



Solar
Decathlon
India



IUSSTF



INDIAN INSTITUTE FOR
HUMAN SETTLEMENTS



Alliance for an
Energy Efficient
Economy

Project Partner Guide

2023-24





Introduction

We invite developers, building owners, and other project proponents to become Project Partners and bring their projects into Solar Decathlon India (SDI) for teams to work on.

SDI is a challenge for post-graduate and undergraduate students from Indian institutions to develop net-zero energy and climate-resilient building solutions to combat Climate Change.

- Each student team works with a developer, owner or a client (Project Partner) on a real project and develops their designs to the level of tender documents.
- In the 2022-23 challenge, 154 teams from 126 Indian institutions participated and partnered with 86 Project Partners. Many teams produced high-quality work, at par with the best professionals. We anticipate 160+ teams in the 2023-24 challenge.
- Each team is multi-disciplinary made up of 5-15 students and is mentored by their faculty.
- There are 5 types of projects: 1) Multi-Family Housing, 2) Educational Buildings, 3) Office Buildings, 4) Construction Worker Housing, and 5) Community Resilience Shelters.

Building owners and real estate developers can become Project Partners in SDI to access the creativity of students, the expertise of their mentors and explore solutions on real projects. SDI provides a risk-free platform to see affordable ready-to-implement designs for climate resilient and sustainable buildings.



Team Tejasvi 2.0 partnered with SEEDS India and designed a net-zero Community Resilience Shelter in Assam

Annual Schedule

JUL	AUG	SEP	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUN
ODD SEMESTER Registration of team and choosing Building typology Partner with a developer, do market analysis, set project goals Access Learning Modules, Simulation Tools, and mentorship from Technical Resource Group Submission of Pre-design analysis and concept design Faculty Development Programme						EVEN SEMESTER Access Learning Modules, Simulation Tools, and mentorship from Technical Resource Group Develop design, calculations, simulations, construction details, MEP structural design, cost estimates, ROI, LCC Submit reports and present to Project Partners. Finalists revise reports, present to Jury. Winners announced.					SUMMER BREAK Involvement of Project Partner for further development and implementation

Project Partners

Becoming a Project Partner does not require the developer or client to put up any funds. The only commitments are:

- **Provide information:** About your project site, project brief, any financial and other constraints to make the project as real as possible for the teams.
- **Invest a limited amount of time:** Explain the project to the teams. This may take 2-3 hours.
- **Take interest in the outcome:** Send your representative to the Finals in May 2024 as an observer.
- **Optional:** On mutual agreement, the Project Partner can get involved with the team to provide knowledge or expertise during the design development process
- **Become empanelled:** A Project Partner can also choose to become empanelled with SDI for a long-term engagement and play a catalytic role in moving India towards net-Zero. Contact us if you are interested.
- Mahindra Lifespaces, Sobha Ltd., TATA Realty, Sumadhura Infracon, and Infosys are Empanelled Project Partners with a commitment to a long-term association with SDI. This includes considering the students' designs for implementation in their projects and hiring SDI alumni to work in their organisations.

Project Partner Benefits

- **Exposure:** Media exposure related to SDI and high-performance buildings.
- **Customised solutions:** A net-zero-energy-water design solution developed by the team for the project. This could also be a prototype for future work. Some teams are likely to produce market-ready solutions.

- **Recruitment opportunity:** Opportunity to recruit the best talent in the market.
- **Learning:** Exposure to high-performance and affordable design strategies. Access to SDI's e-learning modules on Building Science and net-zero design approaches

What the Students Gain

- **Experience:** The students get hands-on experience in developing net-zero building design solutions for upcoming, real projects
- **Education:** Our online educational modules help them understand concepts and best practices for high performance buildings.
- **Career boost:** Past experience shows that Solar Decathlon participants get a boost in their careers. They build a strong network with their peers, industry partners, and become highly desirable placement candidates.
- **Confidence:** Importantly they gain confidence that they can learn and tackle climate change.

Becoming a Project Partner

- **Contact us:** If you have a project in the 5 building types for students to work on, contact us.
- **Contact a participating institution:** If you are in touch with a participating institution, you can provide your project information to the team directly.

Experiences from Past Project Partnerships

- In 2021-22 Challenge, **Team Builders** from **Jindal School of Art and Architecture, Shiv Nadar University and Jamia Milia Islamia** designed a net-zero energy and a net-positive water solution for **Hamara school by the Society for Human Welfare and Development**. Their solution included passive design techniques like parametric kinetic facades to optimise shading, light and ventilation in the building. Their Project Partner has approved their design and is currently implementing the Team's solution.
- In 2020-21, **Team Nivas** made up of 15 students from **Institute of Engineering & Management (IEM), OmDayal Group of Institutions and Jalpaiguri Government Engineering College** worked with **Mahindra Lifespace Developers Limited**, to design their 500+ unit residential complex, make it 50% energy efficient, and reuse 75% of waste water. They innovated natural ventilation strategies, developed an app for energy forecasting, and a residential building management system. Their design catered to 2-days of autonomy for electricity and power to provide uninterrupted critical operations along with disaster resistant strategies.
- In 2020-21, **Team Scribble** from **SPA Bhopal and Reva University** developed a net-zero office building design for the **National Health Mission Headquarters in Bhopal**. The project was earmarked as a sustainable building by the project partner, and Team Scribble designed a net-zero solution within the same budget. They also came up with department level energy budgets and tracking those with Intelligent Building System in the form of an app.

Testimonials from Past Participants and Partners

Mahindra Lifespaces is an active partner of SDI since its inception. We are happy to offer our projects and guidance to young professionals who participate in SDI to develop net zero projects. SDI interns have added tremendous value to our net zero journey.

Sunita Purushottam, Mahindra Lifespaces

Solar Decathlon India gave us a fresh perspective on how a building can be designed. Teams came up with different rationales, and it was interesting how everybody dealt with the same problem differently. As a standard practice we will have a design competition for all our sites before we finalise what to do.

Deepanshu Gupta, ORD Towers

I am really excited with the way this competition has been conceptualized, because it is a 360-degree view point. It is a very fulfilling experience for me, because it has given me an opportunity to interact with my students and instill these values of energy saving in their designs.

Poorva Keskar, Principal, SMEF's Brick School of Architecture

Solar Decathlon India is perfectly aligned with our organization's vision of doing multi-family housing at affordable rates. It comes as a solid value addition to all our clients. Interacting with students and helping them refine their work is a give and take. We learn from them, and they learn from us.

Rakesh Bhatia, Ecofirst Services Limited

Engineering students rarely get to know about real life work during their college days. Our students are really enjoying learning and working together with people from other streams of construction such as architects

Rabia Sameen, Faculty, M.H. Saboo Siddik College of Engineering

We are learning different approaches to sustainability. Our project partner Navira has the Saptha Patha concept of sustainability including land, people and food, whereas our industry partner, Passive House Institute based in Germany, have a different approach to how they deal with resilience.

Ramya Kannan, School of Planning and Architecture, Vijayawada

Some of these solutions are very implementable. Will I bank my money on doing this (Team Ecocult) project? Yes. It makes sense, it can be done. It can stand.

Harleen Oberoi, Vice President, Tata Realty and Infrastructure



Organisers*



GOI Support



Knowledge Partner†



Programme Support



Affiliates‡



* The roles and responsibilities of AEEE and IIHS are separate and distinct, with independent budgets, financial resources and execution.

† AEEE and COA have signed a Memorandum of Understanding for knowledge collaboration on net-zero buildings in India.

‡ ISHRAE (India) and IEEE SA (India) are acting as outreach partner to SDI. Solemma provides free software licenses to all student participants and facultymentors for the SDI competition. There is no financial implication. The respective teams at their own risk and responsibility, may enter into relevant agreement(s) with Solemma for use of the Solemma software. Teams are However free to use any dynamic simulation modelling software of their choice Climate Launch Pad India to provide incubation to finalist team(s) of SDI.

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