



# Annual Report 2018-2019

Hunnarshala Foundation for  
Building Technology



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# Karigarshala

“The highest education is that which does not merely give us information but makes our life in harmony with all existence.”



This year 28 students had joined Karigarshala, 15 students for carpentry and 13 students for walling system course. In the beginning of the course, all the students participated to understand about carpentry, walling system, plumbing and electrical for a month. Thereafter they select the course of their liking i.e. either carpentry or walling system.

This year students from the Center for Learning Bengaluru came to Karigarshala for a week and all the students of Karigarshala went to Bengaluru to participate in a “mela” organized by Centre for Learning. The students got an opportunity to interact with other students from various states of India and learned about environment, acts, games, songs and music. This exchange program created a special bonding between Karigarshala and Centre for Learning (CFL). After visiting CFL, the students went to Pondicherry and Auroville for two days, where they got an opportunity to witness the excellent skill of artisans and thought behind the Auroville Centre.





Every year, the last 3 months of the course is dedicated for participation in live projects. This year the students participated in the construction process of a farmhouse located in the valley of the Shayadri range near Mahabaleshwar. The students of walling system course, casted 7000 Compressed Stabilized Earth Blocks (CSEB) and did masonry of 800 square feet. The students of the carpentry course were involved in the construction of the roof for the farmhouse. The main objectives of involving students in live projects are:- Learn to plan their day, learn to plan their work, client dealing, working in team and cooking food together. The team of Karigarshala tries to assess the live projects and keeps in mind to cover parts that are missing for the next batch.



One good news that we would like to mention is that a student of the year 2015 – 16 named Akshay Bhoy who is at present pursuing fine arts in Ahmedabad, participated in a competition in which a sketch had to be drawn on child labor. His drawing was selected among 7 best drawings. The Gujarat government will display the drawing in the entire state. The chief minister of Gujarat, Shri Rupani, felicitated him for his work and gave an award.



## Artisan Empowerment

“Without craftsmanship, inspiration is a mere reed shaken in the wind.”



The artisan empowerment unit was constituted with a clear focus on the traditional skills brought by the artisans with an attempt to link them with the contemporary practices. Since inception, Hunnarshala has realised a central platform that the karigars, or artisans, rightly deserve in the building industry. Working towards achieving this, the artisan empowerment initiative supports the artisans in an active manner by connecting them with contemporary market. A program has been specially developed towards this for all the artisans that have been recognised over the years by Hunnarshala's practice.

The main objectives of this Artisan Entrepreneur Program at Hunnarshala are as follows:

- To understand the traditional knowledge, validate them through research initiatives and link it with the contemporary application through local artisans and educational initiatives.
- To promote eco-friendly, cost effective and low energy building designs, materials and techniques, which have glimpses of local culture and aesthetics.

Over the years, Hunnarshala has evolved as a platform for artisans to participate, learn and later practice independently. The artisan entrepreneur division provides the required environment by involving the artisans in projects wherein they further develop their skills in a particular construction technique. Participation in projects also builds confidence in artisans to venture into the mainstream market. From the social perspective, the artisans progress in life and live with dignity.

## JHULELAL TIRATHDHAM TEMPLE

The JTT trust has selected a serene location at Narayan Sarovar to construct a temple of Jhulelal. Architect Nishant Lal based in New Delhi is designing the temple. The first phase of the project started in 2017. The architect and the trust members approached Hunnarshala to participate in the project as Project Consultants and execute the work with the help of artisan entrepreneurs. As the site is located in saline area Hunnarshala suggested using natural materials for constructing the temple. Local stones, marble, stones from Dhangadra and wood are being used to construct the temple. Steel and cement are being used wherever essential.

The first phase of the project was completed in the month of March and the temple was inaugurated in the month of April 2019.

The lead contractor is Kesra bhai, who has participated in past projects undertaken by Hunnarshala. “Lustre – specialists in building finishes”, an artisan entrepreneur company that has been associated with this project for stone masonry works and lime plaster, under the lead contractor.

The total turnover of Lustre till March 2019 is Rs.37, 71, 528.



## “THE VILLA” OF TIME SQUARE PROPERTIES PVT. LTD.

Times Square Properties Pvt. Ltd, a Bhuj based real estate firm through its architect named Mr. Hartmut approached Hunnarshala for constructing stabilized rammed earth walls and wooden roof understructure for their project named “The Villa” in Sedata village near Bhuj. Around 100 villa's will be constructed using Stabilized Rammed Earth and wooden roof understructure. Last year two villa's having different floor areas were constructed.

After the prototypes”, Sau Haath was contracted for constructing stabilized rammed earth walls for the houses that comprise of two and three bedrooms bungalows measuring 5200 square feet.







In the current financial year Sau Haath constructed stabilized rammed earth walls for 31 houses. The total turnover of Sau Haath from this project was Rs.66,54,468.



## RETREAT HOME

Studio Made at Hyderabad is an architectural firm of Architect Madhusudhan Chalasani. He has designed a retreat home to be constructed at Vijaywada. He approached Hunnarshala for helping him with exposed brick masonry works. He has selected wire cut burned bricks as the masonry material for the entire house.

An artisan team led by Mansukh Chavda and Gopal Chavda under the technical guidance of Hunnarshala is working on the project.

The work continued in this financial year and the total turnover of the artisan team in the till March 2019 was Rs.16, 53, 600



## MRUDUGANDH

Mr. Laxmikant Kapsikar of Raj Laxmi Projects Pvt. Ltd. is developing his farm at Yavatmal, Maharashtra. His vision for the farm is to reinstate the traditional practices in the field of agriculture, Soil and Water Conservation, Eco tourism, Building / Traditional Crafts, Animal Husbandry and Education.

The immediate requirement was to construct a shelter for the cow and ox present in the farm using eco friendly construction materials. Space frame and thatch roof was suggested and Mr. Kapsikar accepted it.

Artisan team of Span – Space frame systems and Matha Chajj – The thatch roof company started the roof work, which comprises of space frame roof understructure under thatch roofing system. A total of 16 roofs were constructed. The area of space frame was 29600 sq.ft. and of thatch roof was 26850 sq.ft.







On completion of the work the total turnover of Space frame on March 2019 from this project is Rs.11,38,742 and that of Matha Chaaj is Rs.16,88,900.

### Dr. Vijaysingh S Rathod Farmhouse

Aayam Architects an Ahmedabad based architectural firm contacted Hunnarshala for providing the services of artisan team to construct in-situ stabilized rammed earth (SRE) for a farmhouse they were designing for their client Dr. Vijaysingh S Rathod in Devpar, near Bhuj. The total area of SRE to be constructed was 1950 cubic feet. Sau Haath implemented the project by casting Stabilized Rammed Earth walls as per design.

The total turnover of Sau Haath from this project was Rs.4,22,563.



### iLabs

Spasm Architects a Mumbai based architectural firm contacted Hunnarshala for providing the services of artisan team to construct in-situ stabilized rammed earth (SRE) for a farmhouse they were designing for their client Ms. Jyothi Raju Chintalapati in Hyderabad. The total area of SRE to be constructed was 7800 cubic feet. "Layers – The Rammed Earth Company" implemented the project by casting Stabilized Rammed Earth walls as per design. The challenge in this project was to construct SRE walls between installed steel frame structures.

The total turnover of Layers from this project was Rs.11,03,292.





### Shantikunj Infrastructure LLP

Shantikunj Infrastructure is a general contracting firm engaged in the development of "Kanha" a commune space for the organization named Heartfulness.

The idea was to construct a Stabilized Rammed Earth wall at the Yatra garden in Kahna. The Yatra garden has 13 points, out of which in one point a stabilized rammed earth wall measuring 1150 cubic feet was constructed. "Layers -The Rammed Earth Company" constructed the SRE wall.

The total turnover of Layers from this project was Rs.1,16,712.



### Ecological Training Centre at Goa

Ms. Clea Chandmal contacted Hunnarshala through her architect Mr. Buland Shukla to construct few facilities of her training center in the outskirts of Goa. Stabilized Rammed Earth walls were constructed in octagonal shape and the stabilization of soil was done by lime instead of cement. This was the first project in which lime stabilization was tried out successfully. The artisans of Sau Haath implemented this work.

The total turnover of Sau Haath from this project was Rs.4,33,751.



### Agri-Horticulture Center

Architect Mihir Thakar along with representatives of Pidilite Industries Ltd. contacted Hunnarshala for constructing an Agri-Horticulture Centre at Manar, Bhavnagar for Pidilite Industries CSR wing called Grama Daxina Murti Lokshala. The walls of the center were to be made using stabilized rammed earth. The total quantity of SRE work was around 7500 cubic feet. Artisans of Sau Haath implemented the SRE work.

The total turnover of Sau Haath from this project was Rs.8,84,446.

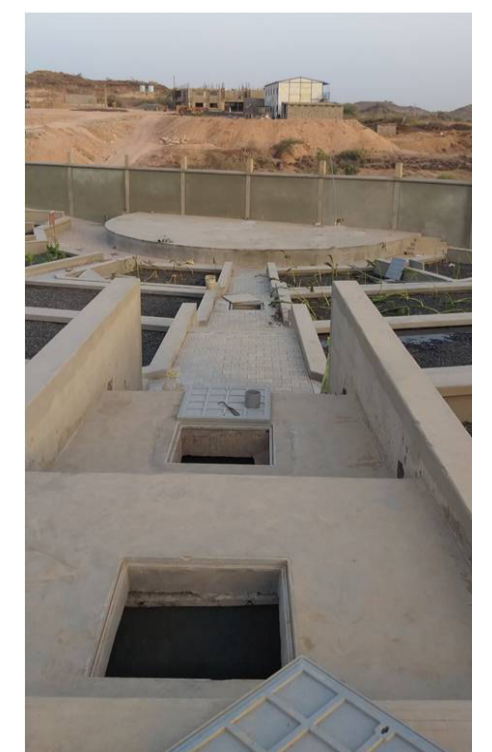
The total turnover of all the artisan companies in the year 18-19 is around 1.78cr.



### DEWATS at Surya Varsani School

Surya Varsani School is situated in Sedata, Bhuj. The school emphasizes on all kinds of sports along with regular studies. The school has complete facility for all kind of sports with coaching. The management of the school wanted to reuse the wastewater generated by the school.

A DEWAT system was designed for the school campus to treat the wastewater generated by the entire campus. This DEWATS has a capacity to treat 1,20,000 liters of wastewater each day. The entire DEWAT system sits below an open-air amphitheater, so that the upper space can be utilized.





## Research Program

This year the research collaboration between Hunnarshala Foundation and MIT Boston, USA was further strengthened by more research scholars taking forward the research work of testing various roofing options and conducting tests in mass housing project to understand and devise solutions from research perspective for the thermal comfort on the walls and roofs of the houses.

The two research activities that were conducted by two research scholars respectively are:

1. Observing Flexure strength of mud mortar and adding three different types of organic fibers.
2. Modification in roofing system to achieve passive thermal comfort.

## Training Programs

Each year the Artisan Empowerment division conducts Training Programs for college students of Architecture / Engineering and professionals. These training programs are focused to introduce students and professionals towards traditional construction practices using sustainable raw materials like earth and wood. The training programs provide an introduction on soil sourcing, physical analysis of soil, laboratory tests required to be conducted when using soil. The students participate in hands-on-sessions along with artisans on four earthen construction techniques. Similarly, in carpentry workshops the students and professionals understand wood, its process in saw mills, design joinery products and in the hands-on-session along with students of Karigarshala prepare wooden products.



In the year 18-19 we organized training programs on Earthen Construction Techniques and Carpentry. Around 2000 students and professionals participated in the training program this year.





# Community Empowerment

“Alone, we can do so little; together, we can do so much”



The community empowerment initiative majorly focuses on working with the communities that are displaced or affected due to natural disasters like floods or earthquakes, or due to man-made circumstances like violence, or are under-served and marginalised like slum dwellers or urban homeless. Provision of dignified housing and infrastructure becomes a tool to empower these communities.

The initiative believes in the collective strength of these communities, their core values, and hence encourages a participatory approach towards finding appropriate solutions. This approach helps achieve unique and tailor-made outcomes for every community. Additionally, the initiative actively looks for collaborations with individuals and institutions having similar ideology, which become a supporting structure to the participatory approach. These collaborations help us bring the strengths of a social expert together with the strengths of an engineer, an architect, or an artisan etc., and to provide a palette of holistic solutions for the communities to look at and take well informed decisions

Along with the provision of appropriate solutions, documentation of such communities, keeping the built habitat as focus, becomes an important exercise for the unit. These documentation exercises capture the traditional knowledge systems of these communities including their tradition of building technologies and value networks in general.

## SLUM REDEVELOPMENT OF BHUJ



Bhuj, a class A municipal town is located in Bhuj taluka, Kutch district's HQ. The town had a population of 1,48,834 according to Census 2011. Out of these, about 45,000 are living in total seventy seven slums within the city and inside municipal limits which was 'identified' with the help of the local body. The nature of existing slum settlements is such that they are on large land holdings, with fairly low density development, with ground floor structures scattered across the site. The majority of slums in the city are on public lands. Structures in the slums are largely semi pucca and pucca with very few katcha houses. These settlements have very limited infrastructures i.e. roads, drainage, water supply etc. Under Rajiv Awas Yojana, Hunnarshala initiated to develop 3 settlements with the concept of Owner driven reconstruction where house owners are involved in all processes from the beginning. The major objectives for this project are;



- Bringing existing slums within the formal system and enabling them to avail of the same level of basic amenities as the rest of the town;
- Redressing the failures of the formal system that lie behind the creation of slums; and
- Tackling the shortages of urban land and housing that keep shelter out of reach of the urban poor and force them to resort to extra-legal solutions in a bid to retain their sources of livelihood and employment.



The programmes are structured to ensure benefits to the poorest of the poor; citizens living in physically susceptible conditions, financially disadvantaged and members of the socially vulnerable communities. Social components in these kind of projects are very high. A process of participatory design, selection of neighbors as well as allotting the plots are being carried out with the community. Hunnarshala has facilitated them to take a decisions on all the aspects. One area committee has been registered as a Resident welfare association, and will be receiving grant for operation and maintenance of their area after completion of this project. At present, 202 houses are complete and rest of the houses are at the level of finishing. The settlements have been provided the infrastructure facilities of roads, drainage and water supply.



## DECENTRALISED WASTE WATER TREATMENT FOR COMMUNITY OF RAMDEV NAGAR, BHUJ

Bhuj has an arid climate. During the year, there is virtually no rainfall. Water is precious specifically for the area of Bhuj. Hence recycling water and using it for flushing and gardening is an ideal option. Under the Slum redevelopment project of Bhuj, Hunnarshala has selected to install a Decentralized Wastewater Treatment System that treats the domestic wastewater to an extent that it can be reused for flushing in the toilets of the building.



Since the community themselves are taking care of the operation and maintenance of their area, one of the area committee of Ramdev nagar have shown interest to save water consumption by about 30% by using the treated water by installing the DEWAT system in their area. Looking to the community's interest and willingness to save water, a US based organization, Currystone foundation have provided financial support to construct the community led DEWAT system.





## HOMES IN THE CITY PROGRAM FOR MARGINALISED COMMUNITIES OF BHUJ



### HIC PRINCIPLES

### DEMOCRATIC DECENTRALISATION

### EQUITY (EMPOWERING DISADVANTAGED & MARGINALISED)

### ECOLOGICALLY CONDUCTIVE

Homes in the City' (HIC) is an innovative Program coordinated by five organisations having similar philosophy but working on diverse themes in the city of Bhuj along with issue-based collectives, citizens and several other organisations. The broad themes on which the five organisations work include housing by Hunnarshala Foundation, water supply by Arid Communities and Technologies (ACT), women empowerment by Kutch Mahila Vikas Sanghathan (KMVS), urban governance by SETU and waste management and biodiversity conservation by Shajeevan. They are collectively developing Bhuj to be a city where citizens, particularly the urban poor, improve their socio-economic condition and access basic services through political participation in local governance.



### WARD PLANNING

Community ownership and support

Community ownership and support

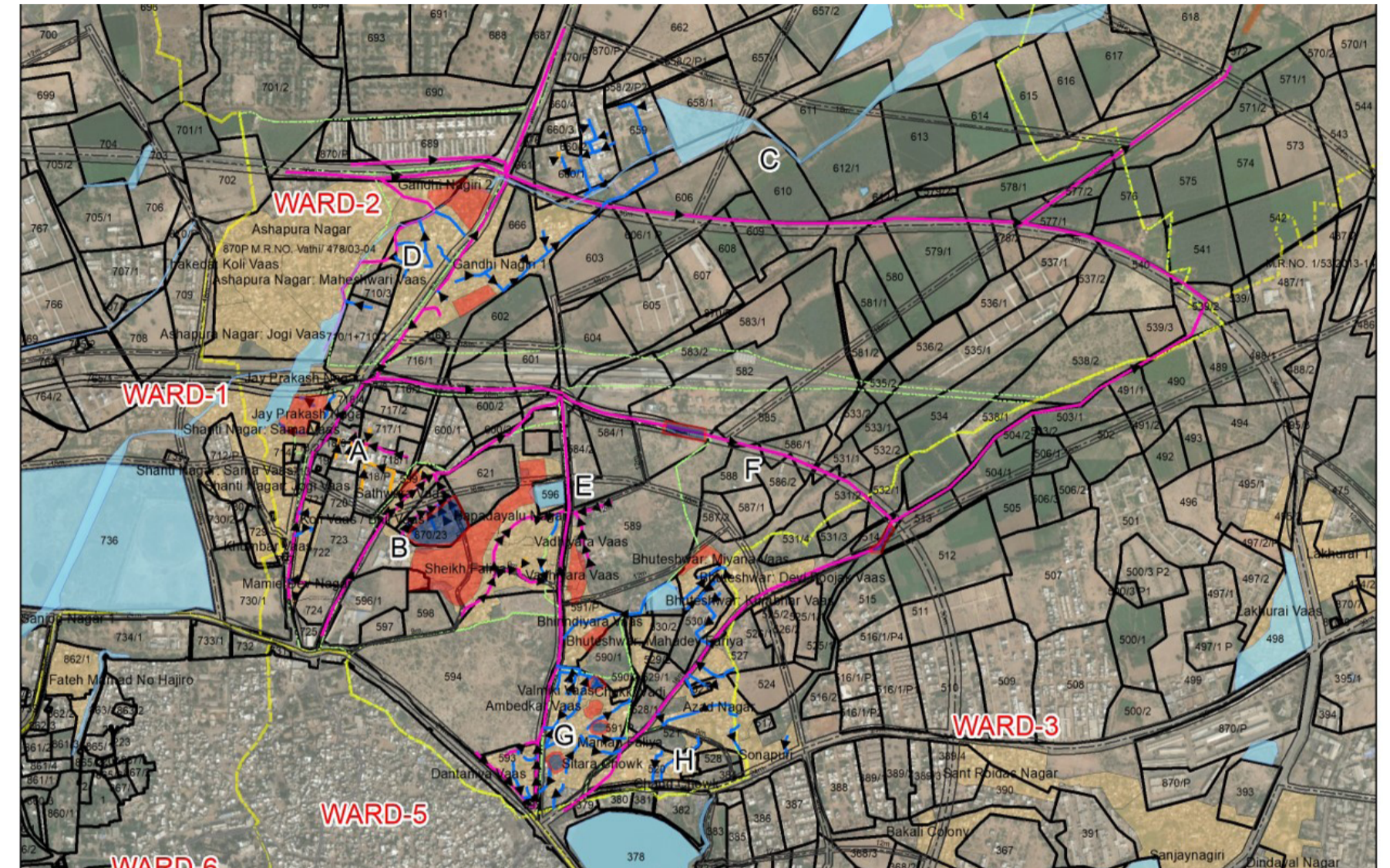
Participatory monitoring evaluation and learning systems

Helps to identify local / Feasible solutions

Better understanding of local issues

The Program was initiated in 2008 with the following principles:

- i) To push for democratic decentralisation to allow citizens to build communities and have better control over the development, i.e. to govern their services, assets, facilities and future,
- ii) To ensure that the interventions are environmentally and ecologically conducive,
- iii) To work towards building equity, and therefore, priorities empowering the disadvantaged and marginalised, such as poor, migrants, women, socially stigmatised, even flora and fauna.



This is a rare Program that touches the lives of a range of marginalised and poor communities such as rag-pickers, migrants, women, children, adolescent girls, cattle owners, vendors, sex-workers, labourers and many more.

As a part of this program, Hunnarshala has mainly worked on following thematic areas of the city;

- i) Housing for the marginalized community of Slums
- ii) Organising Migrants (Urban Homeless) of the city
- iii) Organising Urban Street Vendors
- iv) Recycling of construction waste

### HIC PARTNERS AND INTERVENTION AREAS





**ALMA MATER (JODHPUR)-A SCHOOL FOR ALTERNATIVE EDUCATION**



An alternative education school that will cater to the students from Kindergarten to Higher Secondary level is being executed in Jodhpur, Rajasthan.

The project was conceptualized with the idea of implementing traditional knowledge of Jodhpur and its surrounding's while promoting the local artisanal skills with the interest of school team in getting a low energy building design and the use of eco-friendly materials with cost-effective techniques. The Phase-1 of school is under construction with the involvement of local artisans and using traditional wisdom from last 2 years. The idea of using locally available materials like Sandstone, Lime, soil from site and re-cycled wood is very significant. The techniques of making lime mortar and Kodi marble plaster technique with stone masonry are being incorporated in construction while promoting the local artisans and their skills parallel in the process.



The Alternate techniques like Stabilized Adobe, sand-packed foundation and Shallow domes, Vaults as roofing technology without steel are done effectively while exchanging knowledge from artisan's understandings.

The project was streamlined in a way that it gave opportunities even for the artisans from U.P. (shallow domes) and Bihar (stabilized adobe and vaults) with their teams to contribute in the roofing technologies and masonry in school.

**MATERIALS AND TECHNOLOGIES USED**



SAND - PACKED FOUNDATION



SANDSTONE MASONRY



VAULTS IN PROCESS WITH STABILIZED ADOBE



LIME PLASTER



STABILIZED ADOBE MASONRY



PEBBLE AND MOSAIC CRAFTED FLOORS



SCRAP METAL JAALI



TERRAZZO IN SITU FLOORING



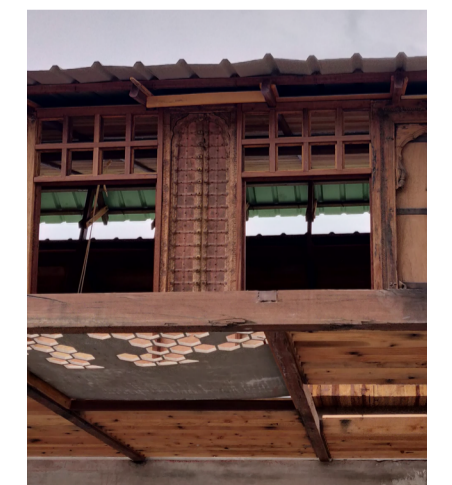
FILLER SLAB



SHALLOW DOMES WITH STABILIZED ADOBE



SANDWICH ROOF



RECYCLED WOOD ELEMENTS



## GOVERNMENT INTER COLLEGE - BARAM, UTTARAKHAND



In June 2013, a multi-day cloudburst centered on the North Indian state of Uttarakhand caused devastating floods and landslides becoming the country's worst natural disaster since the 2004 tsunami. The debris blocked up the rivers, causing major overflow. The main day of the flood was 16 June 2013. Though some parts of Himachal Pradesh, Haryana, Delhi and Uttar in India experienced heavy rainfall, some regions of Western Nepal, some parts of Western Tibet also experienced heavy rainfall, over 89% of the casualties occurred in Uttarakhand. As of 16 July 2013, according to figures provided by the Government of Uttarakhand, more than 5,700 people were "presumed dead." The Tata Relief Committee (TRC) and the Government of Uttarakhand have collaborated with the understanding towards community rehabilitation and reconstruction in response to the impact of the floods and landslides in June 2013.



Government Inter-College at Baram (GIC Baram) is a Secondary/Higher Secondary school facility for nearby 8-10 villages. It is a government school started in early 60s. At present, the Baram Inter College has been declared as one of the hundred model schools by the government of Uttarakhand. It caters to the students from a radius of about twenty kilometers. Baram is a village in the Dharachula Tehsil of Pithoragarh District in the state of Uttarakhand, India. Since, the area is under the earthquake zone 5 and looking to the condition of school buildings, TRC has taken an initiative to redevelop the school premises as a part of their Disaster rehabilitation and reconstruction policy.

Hunnarshala Foundation was approached by the Tata Relief Committee, Dehradun for the project. The school design has load bearing structures, structurally designed for earthquake Zone 5 and all the required safety features. Through the reconstruction of GIC Baram, Hunnarshala Foundation aims at propagating Earth and Bamboo based environment-friendly technologies which have a low carbon footprint. This project will also lead to local artisans getting educated in how buildings can be built using techniques, materials and processes which are sustainable and eco-friendly while keeping in mind the local aesthetics. This will also result in increased livelihood opportunities for the artisans. The low energy building design focuses on how usage of local materials results in cost-effectiveness. Traditional Shallow Dome is used in this project and traditional building craft Artisans will be given priority in this project.



Stone Masonry in foundation was executed with almost all the stone being recycled from the material salvaged during the demolition of the old, dilapidated structures. Exposed Brick Masonry in superstructure was used for load bearing structures. This resulted in minimal yet efficient usage of steel. Rat Trap bond masonry was used in Temporary Structures which required 30 % lesser material, while also enhancing thermal insulation. The use of MS Hollow Sections in the roof understructures and zinc-aluminum pre-coated steel sheets as roofing options has been done to create light-weight roofing systems. Space-frame built of MS Hollow Pipes was used in temporary school roofing, providing flexibility of varying spans according to the site conditions as well as speedy installation. The alternate technologies use the locally available materials for most of the construction; and conventional technologies using RCC are proposed for the general civil works.





Shallow masonry domes, widely found in Haryana and Western UP, have a depth of 10-12 inches in a room. Such shallow depth allows filling on sides, leveling the floor and building of additional floors on top. Since shallow masonry domes require minimal amount of steel, i.e. only in the form of re-enforcement in ring beam around the dome, saving 70 % of the steel used in conventional RCC slabs. They are sustainable as well as cost effective and have a longer life span. The low carbon footprint of this roofing technique motivated us to use this roofing technology to span the roofs in intermediate floors in GIC Baram. In all, 41 shallow domes were executed covering almost 500 square metres.



**A SCHOOL FOR ALTERNATIVE EDUCATION - SAHYADRI, PUNE**



Sahyadri School is a residential, co-educational school in India. It is run by the Krishnamurti Foundation, India based on the views on education of philosophical speaker and writer J. Krishnamurti. Hunnarshala is involved for Developing a master plan of Sahyadri School campus and Designing Specific buildings i.e. Dormitories, Library, Admin, Guest house, Sports facilities etc. The school has in the past, developed the same master plans that it wishes to review and update, building the components of Energy, Water, Flora and Fauna besides the building and infrastructure. Hunnarshala will be developing the Master plan with primarily be a zoning plan based on the watershed and land capability mapping exercise.

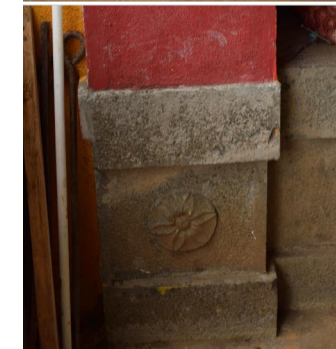
Sahyadri school (KFI), Pune wishes to use its properties to build various facilities including modifications of the Old structures for some new functions as well. This project was conceptualized with the idea that the existing structure needs to be retained majorly with some changes and new additions with locally available materials and traditional technologies using Stone, wood, mud and Lime plaster, which would be used majorly and would define the language of building. The local artisanal skills would be executed with an intention to promote them. The local artisans will be trained for the specific technology and involve them for building the school as well as the knowledge which can help them for future development.



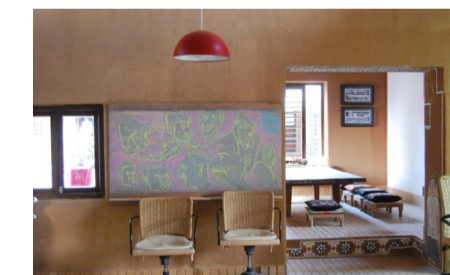
STONE MASONRY



UNSTABILIZED ADOBE

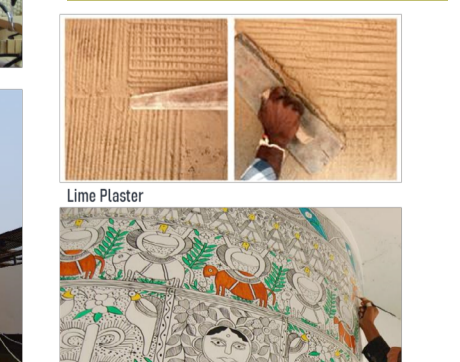
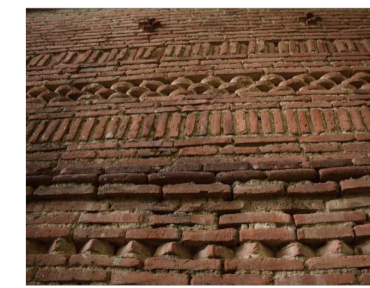


JALI WALL

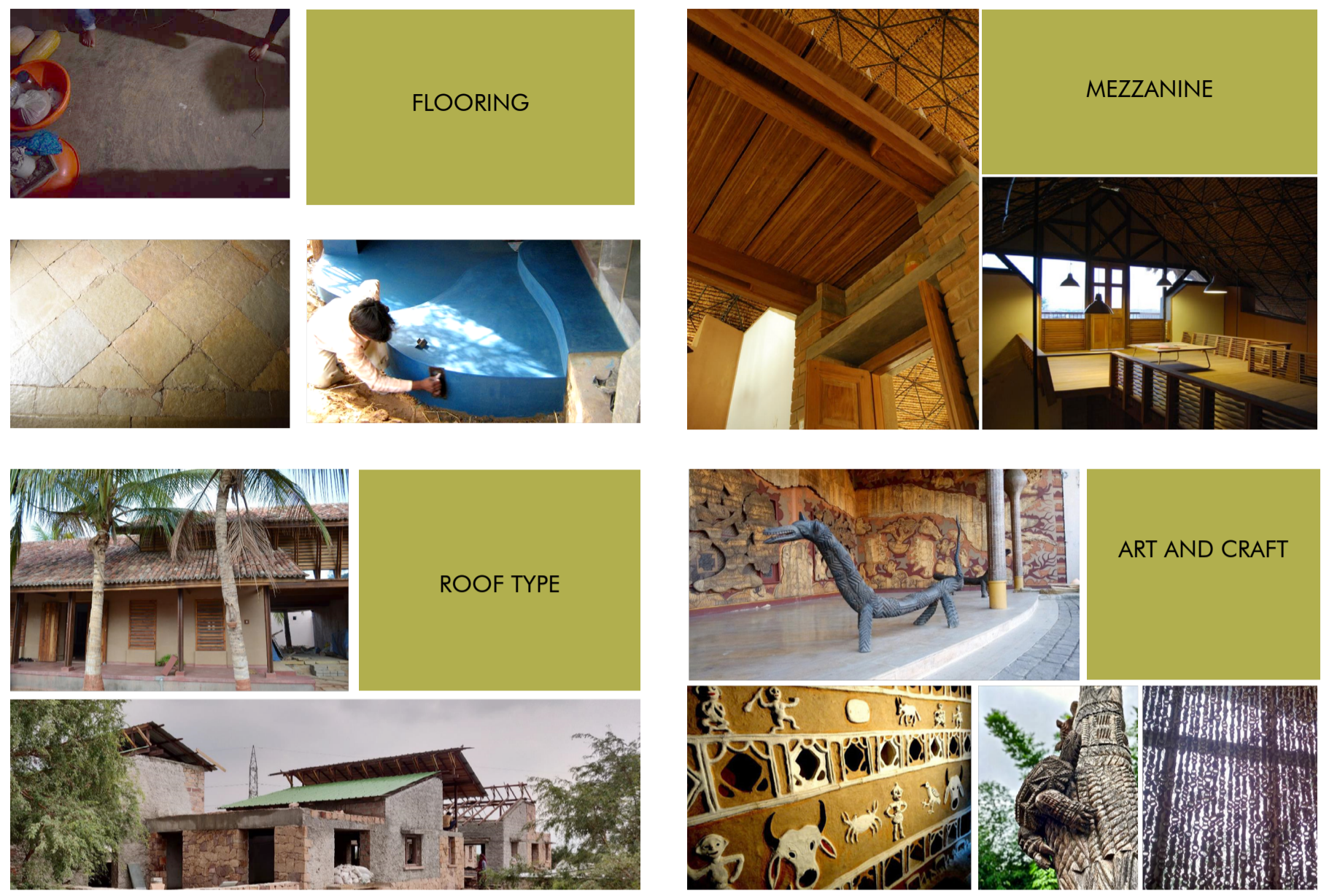


Mud Plaster in interior walls at Hunarshala.

MUD AND LIME PLASTER







### NEPAL HOUSING RECONSTRUCTION PROJECT IN GORKHA



After the devastating earthquake in 2015, the Government of India has decided to support 50000 households in 2 districts of Nepal. Out of that 26912 Households are in Gorkha districts covering 42 wards of 8 palikas which was supported financially for USD 3000 per household. UNDP and ODRC are engaged in this project to provide Socio-technical facilitation to the house owners to build Earthquake safe houses and resilient community. As an ODRC, Hunnarshala, Seeds, CEDAP and Unnati are mainly involved in which Hunnarshala is mainly support in providing On-site technical facilitation and training to the Masons and Field teams. The project was initiated in April 2018.





The project is designed with the Owner Driven approach in which the house owner is building their house. To implement the project, 12 cluster level teams have been placed in all the 8 palikas based on geographic profiles. Each cluster team consists of Team coordinator, Engineers, Sub-engineers, Community facilitators and Awas Nirman Saathis (Skilled masons). These teams are directly engaged with the house owners, community and tole, ward & Palika level representatives for supporting different activities mentioned below;

As Hunnarshala, we have delivered 5-days Master trainers of Training for the field cluster teams on different housing typologies. These field teams will later on train the mason in their respective cluster area based on needs on minimum requirements to build safe houses as per the government guidelines.



Hunnarshala is also engaged with providing Mason training in different tole and wards. Till the end of the March, more than 1500 masons have been trained with 3900 Mason days training on different types of housing typologies i.e. Brick masonry with Cement mortar, Stonemasonry with Mud mortar, RCC with Brick walls, Containment reinforced with Stonemasonry in Mud mortar, Correction measures for the non-compliance houses, etc. We have developed the required training and take away materials in the form of Flex, posters, presentations, and booklets. Apart from training, Hunnarshala has another role of providing on-site technical facilitation support for the under-construction houses.

Hunnarshala has also developed several Information, Educational and Communication materials (IEC) on different technical aspects of the building typologies in a form of Pamphlets, Booklets, and Flyers. In the context of Nepal, Radio is one of the tools for information sharing. Especially the hilly region where there is very minimum access to communication, the radio is the only tool by which people can get daily information. We have also developed radio programs as an awareness to the community on different technical aspects as well as process and support of this project. Till now, out of 26912 households, 21424 houses have completed the construction and most of them have received all the 3 tranches from Government.



### POST DISASTER HOUSING FOR MONK'S - PAKHEL, NEPAL

An earthquake of magnitude 7.8 occurred at 11:56 NST on 25th April in Nepal, killing more than 9000 people and injured around 23000. Its epicenter was east of the district of Lamjung. It was the worst natural disaster to strike Nepal since the 1934 Nepal-Bihar earthquake. Hundreds of thousands of people became homeless with entire villages being destroyed. Centuries-old buildings were destroyed at UNESCO World Heritage Sites in the Kathmandu Valley. Houses in Pakhel/ Liping villages mostly inhabited by Buddhist nuns and monks were completely destroyed.

Senegdek Service Society (SSS) who is managing these monasteries have purchased new land near Pakhel village in district Makwanpur near Kathmandu. With the experience of disaster relief work, Hunnarshala has supported building 150 houses for Nuns in Bhakhang which was supported by Asian Coalition for Housing Rights (ACHR). ACHR has approached Hunnarshala to Support in developing designs based on the living style of Monks and also train them and local masons in construction practices to enable Owner Driven Construction process and shall facilitate reconstruction of houses for the monks. Hunnarshala also has proposed to use locally available materials and alternative building practices.



## SANJAYNAGAR SLUM REDEVELOPMENT - AHMEDNAGAR, MAHARASHTRA

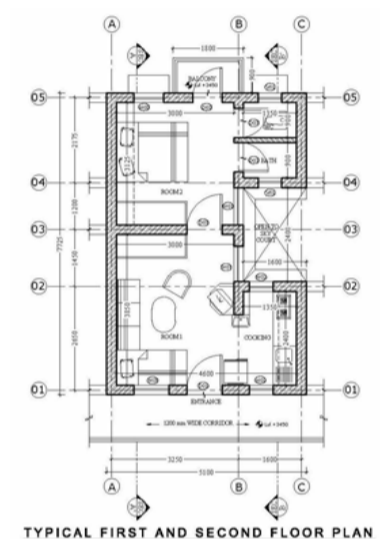
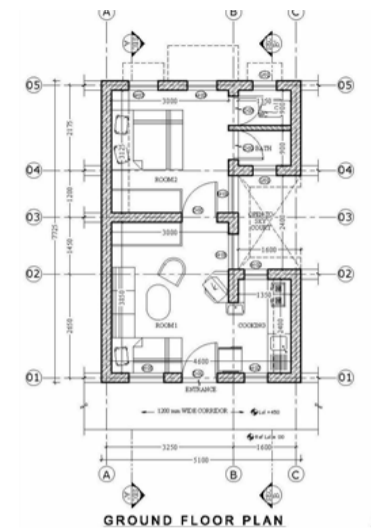


Sanjaynagar is one of the approximately 20 slum pockets in the Ahmednagar Municipal Corporation. The community of Sanjaynagar has settled there about 40 years ago. The settlement is spread over an area of about 2 acres, having a population of almost 800 inhabitants and around 300 families. There are at least 12 different communities staying together in the settlement.

A Detailed Project Report (DPR), was submitted to the Ahmednagar Municipal Corporation for approval, prepared by a consortium of three organisations, Curry Stone Design Collaborative, Snehalaya and Hunnarshala, after a detailed physical and demographical survey of the settlement. The DPR proposes redevelopment of the settlement under Affordable Housing in Partnership (AHP) component of the Pradhan Mantri Awas Yojna-Urban (PMAY-U). The DPR has been approved by the state government and consequently by the central government. The DPR lists 298 houses proposed to be built in-situ. The state government has committed to contribute Rs 1,00,000/- to each homeowner, and the central government will be contributing Rs 1,50,000/- to the same. The consortium will develop the detail project report with the reference to scheme guidelines, develop house designs and other spaces with community participation and train them to facilitate and support in the construction process.



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One of the keys to the success of such a redevelopment project is community participation. Keeping this in mind, Hunnarshala's intervention will have a particular focus on community participation and mobilisation. Therefore, creating awareness about the benefits of having a healthy living environment for the present community and their future generations.





## RAMMED EARTH DOCUMENTATION - SPITI VALLY, HIMACHAL



Spiti Valley, located in Lahaul and Spiti district of Himachal Pradesh, is a cold desert mountain valley known for its natural beauty and architecture. Unstabilized rammed earth is the most commonly used building technique in Spiti. Adobe was first used in the region before rammed earth was introduced from Tibet, about eight hundred years ago and replaced adobe as the popular walling system. Making adobe walls was a cumbersome and time-consuming process as the bricks were first made, dried and then used in masonry. Rammed earth was much faster as mud was directly converted to a wall with the help of a formwork



In Spiti, where construction can only happen during summer months, rammed earth gained popularity as it hastened the construction process. Rammed earth is also popular as there is a scarcity of other materials like timber and stone, which are available in abundance in other parts of Himachal Pradesh. Timber is used in roofing, doors and windows, while all the walls are made in Rammed Earth, or in adobe. Rammed earth construction is found in both rural and suburban areas.

### A Typical Spiti House in Tabo Village, Spiti Valley

This house documented in Tabo is the example of most commonly found two storied house, where the upper floor is used for staying in summers and the ground floor is used for keeping animals and one room (makang) for staying in winters. Of all the houses, this house depicted all the features of a typical house. The house belonged to an old couple.

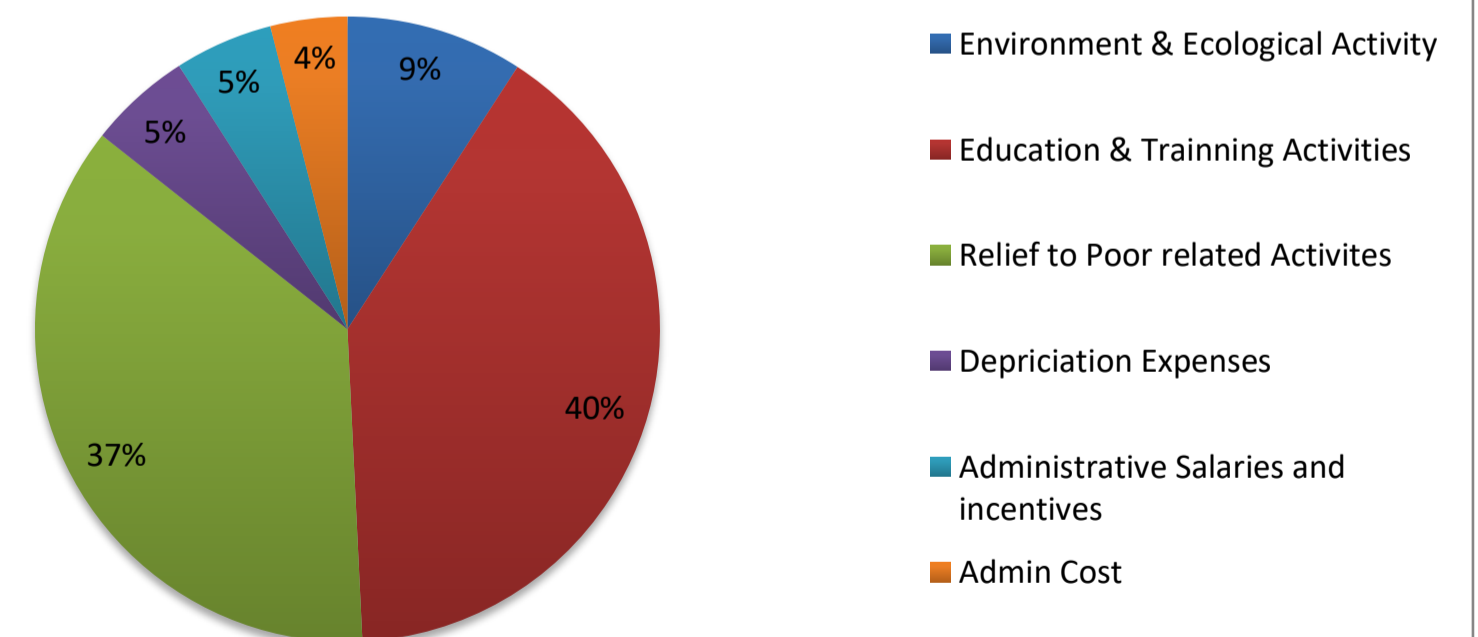


## FINANCIAL REPORT 2015-16

### EXPENDITURE CHART 2018-2019

Particulars	Amount
Environment & Ecological Activity	3,987,216
Education & Training Activities	17,444,132
Relief to Poor related Activites	15,844,328
Depriciation Expenses	2,310,867
Administrative Salaries and incentives	2,212,966
Admin Cost	1,729,358
<b>Total</b>	<b>43,528,867</b>

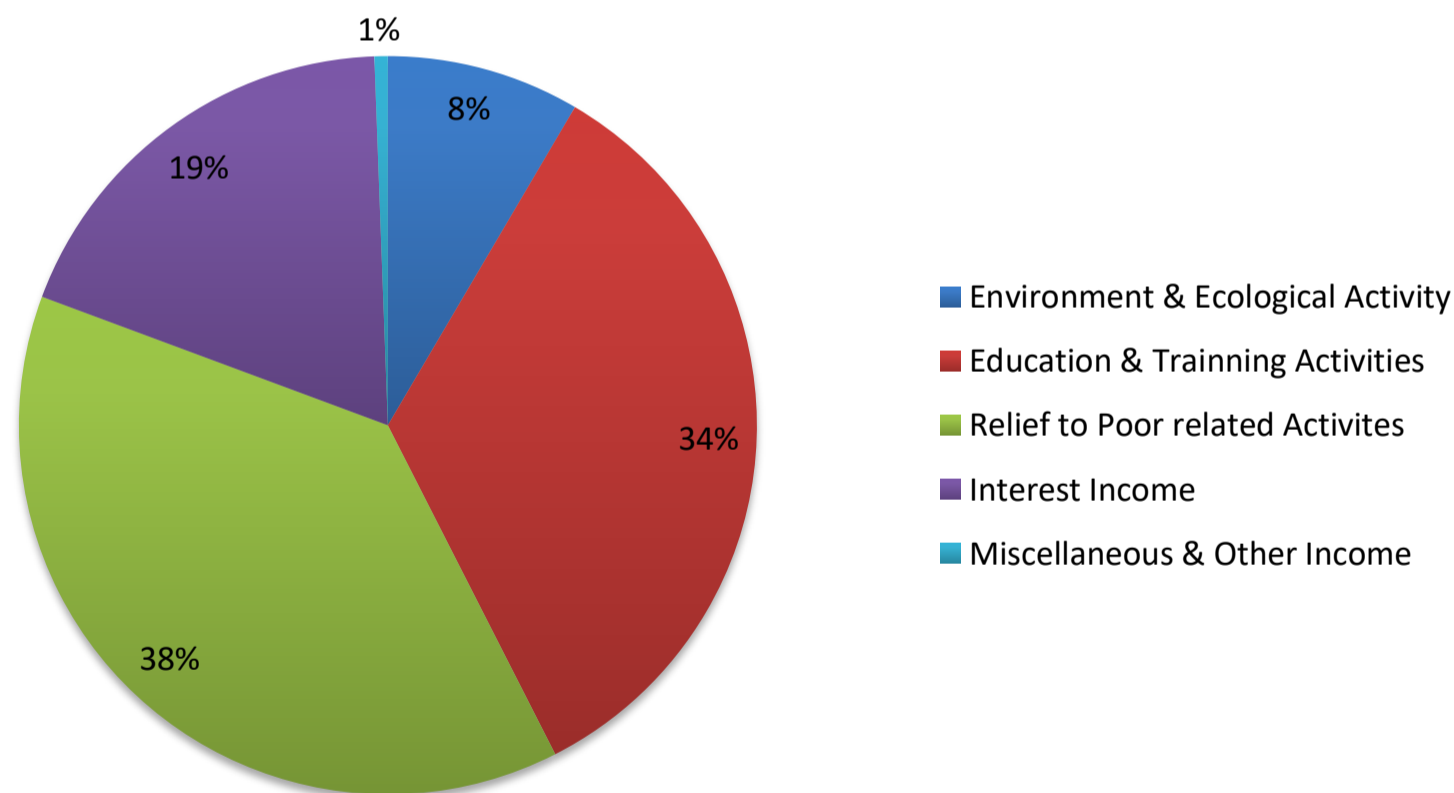
### EXPENDITURE CHART 2018-2019





**INCOME CHART 2018-2019**

Particulars	Amount
Environment & Ecological Activity	4,071,448
Education & Training Activities	16,367,389
Relief to Poor related Activites	18,347,664
Interest Income	9,017,821
Miscellaneous & Other Income	281,640
<b>Total</b>	

**INCOME CHART 2018-2019****TEAM****Board of Directors**

Neelkanth Chhaya, Chairman  
 Sandeep Virmani, Executive Vice Chairman  
 Mahavir Acharya ,Managing Director  
 Tejas Kotak , Executive Director  
 Kiran Vaghela, Director  
 Tushar Dayal, Director  
 Prof. Jagadish Kaup, Director

Rupesh Hurmade, Program Co ordinator  
 Gaurav, Project Architect  
 Aditya Singh, Project Co ordinator  
 Uday Jain, Project Assistant  
 Ksheeraja Padmanabhan, Project Architect  
 Satwika Taduri, Project Architect  
 Arvind Naran Anthu, Project Assistant  
 Jignesh Bhatt, Project in Charge

**Management Committee**

Sandeep Virmani, Executive Vice Chairman  
 Mahavir Acharya, Managing Director  
 Tejas Kotak , Executive Director  
 Prajesh Jethwa, Senior Manager  
 Nilam Sompura, Administration Manager  
 Chetna Varu, finance controller  
 Atul Vyas, Artisans School Coordinator  
 Mukesh Tank, Design Unit Head

**ARTISANS EMPOWERMENT UNIT**

Bharat Chauhan, Project In Charge  
 Jignesh Gor, Project In Charge  
 Pradip Rangani , Project in Charge  
 Raj Chauhan , Accountant  
 Hemant Dudhaiya , Project in charge  
 Milap Gor, Project supervisor  
 Poonam Chavda, Project In Charge  
 Pankaj Bhagat, Assistant Engineer  
 Jaydeep Parmar, Assistant Engineer

**Administration Unit**

Urvashi Anjaria , Admin Assistant  
 Jamnaben Rathod, Office Assistant  
 Sitaben Buchiya, Office Assistant  
 Alimamad Sama, Driver  
 Meghji Bhuchia, watchmen

**Interns:**

Ami Shah  
 Aishwarya Kulkarni  
 Indupriya M.  
 Ramya M.  
 Paras Pitroda  
 Gaurav Varshney  
 Siddharth Pillay  
 Keerthana A.  
 Partha  
 Apoorva  
 Nikhil Paliwal  
 Meera Pindoriya  
 Pragya Bhargava  
 Rakshan Khan  
 Muskan Tiwari  
 Kadambari Komandur  
 Ritvik Khushu (Volunteer)  
 Parth Shah (Volunteer)  
 Vasudha Karnani (Volunteer)  
 Yugam Chauhan (Volunteer)  
 Hatim Buildingwala (Volunteer)

**Karigarshala**

Pangu Singh, Walling Systems Instructor  
 Vasant Maheswari, Carpentry Instructor

**Account Division**

Kartik Mehta, CA Consultant

**Community Empowerment Unit**

Brinda Khiera, Accountant  
 Dhiraj Thacker, Project Assistant  
 Dinesh charan , Project Assistant  
 Rajesh Gor, Project Assistant  
 Hiren Gohil, Project Assistant  
 Karamshi Rangani, Project in charge  
 Keyur M. Sarda, Coordinator, Technology &  
 Artisan Support



