

REPORT OF THE TWO DAYS TRAINING PROGRAMME ORGANISED ON “INNOVATIVE HOUSING TECHNOLOGY” BY APPROPRIATE TECHNOLOGY CENTRE, STATE COUNCIL FOR SCIENCE TECHNOLOGY AND ENVIRONMENT, H.P, GOVT. POLYTECHNIC, SUNDERNAGAR ON 18-19 FEBRUARY, 2016 TO THE JUNIOR ENGINEERS/TECHNICAL ASSISTANTS OF DEVELOPMENT BLOCKS OF THE STATE AT ATC, SUNDERNAGAR.

The Appropriate Technology Centre, State Council for Science, Technology and Environment, H.P organized a two days Innovative Housing Technology Training Programme on 18-19 February, 2016 at Govt. Polytechnic, Sundernagar Distt. Mandi, H.P for implementation of Solar Passive Housing Technology, Earthquake Technologies and also Rain Water Harvesting Technologies in the State. About Thirty One Junior Engineers/ Technical Assistants from different Rural Development Blocks namely Balh, Gohar, Sadar(Mandi),Rampur, Theog, Nagrota Bagwan, Nadaun, Sundernagar, Chopal, Mashobra & Sarkaghat of the State participated in this training programme Annexure-1.

The Participants were registered at the venue of the training programme i.e. Govt. Polytechnic, Sundernagar by Mrs. Neena Sharma, DEO, ATC, Sundernagar on 18.02.2016 from 10am to 11am. The two days training programme was organised as per the technical schedule prepared by the Appropriate Technology Centre, State Council for Science, Technology and Environment, H.P, Govt. Polytechnic, Sundernagar(Annexure-II).



The programme started with the welcome address of Ar. Meena Guleria, Head Continua Education Govt. Polytechnic Sundernagar and Er. Chander Shekhar , HOD, Mechanical Govt. Polytechnic, Sundernagar who formally welcomed the participants followed by individual introductions by the participants explaining where they hailed from and what kind of work they specialized in. Ar. Guleria informed the participants that the State Council is implementing different Technologies like Solar Passive Housing Technology, Earthquake Resistant

Technology and Rain water harvesting in the State. The State Council initiated Solar Passive Housing Technologies in 1994 and policy decision has been made by the Govt. of H.P that construction of buildings/houses through Solar Passive Housing Technology is compulsory for construction of Govt./Semi-Govt. buildings above 2000 msl. in the State.

Er. Chander Shekhar, HOD, Mechanical Govt. Polytechnic, Sundernagar candidly admitted that the technology has not percolated in the field inspite the policy initiatives taken by the Govt. of H.P. he further said that there is a need to bridge the gap between policy, design and execution at the site for implementation of this programme in the State. The training material & literature was distributed among the participants.

18.02.2016

Technical Session-I

Er.Chander Shekhar,HOD, Mechanical Govt. Polytechnic, Sundernagar delivered lecture to the participants about “Rain Water Harvesting”. He explained about the importance of rain and collection/harvesting of Rain water. The process of implementation of rainwater harvesting was elaborated upon and he taught the method of calculation of amount of incident rainfall which is needed to ascertain the size of water storage tanks to be built. He also introduced them to various types of water filters that use local materials. Questions were asked on how to maintain such filters, their cost and feasibility. Ways to retain water in the water Table through various types of wells/ponds etc. were also elaborated



A visit of the participants was made to the Jr. Nehru Govt. Engineering College, Sundernagar where various technologies namely Sun Space, Solar Passive Housing Technology, Tunnel type Green House, Trombe Wall, Hand Maize Sheller and Solar Dryer etc. were demonstrated to the participants by Sh. Kalit Bhardwaj, STA, ATC, Sundernagar. He briefly explained about the basics and intricacies involved in the use of such technologies for comfortable living in the houses round the year in construction application of these components from design preparation to construction of new buildings/houses and already built houses by adding solar passive features

to the participants. Participants took keen interest and were convinced to apply such technologies during construction of buildings/houses at their Blocks in future



19.02.2016

Technical Session-II

During the Technical Session-II a lecture was delivered by Ar. Gopal Sharma, HOD Architecture, Govt. Polytechnic, Sundernagar on “Low Cost Housing Technology”. He explained about the orientation of building, energy conservation by educating the user and economy in the material. If the building is oriented facing long edges toward East West then maximum surface area will be exposed to Sun in winter which is required and in the design maximum Window if possible should be installed towards South. Design should be prepared according to temperature and humidity. All the construction material has to be made cost effective and the material to be used for construction eliminating doors and windows frames or use Ferro-cement door and window frames including Shutters



Thereafter, Er. Kalit Bhardwaj, STA, ATC, Sundernagar delivered a lecture on “Use of Solar Tools like Sun Path and Sun Chart”. The basics of solar passive design were elaborated and explained to the JEs/TAs. On being asked which orientation of the building receives maximum

Sun, the participants had their own opinions. They were shown through diagrams and simple explanation of how the Sun behaves during various seasons in the State..He elaborated and explained the basics theoretically and through presentations. Discussion was held for clarifications of the points raised by the JEs/TAs



19.02.2016
Technical Session-III

Sh. Hansraj, Lecturer, Architecture, Govt. Polytechnic, Sundernagar delivered lecture to the participants about “Earthquake Resistant Housing Construction in the State. He highlighted the participants about the impact of disaster occurring through earthquakes. He informed the participants that the State of H.P lies in the sensitive zone s of earthquakes and reminded them of the impacts of the disasters accrued during the past in the State and stressed the need for construction of earthquake resistant houses in the State in future by them. He explained and elaborated about the Construction details of Earthquake Resistant Housing, what happens to a building when a earthquake shakes it and how the unnatural pressures exerted upon by incidences of tremors during earthquakes in such situations can be averted / dealt effectively and efficiently by us. With a number of diagrams and examples, he explained them the do’s and don’ts in building Earthquake Resistant Structures about the building Design, Construction and its importance.



Technical Session-IV

The two days training Programme came to an end at 5pm. Ar. Meena Guleria, Head Continue Education Govt. Polytechnic, Sundernagar was the Chief Guest at the closing session While addressing the participants she stressed the need for updating knowledge and skill in implementation of solar passive technology in construction of buildings/ houses by the JEs/TAs.

She said that valuable inputs given to the participants by the Resource Persons during the two days training workshop for understanding and learning the concepts / fundamentals for implementation of Solar Passive Technologies required to be adopted on priority basis by the technical manpower in the State. She distributed Certificates to the participants and thanked the participants for participation in the training and hoped that the initiative taken by the Appropriate Technology Centre, Govt. Polytechnic, Sundernagar will prove fruitful in implementation of Solar Passive Housing construction Technology for comfortable living of the mankind in future in the State.





List of Junior Engineers and Technical Assistants During Two days training Programme on “INNOVATIVE HOUSING TECHNOLOGY” at ATC, Sundernagar on 18-19 February, 2016.

S. No.	Name of the Participant	Father name	Designation	Address
1.	Sh. Suraj Mani	Sh. Kanauru Ram	JE	Block Development Office, Development Block Sarkaghat Distt. Mandi
2.	Sh. Abhay Kumar	Sh. Krishan Chand	JE	Block Development Office, Development Block Balh Distt. Mandi
3.	Sh. Hoshiyar Singh	Sh. Man Singh	JE	Block Development Office, Development Block Balh Distt. Mandi
4.	Sh. Kashmir Singh	Sh. Rattan Singh	JE	Block Development Office, Development Block Balh Distt. Mandi
5.	Sh. Baldev Ram	Sh. Chet Ram	TA	Block Development Office, Development Block Balh Distt. Mandi
6.	Sh. Chet Raj	Sh. Piar Chand	TA	Block Development Office, Development Block Nagrota Bagwan Distt. Kangra
7.	Sh. Vishal Bhatia	Sh. Ram Chand Bhatia	TA	Block Development Office, Development Block Nagrota Bagwan Distt. Kangra
8.	Sh. Banvir Singh	Sh. Parkash Singh	TA	Block Development Office, Development Block Nagrota Bagwan Distt. Kangra
9.	Sh. Dinesh Chand	Sh. Jagar Natha Sharma	TA	Block Development Office, Development Block Nagrota Bagwan Distt.
10.	Sh. Vinod Kumar	Sh. Natha Singh	TA	Block Development Office, Development Block Gopalpur Distt. Mandi
11.	Sh. Dharam Singh	Sh. Bishan Dass	JE	Block Development Office, Development Block Gopalpur Distt. Mandi
12.	Sh. Bhupendar Kumar	Sh. Mast Ram	TA	Block Development Office, Development Block Gopalpur Distt. Mandi

13.	Sh.Paras Ram	Sh.Tikam Ram	JE	Block Development Office, Development Block Sadar(Mandi) Distt. Mandi
14.	Sh. Rajesh Kumar	Sh.Dila Ram	JE	Block Development Office, Development Block Gohar Distt. Mandi
15.	Sh. Deva Nand	Sh.Deer Chand Sharma	TA	Block Development Office, Development Block Gohar Distt. Mandi
16.	Sh. Naresh Kumar	Sh. Jagat Ram	TA	Block Development Office, Development Block Sadar(Mandi) Distt. Mandi
17.	Sh. Rakesh Chauhan	Sh. Rama Nand Chauhan	TA	Block Development Office, Development Block Chopal Distt. Shimla
18.	Sh.Pankaj Sharma	Sh. Upender Sharma	TA	Block Development Office, Development Block Chopal Distt. Shimla
19.	Sh. Anil Ranta	Sh. Mohan Lal Ranta	JE	Block Development Office, Development Block Theog Distt. Shimla
20.	Sh. Suresh Kumar	Sh. Daulat Ram	JE	Block Development Office, Development Block Chopal Distt. Shimla
21.	Sh. Garib Dass	Sh.Santosh Raj	TA	Block Development Office, Development Block Nadaun Distt. Hamirpur
22.	Sh. Ashok Kumar	Sh.Prem Chand	TA	Block Development Office, Development Block Nadaun Distt. Hamirpur
23.	Sh. Geeta Ram Sharma	Sh.Bhumi Dev Sharma	TA	Block Development Office, Development Block Rampur Distt. Shimla
24.	Sh. Dharam Dev	Sh.Shawanu Ram	TA	Block Development Office, Development Block Rampur Distt. Shimla
25.	Sh.Surender Verma	Sh.Hira Singh	TA	Block Development Office, Development Block Theog Distt. Shimla
26.	Sh. Rajender Sharma	Sh. Shob Ram	TA	Block Development Office, Development Block Theog Distt. Shimla
27.	Sh. Hemant Kumar	Sh. Chuni Lal	JE	Block Development Office, Development Block Mashobra Distt. Shimla
28.	Sh. Kishore Sharma	Sh. B.L. Sharma	JE	Block Development Office, Development Block Mashobra Distt. Shimla
29.	Sh.Rajesh Sharma	Sh. K.L. Sharma	TA	Block Development Office, Development Block Mashobra Distt. Shimla
30.	Sh. Rajender Pal Sharma	Sh. R. L. Sharma	TA	Block Development Office, Development Block Gopalpur Distt. Mandi
31.	Sh. Karam Singh	Sh. Ram Singh	TA	Block Development Office, Development Block Sadar Mandi Distt. Mandi