

Description of the project



The instructor during "Team Building" session, Photo Credit: Hand Over Team



Team members agreeing on the code ceated by them about how to work effeciently. Photo credit: Hand Over team



Team member working on the design proposal. Photo credit: Hand Over Team



The instructor and team members during designing session. Photo credit: Hand Over team

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 • Team building & cross cultural training
 • How to be a Human Centered Designer?
 • Field Research
 • Can we build sustainably? (Rammed earth construction)
 • Design concept
 • Introduction to Project Management
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 additional source of income. Together, participants and residents will
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WHAT WE HAVE DONE UNTIL NOW:

- We have a team of brilliant architecture and civil engineering stu
- We started our training sessions in February 2015.
- We reached to an agreement with a family in "Abu-Qarn" district to re-build their house as our first prototype.
- We have a board of advisors, formed from intellectual consultants,

OUR FUTURE PLANS

Once the first prototype is successfully achieved, residents will own the rebuilt homes through offering flexible payment arrangements in
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 The expansion of the project will continue in the same area, with plans to re-build five houses within the district in the second year
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 with Ezbet project in terms of urban planning to "Abu-Qarn" district,
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Collaboration with disadvantaged people

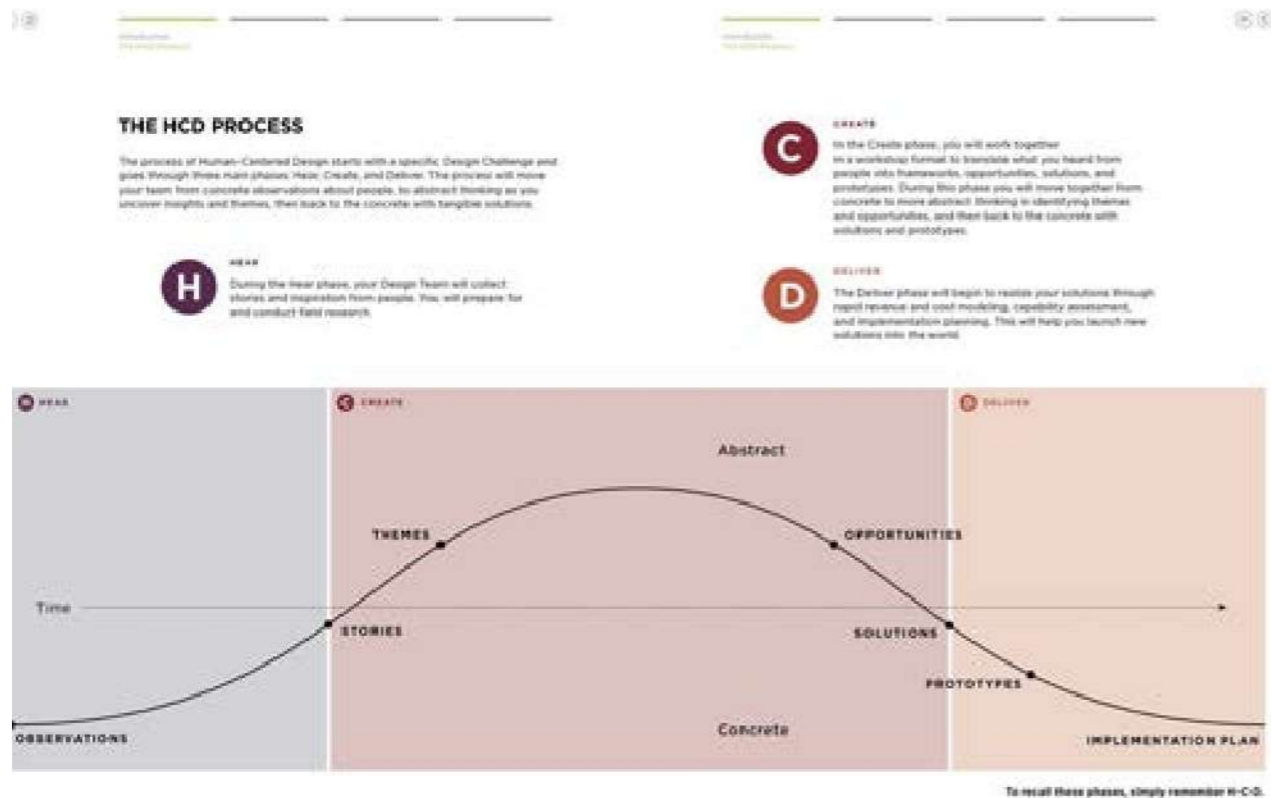


Team members interviewing the residence of the house. Photo credit: Hand Over team

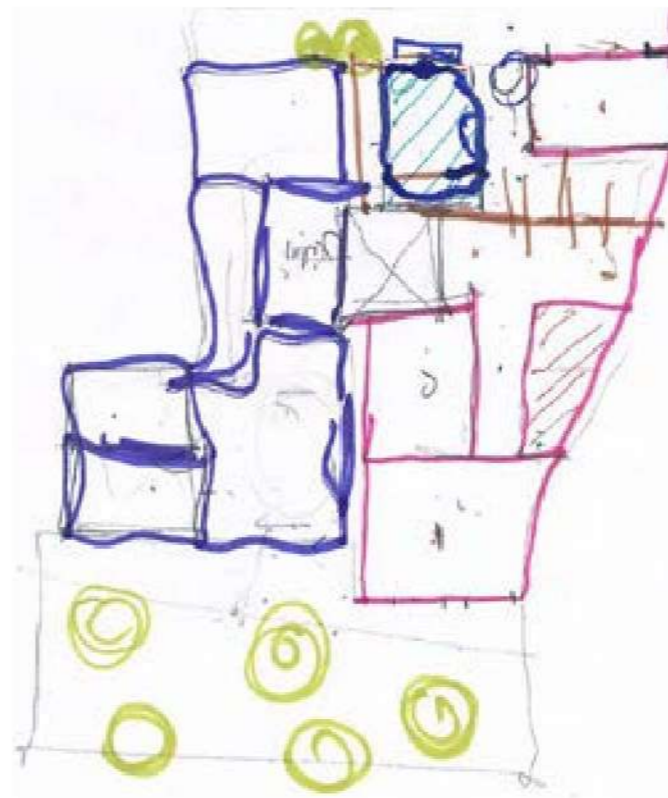


Residence of Ezbet. Photo credit: Hand Over team

Hand Over Project was established to address the housing needs of disadvantaged people at Ezbet Abu-Qarn, Cairo, since it's one of the informal areas that form 60% of Egypt's housing. With diversity of social, financial, educational, cultural and religious backgrounds, the project will work with the community to create a sustainable living environment. The process of the Human Centered Design starts with a specific design challenge and follows three main phases: Hear, Create, and Deliver. The process will guide our team from initial observations to a final implementation plan. The process will be iterative, allowing for continuous improvement and adaptation to the needs of the community. The process will be guided by the following principles: empathy, collaboration, and user-centered design. The process will be guided by the following principles: empathy, collaboration, and user-centered design. The process will be guided by the following principles: empathy, collaboration, and user-centered design.



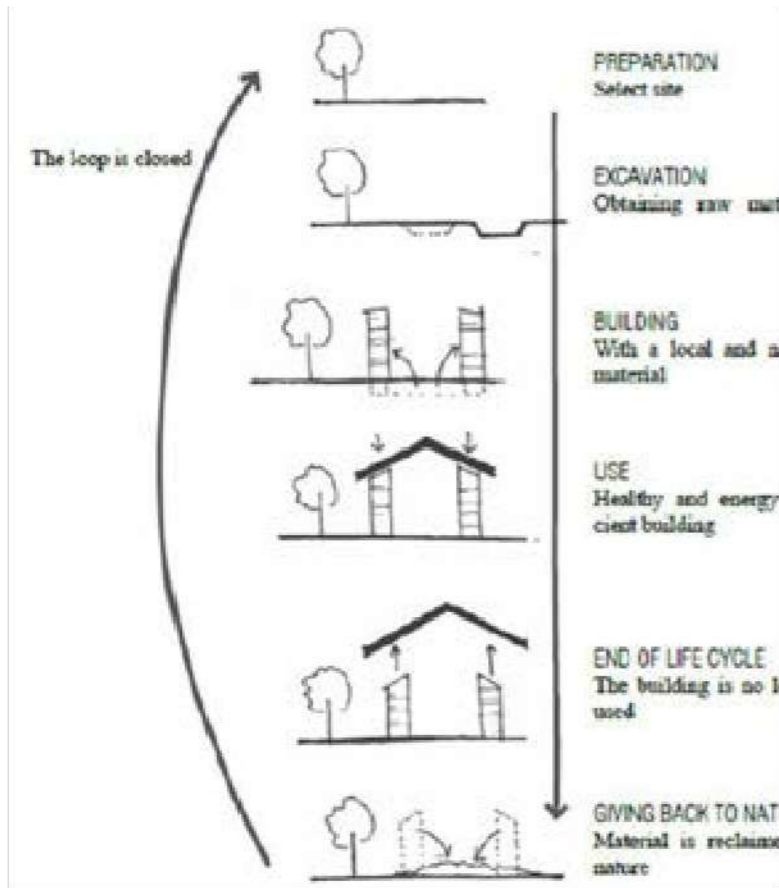
The Hear Create Deliver process from the human centered design tool kit.¹



Hand drawn illustration from the residence of the house about what they hope will be achieved. Photo credit: Hand Over team

1. Source (Human Centered Design Toolkit)

Technology Used In The Project

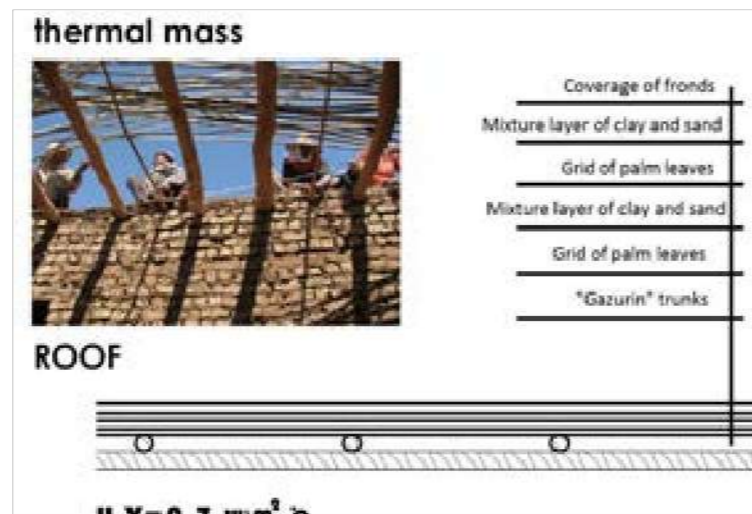
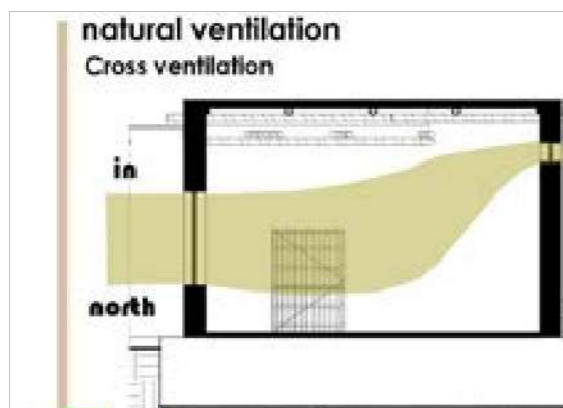
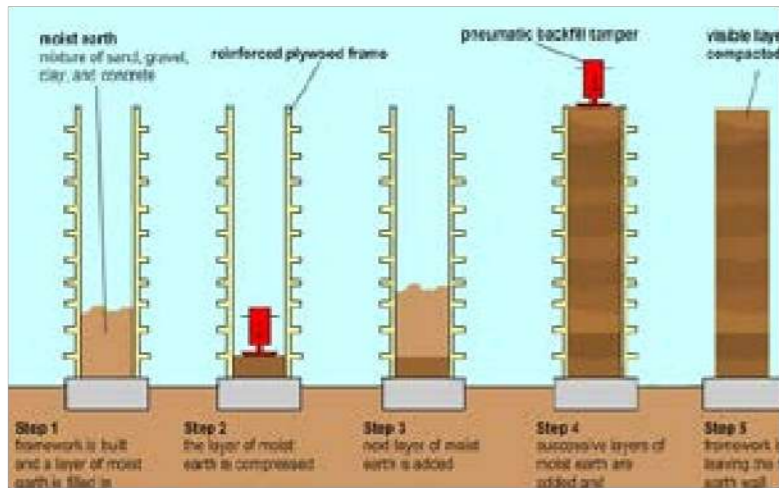


Participation of residents in the construction process
Photo credit: Ahmed Abdel Gawad



Using plastic bottles on the roofs which capture sunlight will be used in order to provide natural daylight.
Photo credit: instructables.com

Concept: From cradle to grave
Photo credit: DAVID MARTINEZ



Passive system
Photo credit: Unknown

Achieving sustainability can be through many different aspects. In Handover Project we chose to build the house with rammed earth, which is in our opinion the most sustainable solution. This choice was made based on many different factors.

Rammed Earth is a sustainable and green method used to build houses of wall bearing type. A mix of sand, clay and gravel are rammed into wooden forms and compacted creating the walls of the house. The roofs consist of main and secondary beams of wood covered with straw and a mix of clay and lime for water protection. Hopefully we would manage to decrease the carbon footprint by using this environmental method of construction.

In Ezbet Abu Qarn, there are many available local materials which are used in the construction of rammed earth like clay, sand, gravel and wood. Using these local materials would benefit the area as well as decreases transportation costs and carbon footprint. Ezbet Abu Qarn has factories that recycle cardboard and paper which we thought would be useful for thermal insulation in roofs since cardboard is a low conductor of heat.

People of Ezbet Abu Qarn are very "handy" people. The people living the house that we hope to rebuild using rammed earth were the ones who built the house they live in. Although they have low experience but they managed to build the house and learned different ways of repair and maintenance.

Rammed Earth is a very simple construction method that can be easily taught to anyone and special skills are not a necessity. Teaching the family the technique would be easy so in the future if they wish to build another floor to their house for their children, they would be very capable of doing so. If the family managed to master this technique it might be a future source of income for the family.

Natural methods of ventilation and lighting are a main aspect that we focus on. After knowing the sun and wind directions we decided on having a court in the middle of the house in order to allow a large amount of air to enter into the house. The moist rammed earth walls are also a very good method of cooling on the inside of the house and provide very high thermal insulation since Egypt is a very hot country. Using plastic bottles on the roofs which capture sunlight will be used in order to provide natural daylight.

After thorough study of the site history and culture we were proven that rammed earth is the most suitable solution since the land is a historic one. Having the exterior design in that way was since many of ancient mosques are located around. Also when we talked to the owners of the house they described designs that are basically Islamic designs of arches and so. Since the technique is very easy we hope that the whole area would start noticing this house in particular. Hopefully, people of Ezbet Abu Qarn would apply this sustainable solution to their houses and have the whole area with rammed earth houses in the future.

Improving slums: five key dimensions²

Access to safe water



A household is considered to have access to improved water supply if it has sufficient amount of water for family use, at an affordable price, available to household members without being subject to extreme effort, especially to women and children.

Access to sanitation



A household is considered to have adequate access to sanitation, if an excreta disposal system, either in the form of a private toilet or a public toilet shared with a reasonable number of people, is available to household members.

Secure tenure



Secure Tenure is the right of all individuals and groups to effective protection by the State against forced evictions. People have secure tenure when:

- There is evidence of documentation that can be used as proof of secure tenure status;
- There is either *de facto* or *perceived* protection from forced evictions.

Durability of housing



A house is considered as 'durable' if it is built on a non-hazardous location and has a structure permanent and adequate enough to protect its inhabitants from the extremes of climatic conditions such as rain, heat, cold, humidity.

Sufficient living area



A house is considered to provide a sufficient living area for the household members if not more than two people share the same room.



A hole in the ceiling made of cardboard in the house being redesigned. Photo credit: Hand Over team



The corridor in the house being redesigned. Photo credit: Hand Over team



The view from the top of the house being redesigned. Photo credit: Hand Over team

When using the context of “human rights,” we are talking about something basic. Every person is entitled to certain fundamental rights, simply by the fact of being human. These are called “human rights” rather than a privilege. Recently with the deterioration of Urbanism the informal places are growing and the houses became Unfit for human life. Thus, comes the Hand Over project, which one of its goals is to provide the basic habitat for the human being, and to help the people living in Ezbet-Abu-Qarn to live the life which is a minimum basic right for every human being. These basic needs being access to basic sanitation like private toilets and clean running water, access to improved water source, feeling secure in their house hold by having materials that can't be easily bypassed like mud bricks and unlike cardboard, having a durable house that can withstand earthquakes and natural disasters, and having sufficient living space in terms of public and private need. Furthermore, Referring to what was mentioned in “Planet of slum”, written by Mike Davis, Lately there has been a revolution in terms of NGOs' work in the third world cities, and it reshaped the urban development. Therefore, we are trying to train the people living in the slums to build their own houses, thus, giving them the tools to provide the basic human need for themselves.

The five points that are a human right for slum dwellers²

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Hand Over Team

2. Source (UN habitat)