

Conservation, Environmental Practices, Social & Sustainable learning – China

SUMMARY

Project Description: To conserve and convert a deserted ethnic minority family house into a social & sustainable learning centre with accommodation facilities for hostel purpose.

Project Type: Energy Efficiency, Water, Sun and Education in Sustainability

National Association: YHA China

Project Location: Heart 2 Heart Youth Hostel, Kunming

Estimation of number of reduced tonnes of CO₂: 68.5 tonnes per year

Total Funds Requested: £ 25,000

Total Project Cost: £ 159,700

Annual £ saves and ROI (return of investment): £ 12,841 per year

Why should this project be funded ahead of others?

This is the first project of its kind in China – being a social enterprise integrated with hostelling business for universities internship and charity purpose. The aims are of four folds: 1) Social enterprise management; 2) Rural social work community development; 3) Social and sustainability learning; 4) ROI for further advancement of charitable activities.

China is a fast developing country with largest population in the world. Conservation of the environment and development in a sustainable manner are absolutely vital but are however very little understood at this point in time in this country.

This project provides an exemplary model to demonstrate the importance and easiness of taking part in sustainable practices in our daily life without employing hi-tech or considerable investment. It also offers many different forms of interesting, educational as well as challenging activities concerning love and care of nature, and how to put the “3R” principles in real practice.

Apart from welcoming all walks of life to take part in our program, we are specially focusing on university students, hostels managers, youth leaders, social workers and NGO members staff and volunteers, because this particular segment holds strong influence on other people in a grand scale, their involvement and appreciation in the area in question will make sustainable action be widely spreading out and multiplying. As a result, the action itself becomes a sustainable development snowball rolling bigger and faster.

Last but not least, the proceeds of this project is to be donated to Registered Charity of similar objectives (i.e. social & sustainable learning), making the investment in this project more meaningful and sustainable.



DETAILED PROJECT INFORMATION

Purpose/objectives of the project activity

- 1) To conserve a diminishing “Bai” ethnic minority dwelling, with its fascia untouched, converted into a sustainable accommodation in a beautiful countryside in the outskirts of Kunming, Yunnan. With plenty of open space and organic farming opportunity, people can grow their own vegetables or pick their own fruits;
- 2) To establish various forms of environmental practices in order to encourage low-carbon living by example and by experience;
- 3) To run program for hostellers from all walks of life and program specially designed for hostel managers, NGO staff members and volunteers, through residential experience, observation and different types of interactive activities, to achieve a better understanding of conservation and sustainability;
- 4) To work with local registered charity and school of social work for provision of internship for students and volunteers to carry out rural community development, particularly for social learning and sustainable awareness;
- 5) To reduce consumption of resources by employing renewable/alternative energy application, recycling used water, implementing cross-ventilation, natural lighting, natural drying, waste reduction etc.

Methodology

It was a typical 2-storey dwelling for “Bai” ethnic minority. The main building was constructed by means of timber framework. An extension was added to it forming a central courtyard at later stage. The main building’s structural wall and partition walls were of mud bricks which are natural material with excellent insulation effect. This type of house however is diminishing in the surrounding area nowadays.

The exhibition room on 1st floor of the main building was the hall of ancestors of the family in the past. The room is kept as it was during the renovation for the purpose of showing the originality of this house and paying respect to the family.

Approach

Right from scratch, **sustainable development** was taken into prime consideration for renovation work of this house. It was based on following principles:

- 1) Minimize construction waste;
- 2) Use of recycled building materials;
- 3) Apply energy saving system wherever possible;
- 4) Conservation.

Reduction of Construction Waste

In order to reduce construction waste and minimize the damage to originality of the house, we have adopted a creative design for bathroom partition which will keep the change of layout to a minimum level and allow plenty of natural light.



Furniture and fitting are repainted or renewed instead of purchasing new one. One of the typical examples is that we took down the metal control panel on bedside stool, replace it with plywood board and repaint it with coat of paint, make it a very attractive, colorful and practical bedside table. Instead of wall paper, we paste newspaper on wall to create an alternative modern design.

Use of Recycled/Used Building Materials

The pavilions in the sitting out area are all made of used rail sleepers. These sleepers can even be reused in future when circumstances require. The roof of pavilions is partially built with glass sky light so that artificial lighting is needed at minimal level.

Display boards are made of wardrobe/cupboard doors (taken down from some old wardrobes). Planters at the entrance were timber once for concrete formwork.

Energy Saving Application

Solar heating provides about 60% of the hot water supply. Industrial washer is installed on site avoiding collection and delivery of washing. Linens are sun-dried whenever weather permits. As a result, it reduces a considerable tonnage of carbon emission.

Use of natural light in corridors, bath rooms, bed room and common area go for the same purpose. 98% lights are either energy saving bulbs or LED. Waste water discharged from washing machines are kept in underground sediment tank for toilet flushing. As this water carries soap and bleach residue, it helps to reduce use of chemical cleansing agents.

Social & Sustainable Education

Organizing environmental activity program is part of our policy to influence and encourage more young people to get involved in conservation. Our experience suggests that “Personal commitment is vitally important and the key to success”! Hostel staff members’ understanding, support and commitment in this particular issue will enable hostellers to share experiences, learn from each other and be involved in action, in respect of conservation.

We also believe that “every small drop counts”. Every effort is made to demonstrate how recycle, reuse and reduction can be made in everyone’s daily routine and how easy can a low carbon living be achieved

Our educational program focuses on above principles and covers a wide range of interesting activities, some of them are challenging in physique and the others need certain degree of thinking and creativity. During the stay, participants see, do and discuss about the subject in question. In real terms, participants are introduced how we can have a low carbon living without employing hi-tech system or grand investment. All these will take participants to rethink what they do in their daily routine and be aware of how much they can help in saving the environment.

Others Related Issues

In terms of operation, we believe every small drop counts. For instance, we adopt following practices in our daily operation:

- Reusable signage, coreless toilet rolls
- Communication with customers - conservation signage
- Reduction for use of paper and printed matters
- Recycling for bottles, tins, cans, papers, batteries, plastic bags, bottle tops, eggshells and washing water
- No disposable items such as slippers, tooth brushes, toothpaste, shower gel etc
- Provide drinking fountain to reduce plastic bottles
- Use of vacuum cooker to save energy
- Use kitchen waste oil to make soap
- Use natural cleansing product to replace detergent
- No smoking except designated area
- Provide bucket in bath rooms and encourage hostellers to keep bathing water for toilet flushing;
- Work together with organizations sharing the same interest.

Monitoring plan

Annual self-green audit will be carried out by the management to assess the efficiency of implemented hardware and software pertaining to the conservation, sustainable measures and educational achievement. The audit evaluates the sustainability performance by comparing actual occurrences to those that were predicted. The main objective of this audit is to make future operation more valid and effective. The two main considerations are:

- Scientific - to check the accuracy of predictions and explain errors.
- Management- to assess the success of mitigation in reducing environmental impacts

In the event of courses specially designed for hostel managers and NGO members and volunteers, self-completion questionnaire and random site visit will be made to monitor the progress and implementation of action plan.

In the case of courses for individuals, follow-up meeting and experience sharing will be held on a regular basis. Yunnan University and Hong Kong Polytechnic Design and Social Development Centre will assist in survey and analysis.

Environmental impacts

The disturbance on the environment in relation to this project is kept to the minimum. For instance, all the furniture, fittings and most of the lightings are renewed second-hand stuff. Construction wastes are either recycled or reused wherever possible. Some of the typical examples are: timber for concrete formwork being turned into decorative flower boxes, and materials from taken down old timber staircase is reconstituted for making new dining tables.

On the other hand, the resultant effect of education by example and by experience helps to enhance the locals' and hostellers' understanding on environmental issues which become increasingly critical in our daily life.

Contribution of the project activity to sustainable development

	Action	By
E C O N O M I C A L	Long term sustainable management policy	YH Management
	Biodiversity being a shared mission	YH + Partners
	Organic growing (fruit trees and vegetables)	YH + Hostellers
	Cooperation with partners specialized in eco-tourism	YH + Partners
	Use of recycled/old building materials and renewed furniture	YH
	Conservation of building with historical value	YH
	Organizing eco/natural/historical tours in the vicinity	YH
	Bike rental (encourage green travel)	YH
E C O L O G I C A L	Solar panel, heating	YH
	Recycled water for flushing	YH
	Used water for gardening	YH
	Energy saving bulbs, LED lights	YH
	Air exchanger (saving up to 75% of electricity)	YH
	Rubbish segregation	YH
	Paperless office	YH
	Insulation (mud bricks and natural materials)	YH
S O C I A L	Waste reduction (e.g. drinking fountain, compost, paper making, soap making by means of used oil)	YH + Hostellers
	Use of local produce	YH
	Support fair trade produce	YH
	Support organic farming produce	YH
	Local employment preference, fair employment practice	YH + Employees
	Use organic/natural cleansing agents	YH + Staff
	Work with local farmers for eco/environmental improvement	YH + Farmers
Low-carbon living	YH + Hostellers	
E D U C A T I O N A L	Environmental awareness program	YH
	Sustainability courses for hostel managers, NGO staff members and volunteers	YH + Participants
	Low-carbon living residential course for general public	Ditto
	Interest groups (eg):	
	• Recycled paper making	Ditto
	• Soap making from used oil	Ditto
	• Handcraft making by using waste materials	Ditto
	Working with organizations of similar interest	YH + Partners
Partnership with universities/students of related interest	Ditto	
Provide internship to students in this particular area	Ditto	

Estimations of emission reductions (CO2e tones)

Per Annum

Saving

- | | |
|---------------------------|----------|
| 1) Solar Panels | 52,560Kw |
| 2) Air Exchanger | 10,950Kw |
| 3) Lighting | 9,455Kw |
| 4) Laundry Natural Drying | 24,177Kw |

Sub-total

97,142Kw or **68.5 tones CO2e**



5) Washing Collection and Delivery	8,800Km or (2 tones CO2e)
6) Compost, Kitchen Waste	4,380Kg or (1.58 tones CO2e)
7) Reused Water	43,000 Lt
8) Recycled Water for Flushing	109,500 Lt
9) Drinking Fountain	18.45 Kg. Plastic
10) Education	160-240*X*Y tones CO2e

Explanation:

- 1) In Kunming about 80% of a year (292 days) is sunny, traditional water heating element requires 180Kw electricity to heat up 3000 liters of water, $292*180= 52,560Kw$;
- 2) Remainder of the year (73 days) will need alternative heating for water. Air Exchanger consumes about 30KW to heat up same amount of water, which represents 10,959 Kw electricity saved ($73*180Kw - 73*30Kw$);
- 3) 120 standard 60w light bulbs consume 21,024Kw per annum. Same number of energy saving light bulbs plus LED (mixed average) needs 5,256Kw;
- 4) 100Kg tumble dry laundry consumes 138Kw electricity per day or 50,370Kw per year. Based on 60% occupancy and 80% sunny day = 24,177Kw saved;
- 5) Washing and drying laundry on site avoid collection and delivery. $110 \text{ times} * 80Km = 8,800 \text{ Km}$ travelling per year;
- 6) Compost, rubbish segregation, kitchen waste for animal feeding, paper made from used papers and soap made by means of used oil reduce 4.38 ton of garbage per year ;
- 7) Used water for gardening saves $200\text{Lts} * 219\text{days} = 43,000 \text{ Lts}$;
- 8) Recycled water for flushing saves $500\text{Lts} * 219 \text{ days} = 109,500 \text{ Lts}$; In-house drinking fountain reduces 50 bottled water consumption /day. $50 * 219 \text{ days} = 10,950 \text{ plastic bottles per annum}$ or equivalent to 18.45Kg plastic;

4-6 environmental awareness/low-carbon living courses will be organized. Each of these courses takes about 30 people. Participants are aimed at youth leaders, social workers, NGO staff members and volunteers. In return these participants could influence considerable number of people from all walks of life through their daily work contact and activities. Assuming X number of people will be influenced by these participants and each of them can save Y amount of CO2e, the resultant tonnage of CO2e saved will be $120-180*X*Y$.

Saved Funds and ROI

Per Annum	Qty*Cost		GBP
Solar Heating Saving	$52,560Kw * 0.12p$	=	£ 6,307
Alternative Heating Saving	$10,950Kw * 0.12p$	=	£ 1,314
Lighting Saving	$9,455Kw * 0.12p$	=	£ 1,134
Laundry Nature Drying	$24,177Kw * 0.12p$	=	£ 2,901
Used Water for Gardening	$43,000Lts * 0.002p$	=	£ 86
Recycled Water for Flushing	$109,500Lts * 0.002p$	=	£ 219
Mileage saving	$8,800Km * 0.1P$	=	£ 880
Annual Saving	£ 12,841		

Fund saved will be used in supplement of sustainable and social learning activities organized by the hostel and Yunnan Heart to Haert Community Care.

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