Anna Heringer shares her personal story on building sustainable homes in rural Bangladesh together with the local community and students from BRAC University in Dhaka (Bangladesh), BASEhabitat and the University of Art Linz (Austria).

Born in October 1977 in Germany, Anna studied architecture at the University of Art in Linz, Austria from where she graduated with her diploma thesis: “School: handmade in Bangladesh.” Together with Eike Roswag and a team of craftsmen she realised the “Handmade” school in Rudrapur, Bangladesh. The project won several awards, amongst them the Aga Khan Award for Architecture. She is working as an architect and consultant mainly in developing countries such as Africa and Asia. Anna is also teaching at the university in Linz (studio BASE habitat), and more recently at the Technical University in Stuttgart as a visiting professor.
Three families, 13 architecture students, 16 craftsmen, eight water-buffaloes and three houses…

Eight students from BRAC University in Dhaka (Bangladesh) and five students from BASEhabitat and the University of Art Linz (Austria) came to the remote village of Rudrapur, in rural Bangladesh, to work together with the local people on a model for a sustainable, modern architecture.

The challenge for the pilot project on rural housing was to improve the living conditions in the rural areas while maintaining the existing level of sustainability as well as to meet the needs and dreams of the people.

Three families dismantled their old homes in full trust that we will build a house they’d feel proud of and would serve their needs.

And so it began: Design, planning, building, site supervision, communication with clients and villagers, trial and error…

Every day, neighbours and strangers gathered around the sites, gave comments and started discussions. The most ‘popular’ site was at Rahini’s house that was just beside the main road, next to the market. Fifty, sixty and sometimes more curious visitors who wanted to know why we build in mud, and what was it that we were adding to the new house special.

“A house made of earth will never be as attractive as a brick building to the villagers. Even when it is cheaper,” says Mahbub Islam, who has been involved in rural development work in Bangladesh for more than 20 years. I asked: “So you think it is not worth the effort, doing research on improving loam building techniques?”

He replied: “It’ll be a big challenge to implement the results. What counts are not only rational aspects like durability, cost-effectiveness or sustainability. You have to meet the dreams of the people and add a special value to the loan houses. Something that touches them emotionally.”

So what is it that we could add?

We did a lot of experiments to improve the foundation, introduced a damp-proof course, and made the walls stronger through a reinforcement with straw. But most of all, we tried to focus on creating a perfect indoor climate through coconut fibre insulation, glass windows and lots of openings for cross ventilation and a good design. I don’t think we can convince someone with rational arguments about sustainability, but we could do so with a comfortable building that one can be very proud of.

A good design doesn’t need more money; we only need creativity, some reflection, and a little bit more intelligence maybe. Because this is not a matter of being poor or rich. Sometimes even limitations can be the best inspiration to stimulate creativity.

The new model

The houses for the three peasant families follow the pattern of the traditional homestead—functions like kitchen or sanitary units are still in external buildings.

Thus, the new model is rooted in the traditional and current lifestyles of the peasant families with sensitive but crucial improvements in terms of comfort, safety, durability and a clearly defined space. Local materials like earth, bamboo, straw and coconut fibre were used as major construction materials.

An optimised indoor climate (insulation with coconut fibre and earth as thermal mass, glass windows and lots of openings for cross ventilation and a good design) assures a high level of comfort. In contrast with the traditional houses, which very often have no windows, these new houses have lots of openings for cross ventilation and natural lightening.

Durability is assured due to an improved building technique. The first floor brings in a totally new experience of being ‘uplifted’, enabling the residents to enjoy privacy and a view. The remaining land will be used for gardening, as a means to overcome the present severe food crisis.

The hope for the future is that this new understanding of local capacity and identity would motivate building design that is orientated towards exploiting what’s locally available, an architecture that has a fresh and unique language as well as a strong self-confidence by being self-sufficient, which is an important basis of sustainable development.
The search for the perfect home

Society in Bangladesh is changing. Although it is still strongly rooted in agriculture, people are getting more educated—privacy and individuality are gaining more importance. A house is no longer just a shelter to store things or to sleep in at night; it has evolved to becoming more defined as a home.

The village elite is building in bricks; the government or non-government organisations have buildings made out of brick or concrete; and the same applies to the temples and mosques. The hierarchy of materials is very clear.

The perfect home seems to have nothing in common with the traditional house in earth or bamboo. Is modern architecture a question of materials or architectural language?

Architecture will play a decisive role in the future development of Bangladesh. The population of Bangladesh was 147 million in 2006 (source: Wikipedia, 2006). About 75 percent of all Bangladeshis live in villages, most of them in larce or bamboo houses. Although these traditional building materials are highly sustainable, people are seeking for materials such as bricks, concrete, and corrugated iron sheets that are supposedly more durable. In terms of the consequences of energy consumption through the production of these materials, such a trend could have severe consequences on the global warming. What will happen to the balance of oxygen and carbon dioxide in the atmosphere if about 80 million people start building with bricks, concrete and steel? What happens to the bio-capacity and the economy in Bangladesh if the trend of horizontal expansion continues and people lose more and more of their most precious resource—land?

Six strategies to influence sustainable development in Bangladesh

• Vertical expansion: two-storey houses. If all these millions of Bangladeshis who still live in rural areas are going to build two storeys instead of one storey, it would set free a huge capacity of land. This could be an effective action against brain drain. Where skyscrapers in cities need a lot of energy for construction and grey energy due to the need for more steel and cement, such two-storey buildings can be easily built with local materials.

• Combine low technology with high technology in a reasonable way with the ultimate goal to be self-sufficient.

• Low-cost local materials with a labour intensive construction can support the local economy. The building sector’s economic profit will not flow into external markets—it stays in the region where it becomes a crucial source of income generation.

• The choice of a building material is more than just a rational decision. It is also a matter of prestige, identification, Zeitgeist and culture. Sustainable construction with local materials will not stand a chance to play an important part in future architectural developments if we don’t respond to the emotional aspects as well. The challenge is to meet the needs and dreams of the people in an economically reasonable, ecological, social and aesthetic way, along with the appropriate techniques.

• Use beauty and comfort as teasers with sustainability as an underlying concept.

About self-sufficiency

Sometimes I find myself thinking that life is so perfect here in the villages. You grow what you need—a fully self-sustaining life. But why do people voluntarily leave their productive independence and make themselves depending consumers?

The source of self-sufficiency can be the result of a strong desire for being independent. But often self-sufficiency is rooted in a lack of external resources and poverty.

If the source is poverty or the absence of opportunities, it may end up in an unstable situation. The global trend is developing towards buying and consuming rather than towards self-production. Mostly, it is a matter of prestige to be able to buy materials and to hire labour. This is the case in Bangladesh too. Instead of having one’s hands and feet in dirty mud to build one’s house, buying bricks and hiring workers for building a house becomes the ideal.

Using endogenous resources is a basic principle of sustainable development work. This is also true for building materials and construction processes. Local traditional building materials such as earth, bamboo or timber are highly sustainable but people seek for materials like bricks, concrete and corrugated iron sheets that consume a lot of energy. With these materials, the profit often flows into external markets and big companies. Due to diminishing demand, traditional craftsmanship becomes less important and therefore, slowly vanishes, as does its regional identity.

To reach a stable and really sustainable level of self-sufficiency, it must be a result of free choice. For that to happen, a deep reflection on one’s own potential and direct available resources is needed, as well as a high level of trust and self-confidence.
FACTS

Clients: Dipshikha (Non-formal Education Training and Research Society for Village Development); Bangladesh, for DESI (Dipshikha Electrical Skill Improvement)
Families: Shepal Depsharma, Hemonto Ray and Rahini Ray
Place: Rudrapur, Vishnupur (Dinajpur district, Bangladesh)
Participating students:
• Students of BRAC University Chuka, Bangladesh (16 weeks): Adrita Anwar, Shoeb Al-Rahe, Tanmay Chakrabarty, Omar Faruque, Majeda Khatun, Imrul Kayes, Gazi Fazle Rahim, Suvashis Saha
• Students of University of Art and Industrial Design Linz, Austria (three weeks): Cornelia Bräuer, Katharina Doblinger, Belinda Meinhard, Verena Schlossenger, Anna Wolf

Design: Students of BRAC University, Bangladesh; University of Art and Design Linz, Austria
Supervision design: Anna Heringer, Khondaker Hasibul Kabir
Structural engineering and technical supervision: Stefan Neumann
Supervision of site: Stefan Neumann, Montu Ram Sae, Azit Ray, Anna Heringer, Khondaker Hasibul Kabir and the students
Duration: September 2007 – April 2008

The construction workers and craftsmen are all from Rudrapur and Vishnupur.