

Eco-Soul Resort a Scalable Model for Intelligent Sustainable Hospitality

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Abstract

Introduction: The tourism industry is undergoing a global transformation driven by sustainability challenges, technological innovation, and the growing demand for meaningful travel experiences. Traditional hospitality models often generate high environmental impact while failing to provide personalized and emotionally engaging experiences for modern travellers.

Sustainable Innovation: Eco-Soul Resort proposes a new approach to sustainable tourism through the integration of ecological architecture, artificial intelligence, and human-centered hospitality design. Located conceptually in Serra da Estrela, Portugal, the project is designed as an eco-luxury resort operating through a hybrid human-AI management system that combines operational efficiency with environmental responsibility and emotional guest personalization.

AI & Smart Hospitality Integration: The resort integrates renewable energy systems, circular water management, intelligent automation, predictive maintenance, and AI-driven guest experience optimization. Its operational model seeks to reduce environmental impact while increasing long-term efficiency and scalability within the hospitality sector.

Environmental Impact & Regenerative Hospitality: Eco-Soul Resort also explores how technology can coexist harmoniously with nature, transforming hospitality into a regenerative and immersive experience rather than a purely commercial service. The project aligns with several United Nations Sustainable Development Goals (SDGs), particularly those related to sustainable cities and communities, responsible consumption, climate action, and innovation infrastructure.

Conclusion: This presentation aims to demonstrate how intelligent hospitality systems can contribute to the future of sustainable tourism by combining environmental stewardship, technological integration, and emotionally transformative travel experiences.