PowerHouse

EMPOWERING COMMUNITIES

Concept:

- *iDream Advisory Services Pvt Ltd (www.idream.in)*

Research:

- *Brigham Young University, Utah, USA*

Support:

- *Crisp Social Ventures (www.CrispSocialVentures.com)*
- *Oxford University, UK*

A SOLAR-POWERED HOUSE WHICH EARNS FOR ITS OCCUPANTS, IN SEMI-URBAN AND RURAL INDIA, THEREBY UPLIFTING THEM SOCIO-ECONOMICALLY

There is a shortage of 26 million homes in India and a large chunk of this is located in 'off-grid' locations. "Powerhouse" is a standardized house, mass customizable with five base designs, integrated with photo-voltaic ("PV") solar panels, which will not only provide electricity for the inhabitants but also allow electric two wheelers to be charged. With a promise to 'electrify every village in India', the house has the possibility of earning for the inhabitants in the future, by selling back power to the grid, as part of the net-metering policy.

Powerhouse, with its 'integrated solar panels' approach, generates and consumes optimum power. This will be monitored though IP based technology to ensure sustainable performance; in a way similar to how performance of cars are monitored across parameters like fuel efficiency.

Most solar PV roof-top panels come with a 25-year warranty, and a payback of less than 5 years. Powerhouse will be the first home in India, which will come with a user manual; with usage instructions for different seasons of the year, for its most efficient performance. A linked annual maintenance concept with the supplier will ensure that the house continues to perform with efficiency for 25 years.

SOCIO-ECONOMIC OUTCOME

Powerhouse promises to do the following:

- Provide a safe, hygienic house to those who need one, where power is ensured.

- It will enable children to study and be educated, giving them a good future.
- The installation of such a house will skill people within the community and give them a source of income. One can undergo training and become an authorized installer.
- Living in a solid home and in hygienic condition will reduce health and associated financial burden.
- The families and communities will get connected with the mainstream with the ability to charge mobile phones, electric two wheelers and by watching television.
- When such houses get connected to the grid, they will earn by supplying back excess power to the grid.

Manufacturing homes like cars*: The promoters are believers in the power of standardization in housing. In the past, the promoters have been successful in co-developing a standardized high-rise housing solution; wherein a 'manufacturing' approach, as against a 'construction' approach has helped reduce the time of installation by over 70%, keeping costs at bay and quality consistent. That initiative, which has been prototyped in Ahmedabad, has won several awards and is partly funded by the Department of Science & Technology, Govt of India.*

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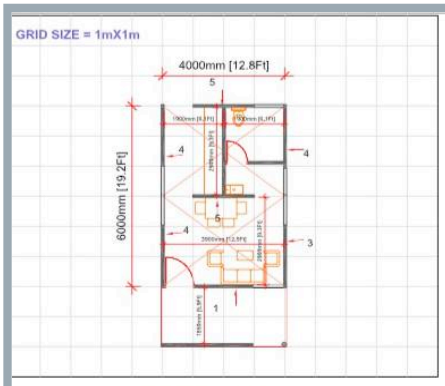
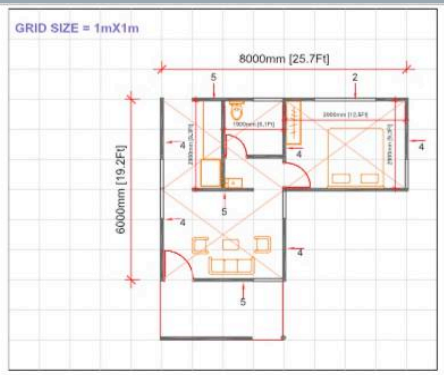
CURRENT STATUS: MBA students from Brigham Young University, in association with Oxford University have done a business viability study. Technical feasibility studies have been conducted, and a live prototype is planned next.

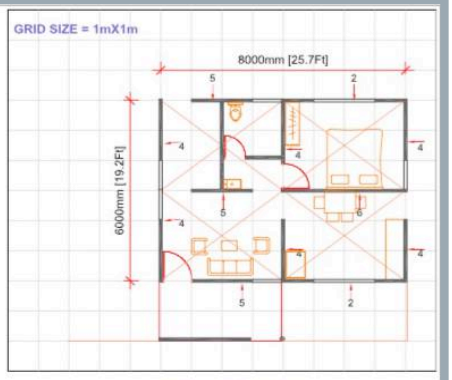
Path-breaking innovation happens at the intersection of business viability, technical feasibility and human desirability.



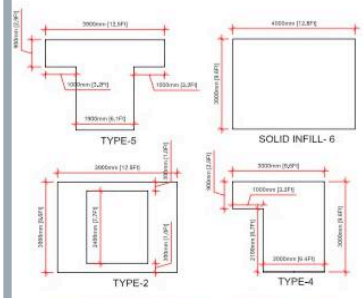
STUDIO FLOOR PLAN



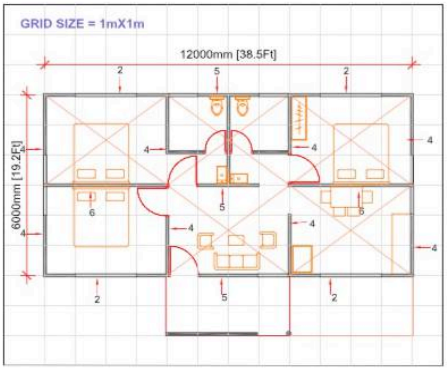
1 BHK FLOOR PLAN



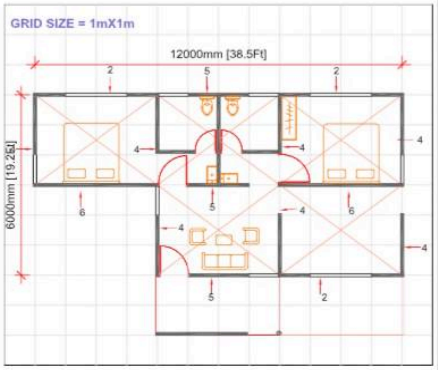
1BHK + FLOOR PLAN



ELEVATION OF WALL TYPES USED



3 BHK FLOOR PLAN



2BHK FLOOR PLAN

INTEGRATED SOLUTION

Solar roof top panels have been seen as a stand-alone product, customized to user needs. An 'afterthought approach', which is non-standard, tends to make a solution time consuming, of inconsistent quality, expensive and often messy.

Powerhouse is an integrated solution where it is like living inside a power generator. With a standardization approach, it promises to not only address the power issue, but also the housing issue. With the ability to charge electric two wheelers Powerhouse helps reduce the carbon footprint further.

NET METERING & EARNINGS

Net metering, which is being implemented across India, is a billing mechanism that credits solar energy system owners for the electricity they add to the grid. eg; if a residential customer has a PV system on the home's rooftop, it may generate more electricity than the home uses during daylight hours.

With the panels' cost being recovered in less than 5 years, Powerhouse promises at least 20 years of free power as an off-grid solution, as solar PV panels come with 25 years warranty. With the possibility of such homes being connected to the grid in the coming years, adopting net-metering will 'earn' for the inhabitants, thereby offsetting the finance costs.

STANDARDISED OFF-SITE MANUFACTURING

The superstructure will have off-site manufactured standardized concrete panels, erected on site to serve five designs. There are only four types of wall panels. All other components like doors, windows, solar panels too will be standardized and produced off site. The superstructure can be erected on site within two days, cutting down erection time by over 70%.

Designs are modular in nature, with the ability to add rooms and solar panels to a base design, over time. The house grows with the family.

TEAM

Parthajeet Sarma: Team Lead

Parthajeet Sarma is an Architect + MBA+ Chevening scholar (Oxford University), writer, award-winning innovator and entrepreneur. He is the founder of iDream, a design innovation firm specialised in the area of corporate real estate and construction.

Dr. John Hoffmire: Advisor

Dr. John S. Hoffmire teaches MBA at Oxford University. Earlier he served as the Vice President of Marketing at Ampersand Ventures and has an extensive background in investment banking services.

A Studio can become a 3-bedroom house, over time.