.
- **UK Planning Policy Framework (NPPF):** Supporting the integration of climate resilience into urban planning and development processes.
- **Local Adaptation Plans:** Adherence to region-specific climate adaptation strategies (e.g., Greater London Authority's climate resilience framework, devolved nation climate programs).

By combining these inputs, the plan ensures that climate risks are mitigated effectively while maintaining financial feasibility.

Key Objectives

1. **Ensure a climate-resilient estate** through targeted risk management and infrastructure adaptation.
2. **Enhance governance and financial planning** to embed adaptation within university decision-making.
3. **Protect the university community** from climate-related health and business continuity risks.
4. **Improve biodiversity and environmental sustainability** through strategic land management and nature-based solutions.
5. **Support water and carbon reduction initiatives** ensuring actions do not unintentionally create the problem in the first instance.
6. **Ensuring any actions account for on-going maintenance of systems.**

This plan aligns with BRE (Building Research Establishment), BSRIA (Building Services Research and Information Association), and the UN Sustainable Development Goals (SDGs), with a structured roadmap of short-, medium-, and long-term objectives.

Future Climate Projections & Key Risks

Under a high-carbon emissions scenario, Surrey University is expected to experience:

1. **Increased flood risk:** from extreme rainfall and groundwater changes (BRE Flood Resilience Guide).
2. **Hotter, drier summers:** leading to overheating in buildings (BSRIA TM60: HVAC System Resilience).
3. **Air Quality:** Hotter temperatures could worsen air quality, particularly in urban areas, impacting respiratory health for students and staff.
4. **Milder, wetter winters:** causing infrastructure and maintenance challenges (BRE Climate Resilience for the Built Environment).
5. **Increased storm frequency:** impacting business continuity (BSRIA Guide to Weather Resilience).
6. **Water scarcity:** Prolonged dry spells could put pressure on water resources, especially for landscaping, cooling and general consumption.
7. **Increased energy demand and cost:** Higher energy needs in summer due to air conditioning putting stress on local infrastructure, especially challenging regional electrical capacity.

This plan prioritises cost-effective, high-impact interventions to mitigate these risks.

Information produced from actions within this plan will be confidential for use within the University only.

Governance & Organisational Knowledge

Short-Term (2024 – 2026)

1. Embed climate risks into risk registers (Target: 100% integration by Dec 2026, in line with BSRIA BG 9/2011 Soft Landings Framework). **Action – Chief Operating Officer**
2. Annual reporting on climate adaptation progress (First report by Nov 2026, aligned with SDG 13 – Climate Action). **Action – Head of Sustainability**
3. Train key staff in climate resilience (50% of Estates staff trained by Dec 2026 using BSRIA and BRE training methodologies). **Action – Director of Estates & Head of Building Fabric Project**

Medium-Term (2026 – 2028)

1. Data collection on financial impacts of climate change (Heat, flood, maintenance as per BREEAM Adaptation & Resilience Standards). **Action – Chief Finance Officer**
2. Biannual climate adaptation updates for staff and students (Aligned with SDG 11 – Sustainable Cities and Communities). **Action – Head of Sustainability**

Long-Term (2028 – 2030)

1. Integrate academic research into estate adaptation through a ‘Living Lab’ approach. **Action - Head of Building Fabric Project**, linking with BRE innovation frameworks.

Built Environment

Short-Term (2024 – 2026)

1. Conduct flood risk assessments for Stag Hill and Manor Park (Complete by Dec 2026, in line with BRE Flood Resilience Guide). **Action Head of Maintenance and Head of Building Fabric Project**
2. Ensure all new builds achieve BREEAM Climate Adaptation points. **Action – Head of Sustainability**
3. Develop post-adverse weather event inspection protocols using guidance from the BSRIA Guide to Weather Resilience. **Action - Head of Maintenance and Head of Building Fabric Project**
4. Improve green space resilience (native planting, shade provision as per SDG 11). **Action – Head of Horticulture**

Medium-Term (2026 – 2028)

1. Implement cost-effective flood defenses (SUDS, permeable paving, rainwater harvesting – BRE best practices). **Action – Director of Estates**
2. Optimise BEMS for passive cooling and heating efficiency (BSRIA TM60: HVAC System Resilience). **Action - Head of Maintenance and Head of Sustainability**
3. Review historic buildings for climate adaptation measures (BRE guidelines on heritage climate resilience). **Action - Head of Maintenance and Head of Sustainability**

Long-Term (2028 – 2030)

1. Roll out localised heating and cooling controls to allow some local control across the estate integrating BSRIA energy efficiency best practice. **Action - Head of Maintenance**
2. Adopt fabric-first principles for building retrofits (insulation, shading – BRE energy efficient design principles). **Action – Director of Estates**

University Community

Short-Term (2024 – 2026)

1. Establish acceptable temperature thresholds for University buildings using BSRIA TM60. **Action - Head of Maintenance**
2. Improve air quality monitoring & mitigation strategies aligned with SDG 3 – Good Health and Well-being. **Action - Head of Sustainability**
3. Review water supply infrastructure for climate resilience supporting SDG 6 – Clean water and sanitation. **Action - Head of Maintenance**

Medium-Term (2026 – 2028)

1. Increase proportion of electric fleet vehicles (Target: 30% by 2027) advancing SDG 7 – Affordable and Clean Energy. **Action - Head of Facilities**
2. Implement a university-wide sustainable travel plan linked to SDG 11 – Sustainable Cities and Communities. **Action – Director of Campus Operations**

3. Improve IT resilience to heat-related failures following BSRIA digital infrastructure guidelines. **Action Chief Information Officer**

Long-Term (2028 – 2030)

1. Expand drinking water access across all university buildings reinforcing SDG 6 – Clean Water & Sanitation. **Action - Head of Maintenance and Head of Building Fabric Project**
2. Develop supply chain adaptation measures to ensure business continuity leveraging BRE Climate Resilience best practices. **Action - Head of Sustainability and Director of Procurement**

Natural Environment & Biodiversity

Short-Term (2024 – 2026)

1. Replace 2,000m² of lawns with wildflower meadows to enhance biodiversity and reduce maintenance costs supporting SDG 15 – Life on Land. **Action – Head of Horticulture**
2. Develop post-storm tree inspection protocols to mitigate risk from extreme weather integrating BRE tree resilience research. **Action – Head of Horticulture**

Medium-Term (2026 – 2028)

1. Investigate rainwater harvesting for irrigation of planted beds and playing fields utilizing BRE water management services. **Action – Head of Maintenance**
2. Enhance green corridors to support biodiversity resilience aligned with BSRIA and BRE biodiversity reports. **Action – Head of Horticulture**

Long-Term (2028 – 2030)

1. Expand woodland areas on university estates to improve carbon capture and urban cooling advancing SDG 15 – Life on Land. **Action – Director of Estates**

Implementation & Monitoring

Each objective is assigned an **Owner**, KPI, and timeline to ensure accountability. The University will adopt a **continuous review process**, reporting **annually** to university leadership and integrating **learning from real-world climate impacts**.

A delivery group will be set up lead by the Estates Office, but with input from other service leads to help completion of actions within this plan

Approved: July 2025
Review annually.