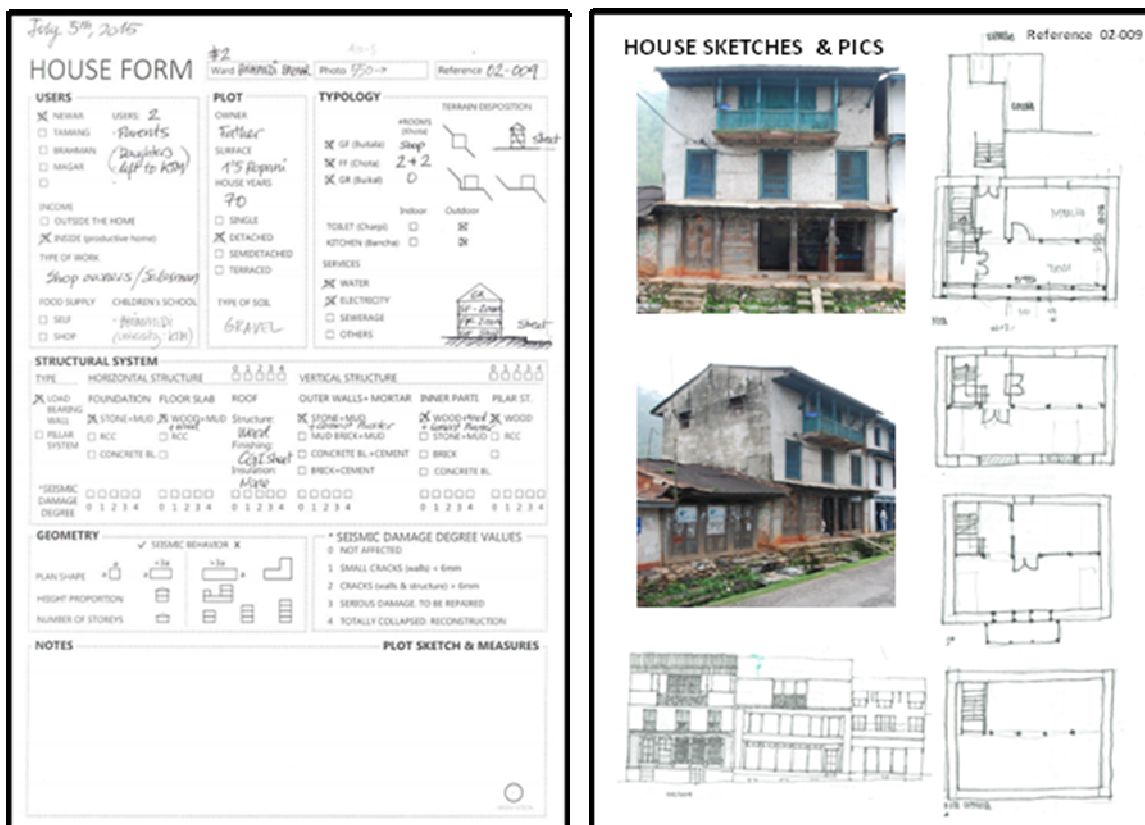


AWASUKA, Habitat Improvement Program

Out of 1,100 registered houses in Bhimphedi, 200 were destroyed by the earthquakes, 600 were seriously damaged and only 300 remained intact. As a result of the large number of affected houses, *Amics Del Nepal* has decided to start a reconstruction program for habitat improvement in this village.

The main two reasons for this initiative are, in the first place, to have an expatriate coordinator living in Bhimphedi and an architect coordinator in Barcelona, both within *Amics del Nepal* team; and in second place, having had many NGOs contacting *Amics del Nepal* NGO, offering their help, collaboration and financial support on reconstruction projects in Nepal. The most important ones are: Caldes Solidària, offering financing support; BASE-A, supplying an architecture technical team expert in cooperation; and CCD-UPC, giving logistical support to the technical team and supplying an expert advisor throughout the program: Ph.Dr. Architect Pedro Lorenzo.

During July's first fortnight, an identification journey was led by the three NGOs: Amics del Nepal, Base-A and CCD-UPC. Meetings with several public and private institutions were held, both at urban and rural levels. Also, more than sixty houses were visited, all in the different neighbourhoods of Bhimphedi, in order to study their damage degree related to their construction typology.



July 5th, 2015

HOUSE FORM

#2
Ward **Bhimphedi** Dist. **Palpa** Photo **150** → Reference **02-009**

USERS
 NEARBY **USERS: 2**
 TRADING **Parents**
 BRANDED **Daughters (left to right)**
 SANGAR
 INCOME
 OUTSIDE THE HOME
 INSIDE (productive home)
 TYPE OF WORK: **Shop owners / Suburban**
 FOOD SUPPLY: CHILDREN'S SCHOOL
 SELF **Parents (mostly left)**
 SHOP

PLOT
 OWNER: **Father**
 SURFACE: **1.5 Apan**
 HOUSE YEARS: **70**
 SINGLE
 DETACHED
 SEMI-DETACHED
 TERRACED
 TYPE OF SOIL: **GRAVEL**

TYPOLGY
 ROOMS: **2+2**
 OF (kitchen) **Shop**
 IF (kitchen) **2+2**
 GR (kitchen)
 TOILET (change): Indoor Outdoor
 KITCHEN (change): IN OUT
 SERVICES:
 WATER
 ELECTRICITY
 SEWERAGE
 OTHERS

STRUCTURAL SYSTEM
 TYPE: **0 0 0 0 0 0**
 HORIZONTAL STRUCTURE: **0 0 0 0 0 0**
 FOUNDATION: STONE-MAID WOOD-MAID RCC
 FLOOR SLAB: RCC
 ROOF: STONE-MAID WOOD-MAID CONCRETE BL + CEMENT
 OUTER WALLS + MORTAR: STONE-MAID MUD-BRICK-MAID
 INNER PARTS: WOOD-MAID STONE-MAID RCC
 PEAR ST.: STONE-MAID RCC
 SEISMIC DAMAGE DEGREE: **0 1 2 3 4 0 1 2 3 4 0 1 2 3 4 0 1 2 3 4 0 1 2 3 4**

GEOMETRY
 SEISMIC BEHAVIOR X
 PLAN SHAPE:
 HEIGHT PROPORTION:
 NUMBER OF STOREYS:

SEISMIC DAMAGE DEGREE VALUES
 0 NOT AFFECTED
 1 SMALL CRACKS (width < 6mm)
 2 CRACKS (width & structure) > 6mm
 3 SERIOUS DAMAGE TO BE REPAIRED
 4 TOTALLY COLLAPSED RECONSTRUCTION

NOTES
PLOT SKETCH & MEASURES

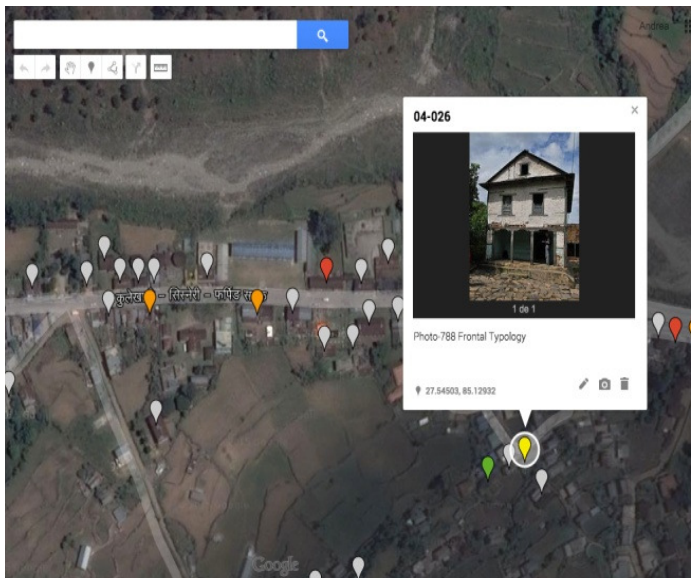
HOUSE SKETCHES & PICS

Reference 02-009

The sketches and photos show a two-story house with a balcony, a damaged exterior wall, and various floor plans and elevations.

A detailed form was made of every visited house, and through its typology analysis, some interesting findings on technical improvements were established, which should be implemented in many houses. At the organizational level, one of the trip's highlights was the finding of a local partner to host the program: the agricultural cooperative called: Agragaami Sahakari Krishi Krishak.

The visited homes were referenced and located in Google Maps, coded with a different color depending on its Seismical Damage Degree (SDD).



- 4-Seismic Damage Degree
- 3-Seismic Damage Degree
- 2-Seismic Damage Degree
- 1-Seismic Damage Degree
- 0-Seismic Damage Degree

- ★ 5-Intervened Construction
- ★ 5-Intervened Construction NR

After the trip, the technical team led by Pedro Lorenzo made a comprehensive report which established the basis of the program: contributing to improve the habitat of the population affected by earthquakes, both through their homes and their living conditions, in order to improve their response to new earthquakes. The program name is AWASUKA, after the Nepalese words *Aawaas Sudhar Karyakram*, meaning: Habitat Improvement Program.

The aim of AWASUKA is to improve two equally important aspects: social organization and building techniques. From the technical field, there will be three different lines of action: reconstruction, repairing and preventive retrofitting. Different antiseismic prototype houses will be developed, always using local materials and improved techniques; and contributing to the training of mistris (Nepalese masons), in correcting the inefficient use of traditional techniques. From the social organization, participative design workshops and social trainings will be held, to strengthen the population's organizational capacity, management and decision making. This entails that the action to be taken does not involve a dependence of the population, but rather makes it active, having the knowledge to react positively to new earthquakes.

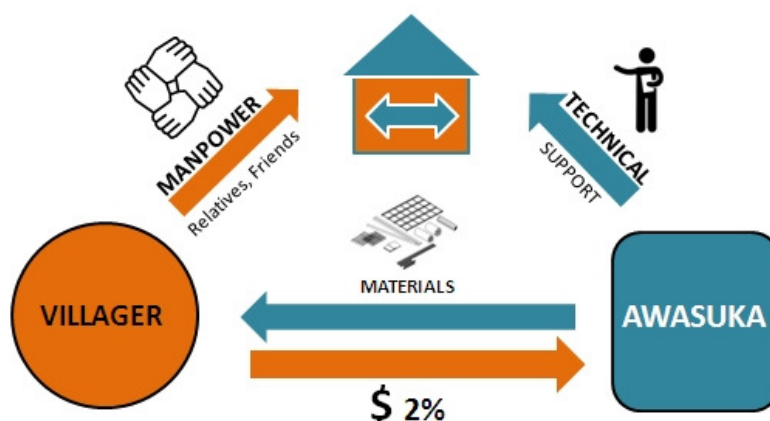


In Nepal, central government is acting apparently in a logical way, but the true reality is translated into a sum of actions of dubious effectiveness. In rural local government, the organizational level is very poor: it is still based on family subsistence economy. Even though, the creation of local cooperatives is growing and this is strongly benefitting the program.

In Bhimpheedi, the agricultural cooperative Agragaami will be in charge of hosting the *Habitat Unit* called **Bhimpheedi AWASUKA**, which will be coordinated by a *Management Board*, formed by people from Agragaami and from the Program. A part from that, there will be a *Follow Up Board* supervising the program externally, formed by Amics del Nepal and other Program partners, like: Base-A, CCD-UPC and some investors.

With this organization, the Program is willing to ensure its continuity and expansion, depending on the availability of funds and the amounts the loaners will pay back. According to the usual prices in international cooperation, there is a forecast of 110,000€ of minimal annual budget to work in 50 houses and 213,000€ as the optimal budget, that would allow to work in 100 houses. Once this organizational system has been implanted, it can be replicated in other communities, this is one of the main highlights of AWASUKA.

To understand the basic operation of Bhimpheedi AWASUKA, let's explain an example of a family that enrolls in the *Habitat Unit* of the Agragaami Cooperative to request home improvements. First, the *Follow Up Board* selects and prioritizes the interventions. Then, the AWASUKA Technical Team establishes the type of intervention and the needed materials, fixing materials' cost, interests and return periods. After that, AWASUKA facilitates materials and technical support to the family, while the family provides the manpower. Then the building process starts, meantime the family receives workshops of building and social techniques. This moment is crucial, so that the families understand the importance of living in an antiseismic house. Finally, when the antiseismic house is finished, the return of the credit starts.



The program stages are: 1st Identification Trip and Report (July and August, done), 2nd Design of the Program Components (September and October, done), 3rd Prototype Construction (November to January 2016, in process), 4th Program Development (February 2016 to January 2017) and 5th Program Continuity (2017).

Regarding the sustainability of the program, three main aspects will be considered: environment, society and economy. In the environmental level, such actions will be done as improving the latrines' system, water treatment diffusion and chimney construction for safe cooking; local materials will be used to minimize the CO₂ emissions during the construction process. In the social level, work will be done to improve the community's resilience and the



women's involvement, so that they will be aware of the new techniques and will be able to spread them later. And regarding the economy, the rotary fund program will be autonomous and self-reliant: the initial base capital will be increased by new coming funds from different means. The rotary fund will finance reconstruction efforts through microcredit; and when returned, it will be the base of rotation.

These days, the AWASUKA teams in Nepal and Barcelona are working on the preparation of the first prototypes construction, as well as fundraising for the program. Anyone interested in contributing funds can contact AWASUKA at: bhimpheedi.awasuka@gmail.com.