

→ Building work brief

An architectural brief to build two innovative, modern classrooms from local materials at Hunar Ghar. March – June 2010.

Hunar Ghar currently has 5 complete classrooms, 2 almost complete, an office, store rooms, composting toilets, kitchen and fire wood storage lean-to, as well as a few water tanks. So that we can increase the child capacity of Hunar Ghar, we must build new rooms for the children and teachers to use each year.

Aim

It would be ideal if you could build two new rooms, but you need not be limited to this. A broad plan would follow:

- Investigate local building methods and materials
- Design contemporary structures that are rooted in local design and method, but incorporate more modern applications of the same
- Build two rooms using local materials

This planning structure would ensure that keep to the Educate for Life broad objectives of being economically, environmentally and socially sustainable.

Economics

Mud, stone and wood are cheaper than cement and steel. They are produced locally, which means money spent on their purchase goes into the local economy, rather than to multinational companies necessary for eg steel purchasing. It also supports local trades and non-industrial job opportunities.

Environment

Mud, stone and wood are, obviously, natural materials. They are low-energy materials; as they are harvested by hand the only non-renewable energy consumption is the short tractor journey to get them to site. If harvested responsibly, they are available in limitless quantities. They are non-polluting materials. Cement and steel have high environmental impact in materials harvesting (mega-mines etc), high energy consumption (smelting etc). When our rooms come to the end of their life, potentially in a couple of hundred years if constructed properly, they will leave zero foot-print.

Society

As mentioned, it creates non-industrial, local job opportunity. In Hunar Ghar we advocate reforestation and teach our children about it, so in time we can rejuvenate greater sustainable forestry practices. Cement etc industries have high negative social impact, especially in developing countries where the rights of local village people are not well protected, where whole cultures can be wiped out by industry greedy for ore, their homes knocked down and fields poisoned. We aim to minimise our involvement in such activities.

Balance and protectionism/isolationism

That said we are not extremist in our approach. If we need to use cement or steel in applications where they are the most suitable materials without comparable preferable alternatives, we will. The idea is simply to be mindful of all aspects of a process and balance them with an economics view that looks at people, culture, environment, capacity and sustainability in the balance sheet, along side the financial.

Current building structures

Hunar Ghar rooms are built in the local style of locally quarried stone walls, using mud as a mortar, up to a height of around 7-8 feet, 18 inches thick. A locally felled wooden structure of hand finished wooden beams rests on top of this with mortise and tenon joints as well as iron bolted ones. The structure is rough by nature as the beams are selected from natural branches with no machine-cut straightening and although local people have a high capacity to create structures, the quality of the finishing can be lower than we'd like. Split bamboo is then nailed on to support the tiles. The tiles are hand shaped wood fired from clay and mud. They do not fix together firmly but lie on top of one another. They discharge most water but easily shift in firm winds, creating leakage. Foundations and the first 6 inches above ground level of the wall are constructed with lime mortar, as a precaution to potential water damage.

Potential building materials

Possible building materials for the new classrooms are:

- Stone and mud walls, as described above.
- Adobe bricks
- Compacted earth walls
- Light-weight bamboo structures
- Hardwood structures
- Date palm wood
- Second stories with bamboo + palm frond + mud floors
- Dry-stone walling
- Modified tile roofs
- Thatching
- Shingle roofs
- Natural living roofs (eg herb gardens on top)

Your investigation will find more locally adopted methods or other non-local but equally sustainable methods.

Co-creating

An important aspect of the learning system at Hunar Ghar is the integration of multidisciplinary learning through projects and project opportunity, learning that happens not through dictation and classes but the democratic and team enabled working towards a common end goal, in this case the classrooms. As such the school staff and children should be involved as much as possible through the process and considered contributors to the design, function and construction of the finished classroom – we don't isolate or separate our children from the development of their school as passive, uninvolved, learners.

It will be the teachers' responsibility to convert your work into a meaningful learning experience for the children, but you should be mindful of establishing a clear and systematic process through which the teachers and children can be involved. This will centre around clear communication with them about ideas and thought processes, and referring to them for ideas and decisions. Lack of common language with the teachers will make this less easy than it would otherwise be, but you can communicate through Deepak, our coordinator, who speaks excellent English.

Deadlines

From June onwards the rains can begin. During this time building becomes difficult, and rain damage to unprotected mud walls can cause work duplication. The run up to the rainy season is also when most people are in need of work, and so our potential labour force is at its largest and most needy. After the rains start the builders revert to their usual farming practice, and so labour becomes short and work stops, potentially exasperating the potential rain damage to unfinished work.

Other potential deadly is threatened by an inconsistent supply of materials, again labour and seasonally dependent. It is best to plan and order materials well ahead, and factor for delay.

How we suggest you work

Ed and Ash will be there to help as necessary. Your main contact will be Deepak, Hunar Ghar coordinator. He speaks excellent English and can act as a far greater translator with the village than we can. Between us we will keep up a strong conversation of what is needed and how we are going to go about creating it.

We have a house that you are welcome to stay at with us. We all share cleaning, cooking etc responsibilities – we are a little family there. Our home is in Mandwa, a village 1 km from the school. We walk to and from school each day. In Mandwa there are basic provisions, otherwise more can be bought from Swaroopganj, which is 40 minutes on the motor bike. If you can ride a motor bike you are welcome to use it in the local area if the local transport options are proving un-useful. If you can't ride a bike, you can learn then use it. We all contribute money towards living in the house, such as food, which you are welcome to do. If you don't feel that you'd like to or can't, then we will cover it for you. Any other costs that you may incur related to the charity we reimburse.

We have telephone and internet in our house, so you can easily keep in touch with friends and family, and they with you, while with us.

Abu Road is the nearest big town, an hour and a half away but Udaipur, three hours away, is more useful. There you can also engage with the student architects in the many colleges there (they will speak English). This increases people's exposure to our school as well as being helpful to you and them, as they will be exposed to an alternative way in which they may be able to use their skills in the future and help spread the message of more sustainable development. There we also have many

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friends for having an ice coffee with and generally hanging out – it's not all hard slog!

I (Ed) will be working in Ahmedabad, 6 hours by bus, in a project-based learning school there, so will not always be at the school. You are as welcome with me there as you are in our home in Mandwa and Hunar Ghar. Ahmedabad is a large city where you can meet and engage with other interesting people and projects. In this light, I hope your experience will not be limited to us and our Hunar Ghar but you will also use working with us and your base with us as an opportunity to discover other people, places and things that are going on.

Budget

We generally build on a fairly limited budget, but this can be extended in areas, if necessary, to build a better classroom. The budget would not be too much larger than normal, if at all, as building in such a fashion will become unobtainable for financially limited projects and people, thus rendering an important aspect of the build useless. We will decide on a budget once you have done some preliminary designs and ideas in India.