

डी. थारा, आई.एस.
संयुक्त सचिव
D. Thara, I.A.S.
Joint Secretary



सत्यमेव जयते

भारत सरकार
आवासन और शहरी कार्य मंत्रालय
GOVERNMENT OF INDIA
MINISTRY OF HOUSING AND URBAN AFFAIRS



D.O. No. K-14011/28/2021-AMRUT-IIA
Dated: 27th October, 2021

Dear Sir/ Madam,

Ministry of Environment, Forest & Climate Change has released the *India Cooling Action Plan (ICAP)* in March, 2019 as a roadmap for sustainable cooling in India. The ICAP adopts a multi-stakeholder, multi-sectoral approach to "synergize actions for addressing the cooling demand across all sectors". ICAP prioritizes energy efficient and climate-friendly cooling in appliances, buildings, cold chain, and transport sectors." Some of the co-benefits identified by the ICAP are as follows:

- i. Thermal comfort for all with specific focus on cooling in affordable housing projects.
- ii. Sustainable cooling with low emissions from cooling.
- iii. Augment domestic manufacturing of air conditioners and related cooling equipment.
- iv. Robust R&D on alternative cooling technologies.

The copy of Indian Cooling Action Plan can be downloaded from following link:
<http://ozonecell.nic.in/wp-content/uploads/2019/03/INDIA-COOLING-ACTION-PLAN-e-circulation-version080319.pdf>

2. The important recommendations pertaining to energy efficient buildings are:
 - Enforcing efficient building envelope guidelines in construction of commercial and residential building.
 - Wider adoption of Energy Conservation Building Code (ECBC) and Energy Conservation Building Code - Residential (ECBC - R) in various infrastructure schemes of Government.
 - Awareness campaign to sensitize both the construction community and users regarding efficient buildings.
 - Retrofitting and retro commissioning of existing buildings to reduce cooling requirement and energy consumption.
3. In this regard, details of some of the best practices in field of energy conservation and renewable energy sources are attached with this letter. Whereas rooftop solar panels may be used for meeting the energy demands of the buildings, other structures for solar panels such as solar trees can be used in parks or vacant land for energy generation and also for energy needs of various utilities such as Water Treatment Plants, pump houses, Sewerage Treatment Plants etc.
4. In view of the importance of the matter for energy conservation, I would request you to kindly instruct concerned officials to take special care for energy conservation features at planning stage for new buildings. I would also request you to kindly instruct the concerned to explore the possibility for retrofitting the existing buildings to reduce the cooling requirements and energy consumption. Efforts may be made to meet the energy demands of the utilities such as Water Treatment Plants, pump houses, Sewerage Treatment Plants etc through renewable energy sources.

Warm regards,

(D. Thara)

Secretary, All Central Ministries and Departments (As per list attached)
Principal Secretary/ Secretary (UD), All States/ UTs (As per list attached)

Innovations in Energy Conservation

Energy efficient elements of office buildings
for MoD at KG Marg & Africa Avenue, New Delhi



AFRICA AVENUE



KG MARG

Features

- Grid connected solar power plant (520 KWp capacity)
- All lighting with LED
- Street lighting with solar power (minimum 10 percent of steel lighting)
- Occupancy sensors to control lighting in every cabins & Washrooms
- Cassette type indoor unit with occupancy sensor and temperature control in air conditioning system.
- Central control (BMS) for air conditioning system

Savings resulting from solar energy


Building	KWp	Tentative MWh/Year	Saving in Electricity Cost in Rs. Lakh @ Rs. 8.5/Unit
Africa Avenue			
Block- A	95	148.8	12.6
Block-B	70	114.2	9.7
Block-C	45	73.4	6.2
Block-D	70	114.2	9.7
Total	280	450.6	38.3
KG Marg			
Block-A	140	237.5	20.2
Block-B	70	114.2	9.7
Block-C	30	48.9	4.2
Total	240	400.7	34.1
Grand Total	520	851.3	72.4 Lakh
Tentative Yearly Maintenance Cost			Rs. 2.4 Lakh
Tentative Yearly Net Saving			Rs. 70 Lakh

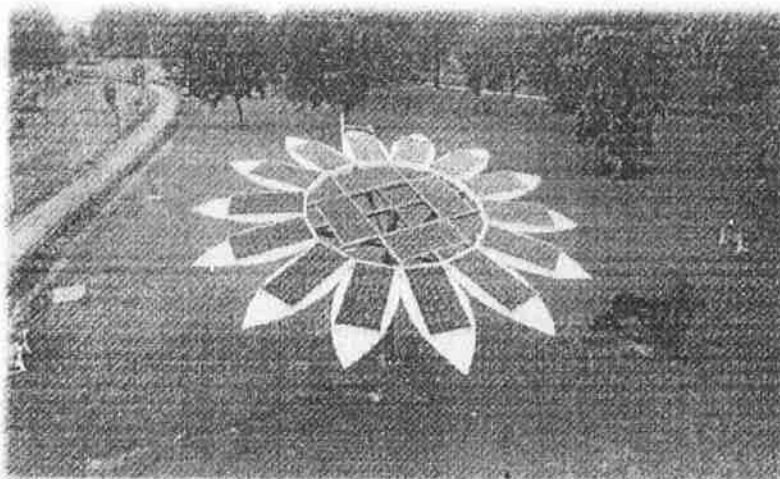
Energy savings through Terracotta Ventilated Facades

- Reduces solar heat gain of building from the face as a result of thermal insulation, reducing energy requirements for cooling.
- Energy consumption for air-conditioning & heating reduces by 30%.

Innovations in Renewable Energy

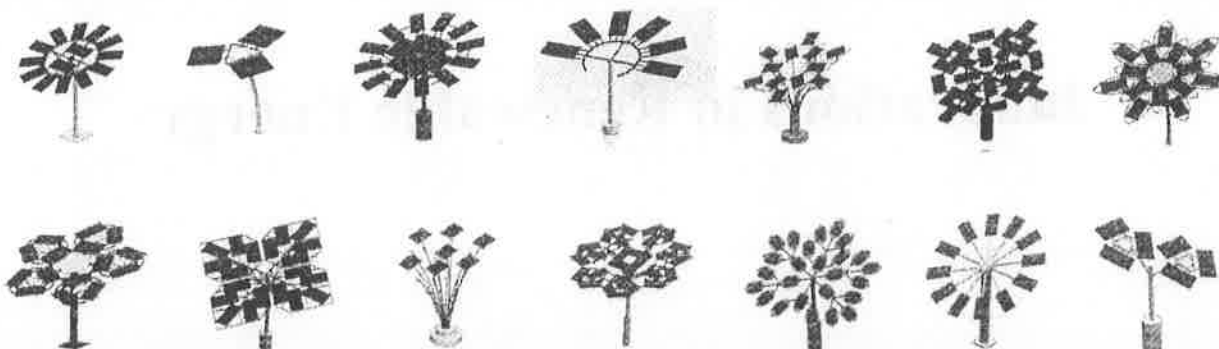
Solar tree


Solar Tracking
(15% more generation)

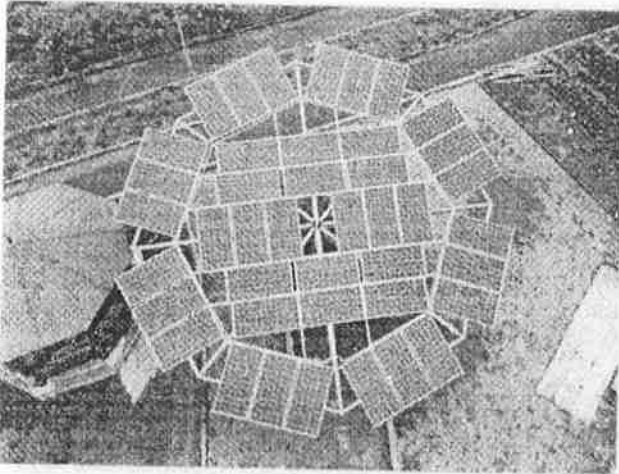



Direct Visibility to
Solar Energy

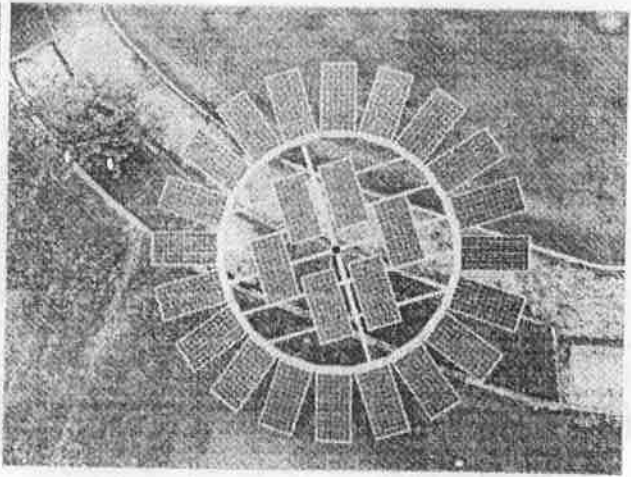
DESIGNS



Installations at Vapi Chala Lake, Vapi, Gujarat

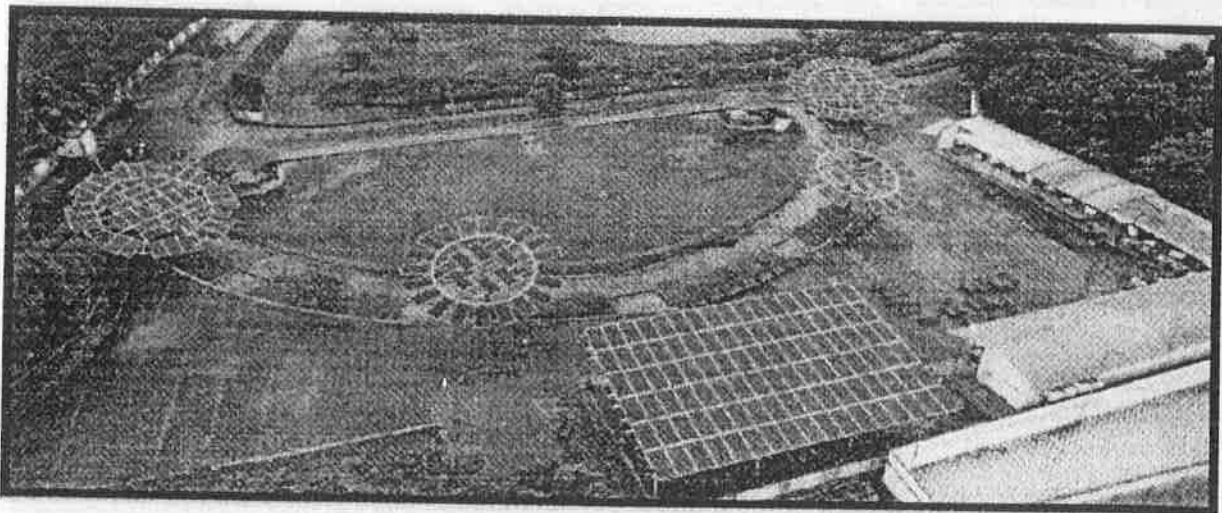


World's Highest Capacity Solar Tree : 16 Kw



World's Third Highest Capacity Solar Tree : 11 Kw

Vapi Chala Lake, Vapi, Gujarat



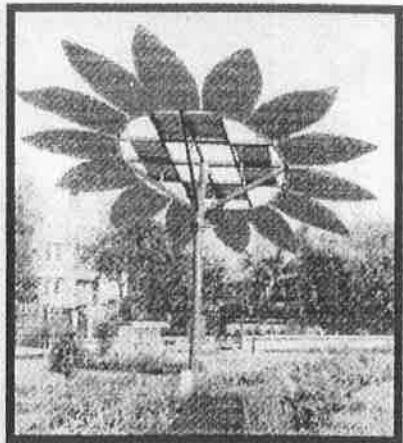
Solar Installation at Sector 1 Lake, Gandhinagar



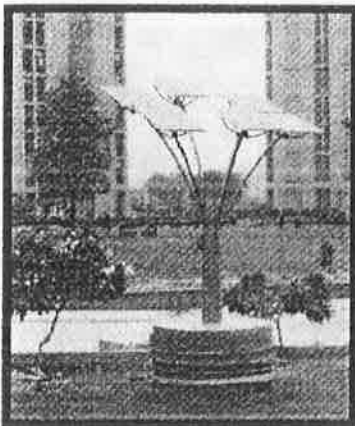
Solar Installation at Shatrunda Village, Kheda for Safe Drinking Water



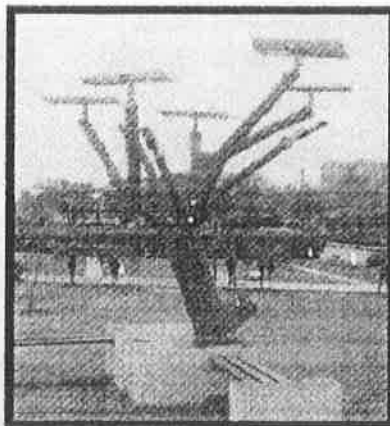
Solar Tree at Sector 8 Garden, Gandhinagar



Solar Tree Installed at Pandit Deendayal Petroleum University



Solar Installation at Ahmedabad Riverfront



Solar Tree Installation at Sarita Udhyan, Gandhinagar

