

The ISA-iSUN Design Challenge

An Initiative by the International Solar Alliance

Executed by GRIHA Council

Concept Note

Climate change has always been part of Earth's natural systems; however, the unprecedented speed and intensity of current changes have made it one of humanity's most urgent challenges. The built environment is central to this crisis, accounting for approximately 34% of global energy demand and 37% of energy- and process-related carbon dioxide emissions. Small Island Developing States (SIDS) face particularly severe consequences, including rising sea levels, intensifying storms, coastal hazards, and deep energy insecurity caused by dependence on imported fossil fuels. These pressures are especially significant for the tourism sector, which is a major driver of economic activity across many SIDS and relies heavily on energy-intensive hotels, resorts, and coastal infrastructure. In the Maldives, tourism contributes approximately 30% of nominal GDP, while the country remains heavily dependent on imported diesel for electricity generation. This creates a direct relationship between the resilience of the built environment, the security of energy systems, and the continuity of national economic activity.

To respond to this challenge, the International Solar Alliance (ISA), through the ISA-SIDS Platform, has partnered with the GRIHA Council to co-host the ISA-iSUN Design Challenge. The Challenge is positioned under the Enabling Readiness pillar of the ISA-SIDS Platform, which supports technical assistance, feasibility validation, regulatory support, and the development of practical solutions for sustainable energy deployment in SIDS. It invites architecture students to work alongside practising architects and other relevant professionals to develop climate-resilient, scalable, and replicable resort prototypes for the Maldives, Mauritius, and Fiji. The involvement of practicing architects strengthens the credibility, technical rigour, and practical relevance of the proposed designs.

The Design Challenge centres on embedding solar energy directly into architectural design through four key objectives:

- **Build Capacity:** Strengthen student competencies in design thinking, problem-solving, and project execution, supported by professional architectural guidance.
- **Bridge Theory and Practice:** Translate clean-energy concepts into functional, solar-integrated designs tailored to the specific needs and conditions of SIDS.
- **Raise Awareness:** Highlight the role of solar innovation and eco-conscious design in developing climate-resilient tourism infrastructure.
- **Ensure Scalability:** Encourage affordable, accessible, and feasible solutions that can be replicated and adapted across SIDS.

Together, these objectives will generate professionally guided, technically credible, and implementation-oriented resort prototypes. They will also create a transferable knowledge base for governments, architects, developers, and communities, supporting stronger energy security, climate resilience, and sustainable tourism infrastructure across island states.