HERITAGE MAX REALTECH PRIVATE LIMITED

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ENERGY EFFICIENCY POLICY

INTRODUCTION:

At Heritage Max Realtech Private Limited, we are committed to environmental stewardship through energy efficiency integration across the full development lifecycle. This policy reflects our vision to create resilient, climate-responsive buildings that go beyond compliance and set a benchmark in sustainable design, construction, and operations.

This Energy Efficiency Policy lays out our commitments, strategies, and performance indicators aimed at achieving significant energy reduction, enhancing occupant comfort, and supporting national and international climate goals. It ensures full alignment with GRESB Assessment 2025 criteria under the Development Component – Energy Efficiency, and is intended for implementation across all greenfield and redevelopment projects.

POLICY OBJECTIVE:

This policy aims to:

- Integrate energy efficiency considerations at each project phase, from planning and design to commissioning and operation.
- Reduce energy use intensity (EUI) and greenhouse gas emissions through passive and active strategies.
- Set measurable energy performance targets aligned with ECBC Super ECBC, ASHRAE 90.1, IGBC/GRIHA certification systems.
- Continuously improve through monitoring, stakeholder engagement, and transparent reporting.

Design & Construction Stage Commitments:

3.1. Architecture

3.1.1. integrative Planning and Climate Responsive Design

- Collaborate with architects, engineers, and stakeholders to optimize building orientation, envelope design, and passive design strategies for enhanced energy performance.
- Prioritize daylighting, natural ventilation, and thermal mass to minimize reliance on mechanical systems and maximize occupant comfort.
- Develop energy performance benchmarks and targets at the planning stage for all projects.

3.1.2. Dynamic Energy Simulation and Performance Modelling:

- Utilize advanced energy modelling tools (such as DesignBuilder, IES-VE, or eQuest) to conduct simulations at both design development and detailed design stages.
- Target an EUI reduction of ⩾ 20% over the ECBC 2017 baseline.

- Model HVAC, lighting, and envelope systems to support informed design decisions and lifecycle energy optimization.
- Evaluate building envelope components, glazing systems, and shading devices to optimize energy performance and meet sustainability goals.

3.1.3. Passive Design Strategies:

- Orientation: Align buildings to take advantage of natural daylight and prevailing winds, minimizing the need for artificial lighting and mechanical ventilation.
- Shading: Incorporate overhangs, louvers, and external shading devices to prevent direct solar heat gain during peak hours, reducing cooling loads.
- Insulation: Use high-performance insulation materials in walls, roofs, and floors to reduce heat transfer and maintain stable indoor temperatures.
- Thermal Mass: Incorporate thermal mass elements, such as concrete floors or masonry walls, to absorb and store heat during the day and release it gradually at night, stabilizing indoor temperatures.

3.2. Energy-Efficient Electrical Systems:

3.2.1. Lighting Design:

- Specify LED lighting systems with high efficacy ($\geqslant$120 lm/W) across all spaces.
- Integrate occupancy sensors, daylight sensors, and timer-based controls in all common, office, and utility areas.
- Design for Lighting Power Density (LPD) levels that are $\geqslant$30% lower than ECBC baseline.

3.2.2. Electrical Distribution:

- Use high-efficiency transformers, power factor correction devices, and low-loss conductors.
- Incorporate smart metering and real-time monitoring capabilities for lighting, plug loads, and equipment

3.3. Mechanical Systems and HVAC Design:

3.3.1. HVAC Selection and Optimization:

- Choose HVAC systems with high COP/EER ratings and BEE 5-star compliance, or equivalent international performance levels.
- Use Variable Refrigerant Flow (VRF), Heat Recovery Systems, and Demand-Controlled Ventilation (DCV) wherever applicable.
- Implement thermal zoning and variable speed drives for energy savings.

3.3.2. Indoor Environmental Quality:

- Design for enhanced indoor air quality (IAQ) and thermal comfort.
- Use ERV systems, high-efficiency filters, and IAQ sensors.
- Align with ASHRAE 62.1 standards for minimum ventilation rates.

3.3.3. Building Envelope Optimization:

- Specify high-performance building materials, insulation, and air sealing techniques to minimize thermal bridging, air leakage, and heat loss.

- Incorporate passive solar design strategies, such as proper shading, insulation, and thermal mass, to optimize building envelope performance and reduce HVAC loads.

COMPLIANCE WITH STANDARDS:

- Ensure that ventilation systems are designed in accordance with ASHRAE Standard 62.1, which establishes minimum ventilation rates and indoor air quality requirements.
- Strive to meet energy efficiency standards established by Indian Green Building Council (IGBC) certification, aiming for certification levels that demonstrate superior energy performance and sustainability.
- Exceed energy efficiency codes, including the Energy Conservation Building Code of India (ECBC), ASHRAE 90.1 and other relevant codes, by implementing measures that go beyond minimum requirements.

Operational Stage Requirements:

4.1. Commissioning:

- Ensure fundamental and enhanced commissioning in line with ASHRAE guidelines.
- Conduct pre-occupancy and seasonal commissioning.
- Appoint independent commissioning agents for verification and documentation.

4.2. Monitoring and Controls:

- Deploy Building Energy Management Systems (BEMS) to track energy performance in real time.
- Configure BEMS for occupancy-based scheduling, load optimization, and demand response integration.
- Conduct quarterly reviews of system data and performance.

4.3. Sub-metering and Analytics:

- Sub-meter all high-consumption end uses: HVAC, lighting, plug loads, elevators, and pumps.
- Integrate energy meters with data analytics dashboards.
- Utilize Energy Analytics Platforms to:
  - Identify anomalies,
  - Conduct root-cause analysis,
  - Recommend optimization strategies

4.4. Performance Verification:

- Compare post-occupancy performance data against energy model predictions.
- Limit performance gaps to ⩽10% variance from modelled EUI.
- Conduct biannual energy audits by certified energy auditors or third-party assessors.

IMPLEMENTATION, MONITORING & REPORTING:

4.1. Implementation:

- Assign dedicated resources and responsibilities for the implementation of energy efficiency measures outlined in this policy.
- Ensure that project teams, contractors, and suppliers are aware of and adhere to energy efficiency requirements throughout the planning, design, construction, and operation stages of the project.

4.2. Monitoring:

- Establish protocols and systems for ongoing monitoring of energy performance metrics, including energy consumption, demand patterns, and indoor environmental quality parameters.
- Conduct regular audits and inspections to verify compliance with energy efficiency standards and identify opportunities for improvement.

4.3. Reporting:

- Generate regular reports on energy efficiency performance, including key metrics, benchmarks, and progress towards goals and targets.
- Communicate energy performance data to stakeholders, including project teams, investors, tenants, and regulatory authorities, to demonstrate transparency and accountability.

REPORTING AND TRANSPARENCY:

- Prepare quarterly internal reports and annual public disclosures on energy performance.
- Track key metrics such as EUI, total energy consumption, and renewable energy production

COMPLIANCE AND CERTIFICATION:

- All new developments shall target third-party green building certifications: IGBC Gold/Platinum, LEED Gold/Platinum, or EDGE Advanced.
- Projects shall exceed applicable energy codes, including ECBC 2017, Super ECBC, and ASHRAE 90.1 (2022)

ROLES, RESPONSIBILITIES & GOVERNANCE:

- The Sustainability Team shall lead implementation, monitoring, and reporting of energy efficiency measures.
- Project Managers and MEP Engineers shall be responsible for design adherence and construction oversight.
- Facilities and Operations Teams shall ensure ongoing optimization, data monitoring, and compliance in the post-handover phase)

Continuous Improvement:

Heritage Max Realtech is committed to ongoing enhancement of our Energy Efficiency Policy. We will:

- Review and update the policy annually or in response to code/certification changes.

- Conduct training programs and capacity-building workshops for employees, consultants, and contractors.
- Incorporate lessons learned into future project briefs and tender documentation.