PROJECT PARTNER GUIDE

2022-23

Solar Decathlon India™

IUSSTF

iihs® INDIAN INSTITUTE FOR HUMAN SETTLEMENTS

Alliance for an Energy Efficient Economy™

Introduction

We invite developers and real estate project proponents to become Project Partners and bring their projects into Solar Decathlon India for teams to work on.

Solar Decathlon India is a challenge for college students from all over India to innovate develop net-zero energy and climate resilient building solutions, to combat Climate Change.

- Each team needs to work with a developer or a client (Project Partner) on a real project, and develop their designs to the level of tender documents.
- In the 2020-21 challenge, 75 teams from 103 colleges participated. Many of these teams produced high quality work that is on par with that of the best professionals.
- We anticipate over 100 teams in the 2021-22 challenge.
- We provide the teams with online coursework, and ongoing mentoring.
- We select teams that enter into a 6-week incubation hub.
- In 2021-22 there are 5 types of projects the team can work on: 1) Multifamily Residential, 2) Small Residential, 3) Educational Buildings, 4) Office Buildings and, 5) Multi-hazard Community Shelters.

We need a 50% reduction in building energy demand by 2050 to reduce the impact of Climate Change. This needs active participation of developers and real-estate companies. Resilient buildings will protect a large section of the population vulnerable to climate change.

Solar Decathlon India is a platform for innovation in the building sector, for student teams, real estate developers, and industry to collaborate, and to develop solutions to combat climate change and make future-proof solutions.

The design solutions can be adopted or even replicated by the Project Partners. Solar Decathlon India provides a risk-free platform for developers and project proponents, so that they can get affordable ready-to-implement designs for climate resilient and sustainable buildings.

Annual schedule of the Solar Decathlon India

JUL AUG SEP OCT NOV DEC JAN FEB MAR APR MAY JUN

ODD SEMESTER

- Register, form a team
- Select competition Division (building type)
- **Get a Project Partner, do market analysis, set project goals**
- Access Self Learning Modules and Simulation Tools
- Attend Webinars
- Access Technical Resource Group
- Pre-design analysis, propose concept design
- 2 submissions - Oct and Dec
- Midyear faculty and Project Partner conference in Dec

EVEN SEMESTER

- Access Self Learning Modules and Simulation Tools
- Attend Webinars
- Access Technical Resource Group
- Develop design, calculations, and simulations, construction details, methods, develop MEP structural design, cost estimates, ROI, LCC
- **Submit reports and present to Project Partners in Mar**
- Finalists revise reports Present to Jury in May. Winners announced

SUMMER BREAK

- Incubation of select teams with industry mentors
- **Involvement of Project Partners**

Commitment from the Project Partner

Becoming a Project Partner does not require the developer or client to put up any funds for sponsoring the team or the competition. 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 Design Challenge Finals in April 2022 as an observer. If the project and partner team win and goes in the 6-week incubation, send your representative to the Incubation hub.
- **Optional:** If a Project Partner wants to be additionally involved with the team to provide knowledge, expertise etc. during the design development process, that is optional and up to the college team and the Project Partner.

Project Partner Benefits

- **Exposure:** Media exposure related to the Solar Decathlon India and high-performance buildings.
- **Customized 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, especially if they are selected for the Incubation.
- **Recruitment opportunity:** Direct exposure to top motivated and hardworking young professionals, with the opportunity to recruit the best talent in the market.
- **Learning:** Exposure for your team to high performance and affordable design strategies.

What the students gain

- **Experience:** The students get hands-on experience in developing innovative solutions for net-zero buildings or live, 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:** Most importantly they gain the confidence that they can learn and tackle complex socio-techno-economic problems.

Becoming a Project Partner

- **Contact us:** If you have a project you want students to work on, that fits the building types, 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 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 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 design 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.*
- *In 2020-21, Team Meraki from Jamia Millia Islamia University worked on a 1,40,000 sq.m. office building for Tata Realty and Infrastructure Limited, aiming for net-zero performance. They lowered the energy consumption by 50% and achieved 93% water autonomy. They also focused on occupant health with smog eating concrete that cleans the air, and with a design that reduces infections through airborne and indirect contact pathways. They have proposed a RESCO financing model to make the renewable energy system affordable.*

Testimonials from Past Participants and Partners

As a project partner in Solar Decathlon India, we want to drive change in the building industry. These young, creative Decathletes will help us achieve that. More than contributing, we are learning from them. I hope all Project Partners stay with Solar Decathlon India as it builds from strength to strength.

Viral Oza, 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

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

This is a great initiative, as very rarely do students get an opportunity to work on a live project. The learning is immense. Solar Decathlon India is creating a great bridge that is bringing together academia, the industry and the practical experience.

Visiting Faculty, Sushant School of Architecture

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

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

This competition differentiates itself from any other competition that I have been in, because through this we have an opportunity to make real-world impact. I never thought I would approach people and companies outside in the first few years of my professional life, let alone as a college student.

Vikram Srikanth, Manipal Institute of Technology

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Organisers

Gol Support

Programme Support

CSR Support

Affiliates

The roles and responsibilities of AEEE and IIHS are separate and distinct, with independent budgets, financial resources and execution. ClimateWorks supports AEEE. IEEE SA (India) and ISHRAE (India) are outreach partners. DesignBuilder and Solemma provides free software licenses to all student participants and faculty mentors. Climate LaunchPad India incubates selected teams.

IUSSTF

The Indo-U.S. Science and Technology Forum (IUSSTF) is a bilateral organisation that promotes Science, Technology, Engineering and Innovation through substantive interaction among government, academia and industry. It provides Solar Decathlon India as a platform for innovation towards sustainable economic development, encouraging the use of renewable energy sources and towards promoting the design of buildings that are energy efficient and self-reliant in energy usage.

IIHS

The Indian Institute for Human Settlements (IIHS) is a national educational institution committed to the equitable, sustainable and efficient transformation of Indian settlements. IIHS works on cutting edge interdisciplinary issues in its teaching, research and practice for a new generation of applied practitioners and thought leaders. IIHS is jointly conducting Solar Decathlon India.

AEEE

Alliance for an Energy Efficient Economy (AEEE) supports policy implementation and enables the energy efficiency market with a not-for-profit motive. AEEE collaborates with diverse stakeholders such as policymakers, government officials, business and industry, consumers, researchers, and civil society organisations, thereby contributing toward meeting India's goals on energy security, clean energy, and climate change. AEEE is jointly conducting Solar Decathlon India.

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