



## The **ISAAC** revolution!

*Ever wondered if sun starts cooling against its nature...*

This is no fiction anymore. We introduce you to ISAAC technique, a solution to modern HVAC problems and a brand new dimension for HVAC entrepreneurs. **ISAAC** stands for **I**nnovative **S**olar **A**nd **A**ir **C**onvection. This is basically a new passive cooling technique which is an amalgamation of several innovative devices manufactured in India. The idea is to approach these manufacturers and provide a suitable system for a given architectural site. Just like any other HVAC consultancy service, we will provide an HVAC design, the only difference being our techniques and suppliers like **TABS**, **aDsorption chillers**, **solar VARS**, etc suitable for the given site. The problem definition of our current design is as follows:

- Selection of architectural site
- Selection of suitable techniques for the site
- Design of the collaborative system
- Simulation of the system using software such as TRNSYS, Solidworks, etc.

### **Why need a new system?**

- The present system uses high grade energy for low grade consumption, hence making it heavily expensive.

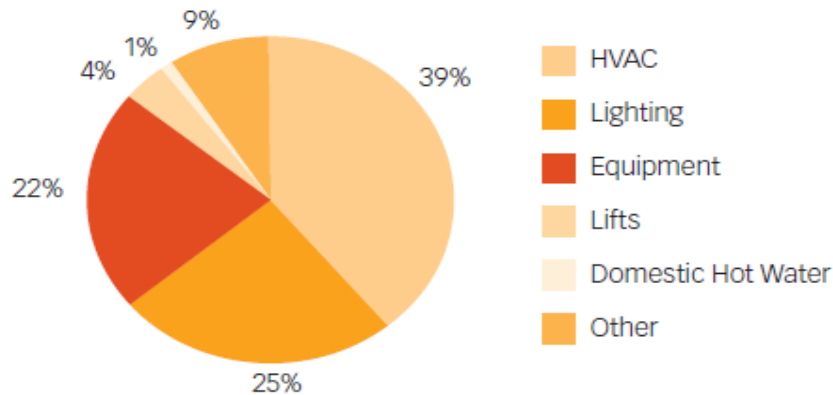


Fig1: Energy usage of various systems in a building

- A big bunch of companies are already into the market selling various items used in our system such as **Bry-Air chillers, F-air conditioning, Wavin, Uponor**, etc.



Fig2: Few leading brand names in the field of passive cooling

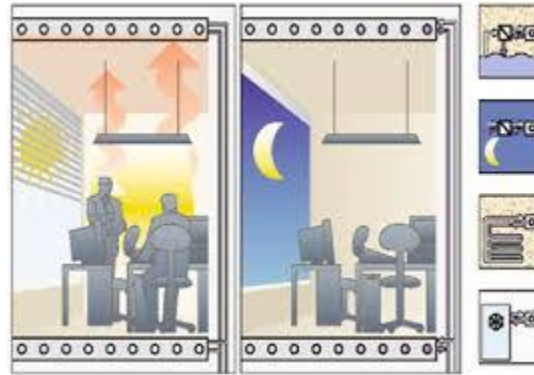
- Use of renewable energies is promoted by various government policies and schemes. Moreover, the acceptance of new technology in local markets is very essential for rapid development of country like India.

A brief description about our flagship techniques designed-

#### 1. TABS (Thermally active building systems):

Thermo-active building systems (TABS) contribute decisively to meet the new energy requirements and offer new exciting possibilities for the

building design. The term “thermo-active structures” is used because the building structure is actively influenced inside by cooling/heating, while the heat and cooling accumulating capacity of the concrete is utilized. This technique ensures an energy-efficient building with pleasant indoor climate, since it acts as floor heating in the winter and cooling ceiling in summer. Dynamic activation of thermal mass is an optimal solution used in many countries for many years.



## 2. Solar VARS:

The system combines the refrigeration cycle and power generation cycle using solar thermal as source. The current dual effect VAR system has two generators, to meet the choice of only power/only cooling/both power and cooling. The balance mass goes to the second generator for refrigeration and it is single effect refrigeration. Thus the system cooling and power have been integrated to get two benefits from a single system.

