

Report of Three Days Training Program on “Innovative Housing Technologies” to masons/rural artisans organized at Govt. Polytechnic, Sundernagar by Appropriate Technology Centre, Sundernagar from 5-7 August, 2014

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 Block namely; Balh,Karsog and Baijnath of the State on “Innovative Housing Technology” from August 5-7,2014 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 05-08-2014 from 10am to 11am.The three days training was organized as per the technical schedule prepared for organization of the training by the ATC. The participants were distributed the literature on innovative technologies by the ATC.



At the outset of the training programme the participants were welcomed by Sh. Kalit Bhardwaj, STA, ATC, 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.

05.08.2014

Technical Session-I



Lecture delivered by Sh. Prem Lal Thakur

The Technical session-I, was started with a lecture and presentation was 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 Effect of Sun Radiation on Building, 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.

Technical Session –II



Lecture delivered by Er. Chander Shekhar, HOD (Mechanical)

In the 2nd technical session. a lecture of 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 Himachal Pradesh 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 stored rainwater harvesting tanks / ponds / reservoirs and use it drinking purpose by filtering and for irrigation agriculture / horticulture fields during the lean periods by the farming communities in the State. 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.

06.08.2014

Technical Session-III



Lecture delivered by Arch. Hans Raj Lecturer

On 06.08.2014 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.

Thereafter, a lecture along with presentation on the topic “Construction details in buildings, calculation of material etc.” was delivered by Sh. Prem Lal Thakur, Assistant Architect, State Council for Science Technology & Environment, H.P, Shimla to the participants. He elaborated the construction details in buildings, calculation of materials like iron, sand and bricks etc. Discussion was held with the participants and various issues raised were clarified on the spot to the participants.

Technical Session-IV



Practical session by the Masosns

Practical session was conducted for the participants under the supervision of Sh. Tajender Kumar, Master Trainer and Sh. Prem Lal Thakur, Assistant Architect, State Council for Science Technology and Environment, H.P. Ferro-cement Blocks and Flower pots were fabricated by the participants.

07.08.2014

Technical Session-V



Lecture delivred by Arch. Gopal Sharma HOD Architecture

During the Technical Session-VI 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.



Practical session

On 07.08.2014 the 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 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.

A visit of the participants was made 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.



Technologies Demonstrated at Building Centre

Technical Session-VI



Lecture delivered by Er. Kalit Bhardwaj



Demonstrat Pine Needle Biomass

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.

During the Technical Session-VI 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.



Closing ceremony



certificate distributed

A feedback session was conducted and Performa was distributed among the participants. Closing ceremony was organized at the end of the training on 07.08.2014 Principal/Coordinator, Govt. Polytechnic, Sundernagar, District Mandi, H.P was the Chief Guest at the occasion. While addressing the participants He 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 and thanks to visit the Training.

**REGISTRATION MASONS DURING THREE DAYS TRAINING PROGRAMME ON
“INNOVATIVE HOUSING TECHNOLOGY” AT APPROPRIATE TECHNOLOGY CENTRE,
SUNDERNAGAR ON 5-7 AUGUST,2014.**

S. No.	Name	Father name	Address
1.	Sh. Bhagirath	Sh. Kahan Singh	Vill Mundroo, P.O. & Panchayat Troh Block Balh Tahsil Balh Distt. Mandi
2.	Sh. Padam Singh	Sh. Sant Ram	Vill. Kasarla P.O. Ratti Panchayat Kasarla Block Balh Tahsil Balh Distt. Mandi
3.	Sh. Achharu Ram	Sh. Prem lal	Vill. Malther P.O. Ratti Block Balh Tehsil Balh Distt. Mandi Panchayat Malther .
4.	Sh. Ramesh Kumar	Sh. Uttam Singh	Vill. Kasarla P.O. Ratti Block Balh Panchayat Kasarla Tehsil Balh Panchayat Kasarla Tehsil Balh Distt. Mandi.
5.	Sh. Basant singh	Sh. Todar Ram	VPO Sainji Block Balh Panchayat Shali Tehsil Balh Distt. Mandi
6.	Sh. Ramesh Kumar	Sh. Madan Singh	VPO Sainji Block Balh Panchayat Shali Tehsil Balh Distt. Mandi
7.	Sh. Satish Kumar	Sh. Nand Lal	Vill. Kandha , P.O. Pangna Tehsil and Block Karsog Panchayat Sorta Distt. Mandi
8.	Sh. Dinesh Kumar	Sh. Jalam Ram	Vill. Kandha , P.O. Pangna Tehsil and Block Karsog Panchayat Sorta Distt. Mandi
9.	Sh. Narotam Ram	Sh. Masantu Ram	Vill. Tanda P.O. Balt Panchayat Soira Tehsil Balh Distt. Mandi.
10.	Sh. Amar Singh	Sh. Shavratu	Vill. Malther P.O. Ratti Panchayat Malther , Tehsil Balh Distt. Mandi.
11.	Sh. Mohan Lal	Sh. Gohari Lal	Vill. Snarli P.O. Bainthal Tahsil Karsog Panchayat Snarli Block Karsog Distt. Mandi.
12.	Sh. Anant Ram	Sh. Katku Ram	Vill. Snarli P.O. Bainthal Tahsil Karsog Panchayat Snarli Block Karsog Distt. Mandi.
13.	Sh. Sant ram	Sh. Dagi Ram	VPO Bainthal Tehsil karsog Panchayat Bainthal Block Karsog Distt. Mandi
14.	Sh. Moti Ram	Sh. Bhadru Ram	VPO Bainthal Tehsil Karsog Panchayat Bainthal Block Karsog Distt. Mandi
15.	Sh. Kuldeep Kumar	Sh. Prem Lal	VPO Dhanag Tehsil Baijnath Panchayat Dhanag Block Baijnath Distt. Kangra
16.	Sh. Raj Kumar	Sh. Pritam Chand	VPO Dhanag Tehsil Baijnath Panchayat Dhanag Block Baijnath Distt. Kangra
17.	Sh. Balak Ram	Sh. Laturya	Vill. kandha P.O Jugahn, Tehsil & Block Sundernagar Distt. Mandi Panchayat Chhatra