

Report of Three Days Training Program on “Innovative Housing Technologies” to masons/rural artisans organized by Appropriate Technology Centre, Sundernagar from 19-21 November, 2015.

Appropriate Technology Centre, State Council for Science Technology & Environment, H.P, Govt. Polytechnic, Sundernagar organized a three days training to masons/ rural artisans of the Development Blocks namely: Kalpa, Amb, Nadoun, Karsog, Ghumarwin & Dharpur of the State on “Innovative Housing Technology” from 19-21 November, 2015 at Appropriate Technology Centre, Sundernagar.

The participants were registered at the venue of the training programme i.e. Govt. Polytechnic College, Sundernagar by Mrs. Neena Sharma, DEO, ATC, Sundernagar on 19-11-2015 from 10am to 11am. The three days training was organized as per the technical schedule (copy attached) prepared for organization of the training by the ATC. The participants were distributed the literature (in Hindi) on innovative technologies by the ATC.

At the outset of the training programme the participants were welcomed by Ar. Meena Guleria, HOD, Architecture Govt. Polytechnic, Sundernagar on behalf of the State Council Science, Technology & Environment, H.P and briefed the masons / rural artisans about the purpose of the three days training programme.



19.11.2015 Technical Session-I

The Technical session-I, was started with a lecture and presentation delivered by Sh. Prem Lal Thakur, Assistant Architect, State Council for Science Technology & Environment, H.P. Shimla on “Solar Passive Housing/Building Construction” to the participants. He highlighted the advantages of solar passive housing construction in the hilly State not only in H.P but all over the north eastern and western states of the country for comfortable living throughout the year. He elaborated the various aspects related to the construction detail of Solar passive housing/buildings namely orientation of Building, Sun path Planning of Building, Trombe Wall, Solar Wall, Sky Lights for Winter Solar Gain, Solarium, Sun Space, Insulation in False Ceiling, Cross Ventilation etc. to the participants.



A visit of the participants was made at the Demonstration Centre where various technologies namely Thermosyphonic Air Heating Pannel, Trombe Wall, Solar Water Heater, Hand maize Sheller, Greenhouse etc. were shown and demonstrated to the participants by Sh. Kalit Bhardwaj, STA, Appropriate Technology Centre.



20.11.2015
Technical Session-II

In the 2nd technical session, a lecture was delivered by Er. Chander Shekhar, HOD (Mechanical), Govt. Polytechnic, Sundernagar on the Rainwater Harvesting Technologies. He informed the participants that many countries have no water sources, whereas India is having source of water in the form of rivers, ponds, lakes, wells and Khaitri etc. The main source of water is through rain/snow. Rainwater in the form of rain / snow can be stored in rainwater harvesting tanks / ponds / reservoirs and can be used for drinking purpose by filtering and for irrigation agriculture / horticulture fields during the lean periods by the farming communities. He gave presentation about a Rain Water Harvesting technology to the participants. Different aspects related to construction of rainwater harvesting structures were elaborated to the participants by the Resource Person for their thorough understanding the basics connected with the theoretical and practical aspects related with rainwater harvesting technology.



Technical Session-III

On 20.11.2015 the 3RD technical session started with the lecture of Sh. Kalit Bhardwaj, STA, ATC, Sundernagar on “Solar Passive Housing Technologies”. He began with an introduction about the Appropriate Technology Centre, Sundernagar and the relevance of technologies used in building activity. He showcased work already done by the ATC, Sundernagar in the form of Greenhouses and poly-houses constructed all over Himachal Pradesh in various parts with various materials and scales utilized for production of crops by providing thermally controlled environments by the farmers.

The basics of solar passive design were explained to the participating masons / rural artisans. On being asked which orientation of the building receives maximum sun, the masons incorrectly responded incorrectly “east”. The view was quickly corrected and the path of the Sun in the wet and hilly regions of Himachal Pradesh was shown to them through diagrams and simple explanations of how the Sun behaves during various seasons in the hilly State.



Technical Session-IV

Practical session was conducted for the participants under the supervision of Sh. Tajender Kumar, Master Trainer, State Council for Science Technology and Environment, H.P. Ferrocement Blocks and Flower pots were fabricated by the participants.



Practical session was conducted for the participants under the supervision of Sh. Tajender Kumar, Master Trainer, State Council for Science Technology and Environment, H.P. Ferrocement Blocks and Flower pots were fabricated by the participants.



21.10.2015

Technical Session-V

On 21.10.2015 the technical session started with a lecture by Ar. Hans Raj, Lecturer, Architecture, Govt. Polytechnic, Sundernagar on “Earthquake Resistant Technology”. He highlighted the participants about the 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.



21.11.2015
Technical Session-VI

Sh. Kalit Bhardwaj, STA, ATC, Sundernagar delivered a lecture to the masons about “Conversion of Pine needles biomass into Briquettes” and demonstration for conversion was given to the participants by Sh. Tajender Kumar, Master Trainer of Appropriate Technology Centre State Council for Science Technology and Environment, H.P at the venue to the Masons/artisans. Biomass of Pine needles was converted into Briquettes and some briquettes prepared by the ATC previously were burnt to show the efficiency of the briquettes. The participants prepared the briquettes themselves and showed great keen and interest for organization of the training workshop to the rural people at their Panchayats in future



A feedback session was conducted and Performa was distributed among the participants. Closing ceremony was organized at the end of the training on 21.11.2015. Ar. Meena Guleria, HOD, Govt. Polytechnic, , Sundernagar, District Mandi, H.P was the Chief Guest at the occasion. While addressing the participants She stressed the need for application of innovative technologies through active participation of the Masons/Artisans in the State. He distributed the Certificates to the participating masons/ rural artisans.



LIST OF MASONS DURING THREE DAYS TRAINING PROGRAMME ON “INNOVATIVE HOUSING TECHNOLOGY” AT APPROPRIATE TECHNOLOGY CENTRE, SUNDERNAGAR ON 19-21 NOVEMBER, 2015.

Sr. No.	Name	Father_Name	Address
1.	Sh. Manoj Kumar	Sh.Gulab Chand	V.P.O. & Panchayat Sapani Block Kalpa Tehsil Sangla Distt. Kinnaur
2.	Sh.Shivdhan	Sh. Bhagt Ram	V.P.O. & Panchayat Sapani Block Kalpa Tehsil Sangla Distt. Kinnaur
3.	Sh. Balinder	Sh. Gurbachan Singh	Vill. Ladoli P.O. Panjoa Ladoli Panchayat Ladoli Block & Tehsil Amb Distt. Una
4.	Sh. Nitish Kumar	Sh. Parmjeet Singh	Vill. Ladoli P.O. Panjoa Ladoli Panchayat Ladoli Block & Tehsil Amb Distt. Una
5.	Sh. Rakesh Kumar	Sh. Tulsi Ram	Vill Jasai P.O. Jansuh Panchayat Jasai Block & Tehsil Nadoun Distt. Hamirpur
6.	Sh. Garib Dass	Sh. Santosh Raj	Vill. Damoti P.O. & Panchayat Rail Block & Tehsil Nadoun Distt. Hamirpur
7.	Sh. Sanjiv Kumar	Sh. Brij Lal	Vill. Mandu P.O. Lahad Panchayat Phaste Block & Tehsil Nadoun Distt. Hamirpur
8.	Sh. Ashok Kumar	Sh. Prem Chand	Vill. Chalagarh P.O. & Panchayat Dangari Block & Tehsil Nadoun Distt. Hamirpur
9.	Sh. Ajay Kumar	Sh. Jagdev Singh	Vill. Kotalu P.O & Panchayat Kotalu Brahmna Block & Tehsil Ghumarwin Distt. Bilaspur
10.	Sh. Pankaj Kumar	Sh. Roshan Lal	Vill. Kotalu P.O & Panchayat Kotalu Brahmna Block & Tehsil Ghumarwin Distt. Bilaspur
11.	Sh.Vishal Kumar	Sh. Lal Singh	Vill. Kotalu P.O & Panchayat Kotalu Brahmna Block & Tehsil Ghumarwin Distt. Bilaspur
12.	Sh. Rajat Kumar	Sh. Madan Singh	Vill. Kotalu P.O & Panchayat Kotalu Brahmna Block & Tehsil Ghumarwin Distt. Bilaspur
13.	Sh. Ravi Kumar	Sh. Dhyan Singh	Vill. Kotalu P.O & Panchayat Kotalu Brahmna Block & Tehsil Ghumarwin Distt. Bilaspur
14.	Sh. Anant Ram	Sh. Katku Ram	Vill. Sanarli P.O. Banthal Panchayat Sanarli Block & Tehsil Karsog Distt. Mandi
15.	Sh. Bishan Dass	Sh. Guhia ram	Vill. Kutti P.O. Karsog Panchayat & Block Karsog Distt. Mandi
16.	Sh. Amka Ram	Sh. Trahdu Ram	Vill Chock P.O. Brarta Panchayat Chowk Block Dharpur Tehsil Sarkaghat Distt. Mandi
17.	Sh. Sunny Kumar	Shiv Dyal	Vill. Jajar Kukein P.O. Brarta Panchayat Chowk Block Dharpur Tehsil Sarkaghat Distt. Mandi
18.	Sh. Vinya Kumar	Sh. Ratan Chand	Vill. Jajar Kukein P.O. Brarta Panchayat Chowk Block Dharpur Tehsil Sarkaghat Distt. Mandi
19.	Sh. Devi Singh	Sh. Tota Ram	Vill Chock P.O. Brarta Panchayat Chowk Block Dharpur Tehsil Sarkaghat Distt. Mandi
20.	Sh. Jivan Kumar	Sh. Tara Chand	Vill Chock P.O. Brarta Panchayat Chowk Block Dharpur Tehsil Sarkaghat Distt. Mandi
21.	Sh. Sunil Kumar	Sh. Khem Chand	Vill. & P.O. Brarta Panchayat Chowk Block Dharpur Tehsil Sarkaghat Distt. Mandi

WORK SCHEDULE OF THREE DAYS TRAINING TO RURAL MASONS ON “INNOVATIVE HOUSING TECHNOLOGIES”

DATE : 19-21 NOVEMBER,2015

VENUE : APPROPRIATE TECHNOLOGY CENTRE, GOVT. POLYTECHNIC SUNDERNAGAR, DISTT. MANDI.
ORGANIZED BY: APPROPRIATE TECHNOLOGY CENTRE, STATE COUNCIL FOR SCIENCE TECHNOLOGY & ENVIRONMENT,
GOVT. POLYTECHNIC, SUNDERNAGAR.

Date/Day	10:00 to 11:30 am (TECHNICAL SESSIONS)	11:30 to 1.00 pm. (TECHNICAL SESSIONS)	2:00 TO 5:30 (PRACTICAL SESSION)
19 th Oct., 2015 Thursday	Registration of Participants (By: Neena Sharma) Inauguration of Training (By Ar. Meena Guleria)	Lecture on Solar Passive Housing, Building Construction details of Solar Passive Features. By: Arch. Prem Lal Thakur	Visit to Demonstration Centre & Ferro-cement systems Casting of Flowers Pots. Demonstration of Low Cost Housing techniques like Frameless Windows, C.C. Blocks and Waste Water Disposal System with Soak-pit. BY: Er. Kalit Bhardwaj
20 th Oct, 2015 Friday	Lecture on Rain-Water Harvesting Technology. By: Er. Chander Shekhar	Lecture on latest trends & practices in construction. By: Sh. Kalit Bhardwaj	Construction of rat trap bond masonry. Laying of earthquake resistant bands with corner vertical bars in various types of masonry Rat-trap bond / cavity wall demo using block model. By: Tajender Kumar
21 st Oct.. 2015 Saturday	Lecture on Earthquake Resistant Housing Technology By: Arch. Hans raj	Lecture on Use and Banifits of Solar Passive Technologies. By: Sh. Kalit Bhardwaj	Casting of Solid Concrete block and stone filled concrete blocks. Feed Back from Participants. By: Tajender Kumar Closing ceremony Certificate Distribution By: Ar. Meena Guleria (HOD)

Tea breaks at 11:30 to 11:45 AM & 3:15 to 3:30PM. Lunch break at 1:00 to 2:00 PM.

Co-ordinator ,
ATC, Sundernagar