# SEED PROJECT

Trascendence : "Plan Urbano resiliente"

## DESCRIPTION

Guatemala is the fourth most vulnerable country in the world according to The World Risk Index (2017), in terms of natural disasters victims. It is exposed to multiple natural hazards, such as earthquakes, volcanic eruptions (adding up: lava flows, pyroclastic density currents and lahars), landslides, tropical storms and hurricanes (BGS, 2017). The lack of housing drives the guatemalans to live in high risk zones, such as the hillsides of The Volcano of Fire.

On the 3rd of June of the present year, Guatemala´s south region was affected by the eruption of The Volcano of Fire. The impact ended more than 192 lives, within their "material goods" and 1,700,000 affected people (CONRED, 2018). The current area is inhabitable and the affected people are living in temporary houses, (this indicates Guatemala has an unefficient risk managment agaisnt natural events.)

*Photo source. Prensa Libre, 2018. Guatemala.*

## PROBLEMATIC

Inadequate post-disaster urban planification and the low integration to the current urbanization.

## GOAL

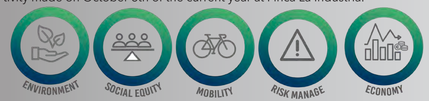
Our goal is to design a sustainable urban model *which will bring more* **stability** and a better **quality of life** to the affected community, alongside a resilient development. This model is supposed to achieve the Sustainable Development Goals giving emphasis to the first goal:" **No poverty: Eliminate poverty** requires universal social protection systems aimed at **safeguarding all individuals throughout the life cycle.** It also requires targeted **measures to reduce vulnerability to disasters and to address specific underserved geographic areas within each country.**"

## PROJECT-DESIGN PROGRAMME

The Project is located in Finca La Industria, Escuintla (A donated area by Guatemala´s Municipality). The designed project is based on 5 fundamental pillars:

**Environment/Social Equity/Mobility/Risk Manage/Economy**

Based on this 5 pillas we elaborated a programme of daily necessities, which was validated by the affected community through a community participation activity made on October 6th of the current year at Finca La Industria.



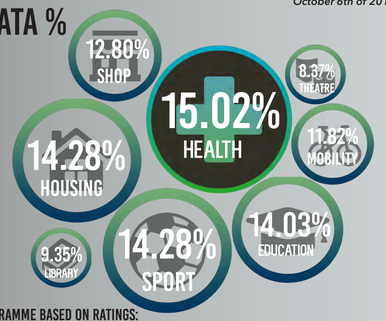

# COMMUNITY PARTICIPATION

We adopted an innovative methology urban planification and design with an active community participation to secure a resilient development. According to the book Learning from 27k (A Comparative Assessment Of Urban Reconstruction Processes After The 2010 Eathquake In Chile), it is very important to elaborate a resilient Urban Plan making decisions integrating the community opinions and aspirations.

The information obtained from the community on October 6th gave us directions for a resilient urban plan. We used our own tool called: "Diseñando mi barrio" (Designing my neighborhood), which consisted on asking a question: "Which one of these services would you like to have in your neighborhood?". The participants had to choose 6 of the 8 services, such as Schools-**education**, Recreative areas-**sport**, Clinic-**heatlh**, **Housing, Mobility** with bikes, Shop-**Economy**, Theatre-**Culture** and Library-education.

*Photo: Own source. Community participation at Finca La Industria. October 6th of 2018.*

## DATA %

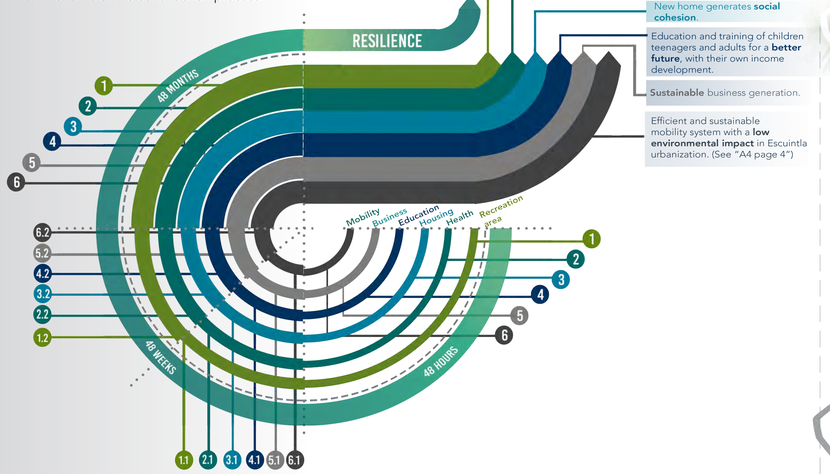



## PROGRAMME BASED ON RATINGS:

1. **HEALTH:** built a Community Health Center. (Which can be use as a Hostel in case of a future natural disaster).
2. **HOUSING:** provide a dignified housing. (It adapts to the family's needs. Pg 3)
3. **SPORT (RECREATIVE AREA):** Provide specific areas for sports activities as a cohesion point between communities. (Playing football is a cultural and social activity in Guatemala)
4. **EDUCATION:** provide two kinds of education buildings: one for children and one for adults. (Education is key for a community development).
5. **SHOP:** provide an outdoor area for small business. (Giving the victims the necessary tools to generate their own income).
6. **MOBILITY:** provide a sustainable mobility to reduce enviromental impact.
7. **LIBRARY:** provide small lecture stations distributed in the Park.
7. **THEATRE:** provide a space for cultural activities.

# DESIGN PROCCESS: PLAN 48³

We seek for adapatability and an effective building accommodation inside the Urban Plan, therefore we generated a Plan of 48 Hours/ 48 Weeks/48 Months as an activities schedule. The Plan 48³ explains the six services chosen by the community, with the different activities to realize through time (48 Hours/ 48 Weeks/48 Months). The Plan 48³ purpose is to achieve Resilience in a timeframe of the construction process.




Socially active area **reduces** violence.

**Innovative** Community Health Center (wich they didn't have before) brings them a better life quaity.

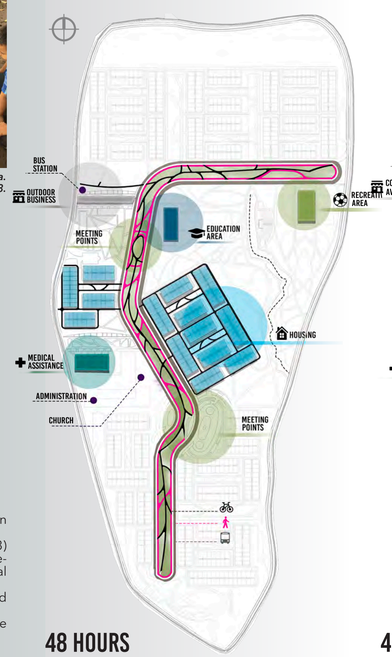
New home generates **social cohesion**.

Education and training of children teenagers and adults for a **better future**, with their own income development.

**Sustainable** business generation.

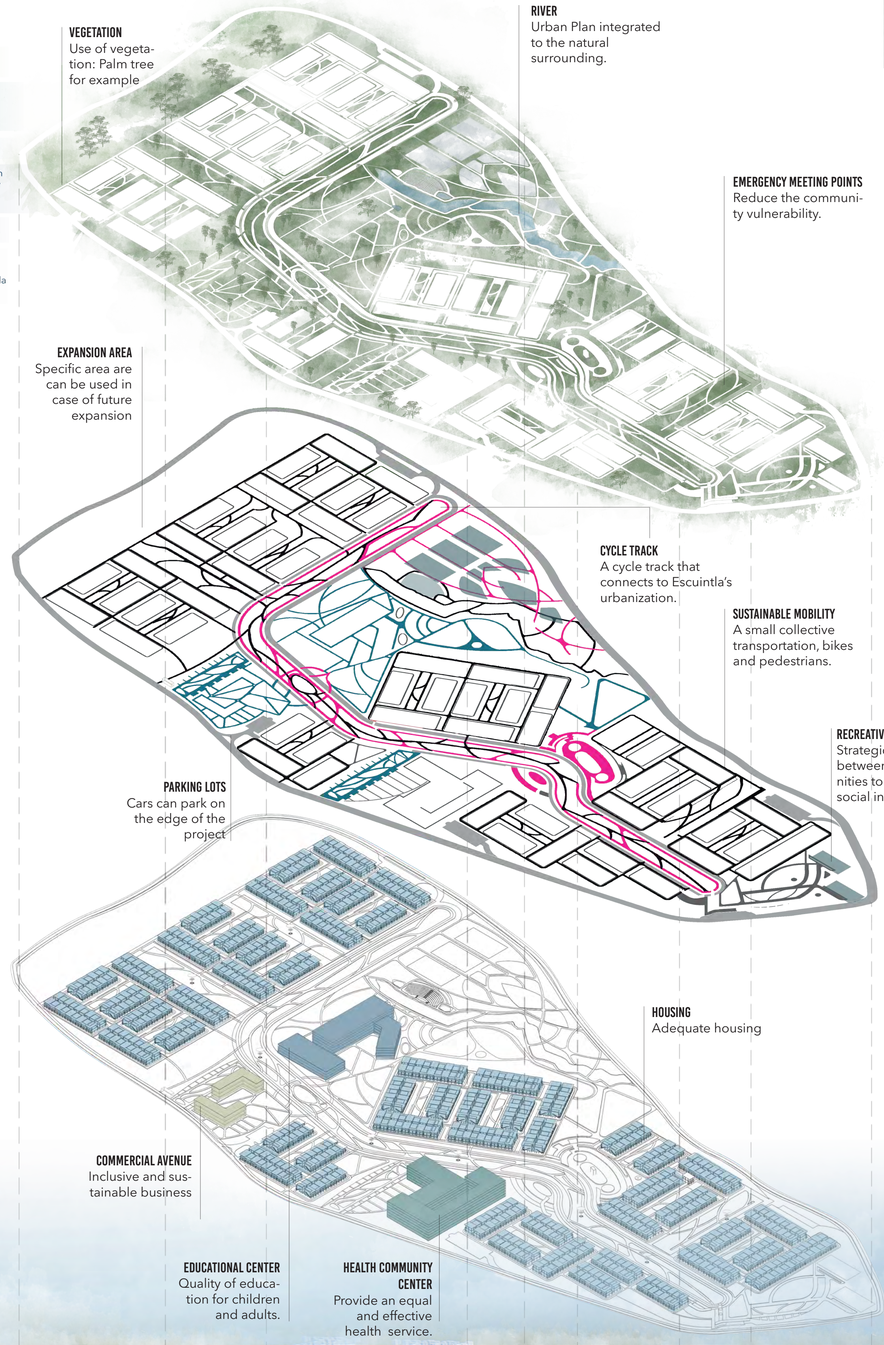
Efficient and sustainable mobility system with a **low environmental impact** in Escuintla urbanization. (See "A4 page 4")

| 48 HOURS | 48 WEEKS | 48 MONTHS |
|---|---|---|
| 1 • Sport activities generates social bonding between communities. | 1.1 • Recreative area use for different activities.<br>1.2 • Multi-purpose court consolidation.<br>• The afore mentioned area becomes a social point between the main and nearby existing communities. | 1 • A recreative - sport area is establish. |
| 2 • Medical and psychological assistance areas are established. | 2.1 • Clinics project begins and community first aid training.<br>2.2 • Different specialties clinics construction are delivered. | 2 • A Community Health Care with basic health needs.<br>• Hostel area inside Community Health Center (case of a possible disaster.) |
| 3 • Define housing prototype according to the families needs, and The Project begins. | 3.1 • House construction and The Project begins.<br>3.2 • Delivery of houses. | 3 • Housing expansion according the family's sources. |
| 4 • Academic education recognition inside affected community<br>• A common area is designed to provide education for kids and adults. | 4.1 • Reading stands.<br>4.2 • Multi purpose public school fascilities is built. | 4 • Education system adaptation.<br>• Two different kinds of education buildings according to people ages. |
| 5 • Outdoor areas for small and temporary business.<br>• Family's income generation tranning. | 5.1 • Commercial avenue project begins.<br>5.2 • A commercial avenue inauguration. | 5 • Commercial avenue exapansion will activate financially the urbanization. |
| 6 • Bicycle sharing system.<br>• Sustainable mobility norms capacitation. | 6.1 • Efficient colective transportation inside the urban area.<br>6.2 • First cycling roads. | 6 • Cycling road connection to the existing urbanization.<br>• Community adaptation to the new mobility system. |

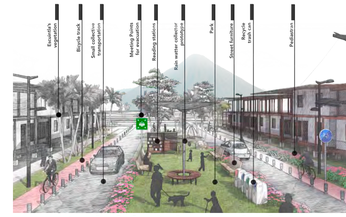


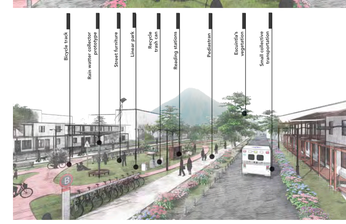

48 HOURS


48 WEEKS




48 MONTHS



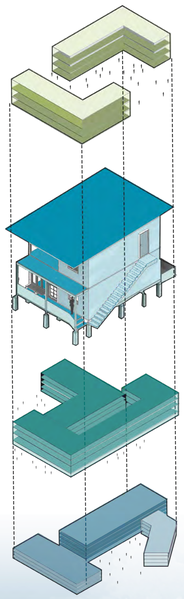

**USE OF VEGETATION**


**COMMERCIAL AVENUE**

**HOUSING**

**COMMUNITY HEALTH CENTER/ ADMINISTRATION AND CHURCH (MULTIUSE BUILDING)**

**EDUCATIONAL CENTER**



8th ICBR Lisbon | Nov 2018
**Building 4Humanity** DESIGN COMPETITION
Category 3: Resilient Projects (**Student Teams**)
Team Members: Valerio Lee/Gerardo Rozas/Alejandra Lima/Jorge Pérez/Lily Chen
Supervisor: Eduardo Andrade Abularach
University/School: Universidad Rafael Landívar, Guatemala
Project Location: Finca La Industria, Guatemala
Team Code: **B4H-DC3117**

# 1 SEED PROJECT
## PROGRAMME DEVELOPMENT

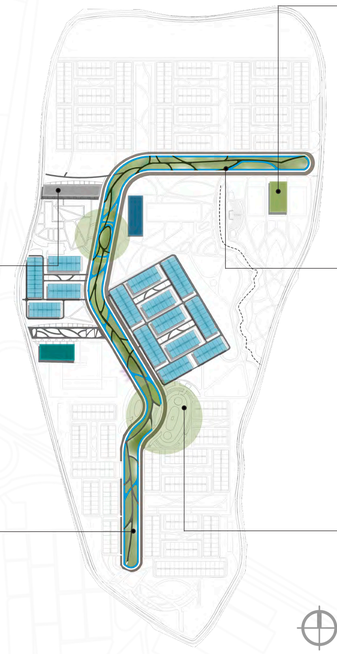
Our programme development is based on the people's interest therefore we established 5 pillars that will generate growth oportunities and resilience.

**PILLARS:** Each design pillar has a different strategy.

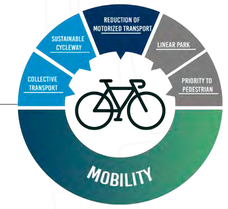
### CITIZEN PARTICIPATION:
C.P. is key for making decitions. In this case the community helped to choose and approved the necessity programme.

### ECONOMY
We offer new job oportunities to the affected community by trainning and teaching them new skills. We also provide them a specific location with a high economic potencial to reinforce entrepreneurship and a sustainable bussines.


### ENVIRONMENT
To promote an urban development in harmony with the natural surroundings, we use the natural resources of the area in a responable way, for example: the Luhumaguat river as a renovable energy producer, reutilization of rain and reuse of a local material.


### SOCIAL EQUITY
Provide social spaces to encourage interaction between communities and reduce social gaps. Generate inclusion opportunities and garantize free access to services to all habitants.

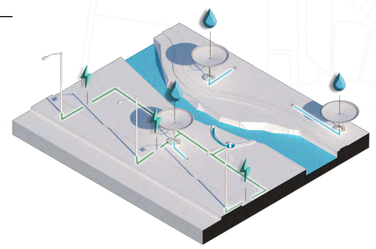



### MOBILITY
The project was planned around a sustainable mobility with bikes. It includes streets for cars, but those will only be used in case of emergency (ambulances). Vehicles will park in specific lots on the edge of the project. We provide a Collective transportation.


### RISK MANAGEMENT
Reduce the people vulnerability by the recognition and anticipation of natural hazards. Prepare the community in case of a future natural disaster. Locate "meeting points" in each park.

# 2 SUSTAINABLE DEVEOPMENT GOALS
The design programme is based on the achievement of the Sustainable Development Goals of UNDP through several strategies.

### LUHUMAGUAT RIVER RECOVERY PLAN:
Finca La Industria has a circundant river used as a drainage, therefore we propose a domestic and industrial wastewater treatment inside our Plan within an appropriate management of non-degradable waste. Also we plan to generate a sustainable energy with a passive hydroelectric energy system.



### RAIN WATER RECOLLECTOR:
Escuintla has a tropical climate, therefore we designed a rainwater recollector prototype to catch water and reuse it as an irrigation system to the green areas included in our Urban Plan.

**QUALITY EDUCATION:** Achieved by providing schools and a trainning

**DECENT WORK AND ECONOMIC GROWTH:** Achieved by providing a business avenue to

**CLIMATE ACTION:** Achieved by providing sustainable mobility which reduces environmental

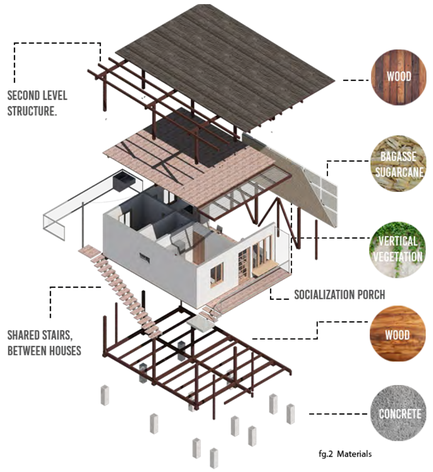
**CLEAN WATER AND SANITATION:** Achieved by providing a rain water recollector.

**AFFORDABLE AND CLEAN ENERGY :** Achieved by providing a passive hydroelectric energy system.

**SUSTAINABLE CITIES AND COMMUNITIES:** Achieved by providing an adequate housing and infrastructure.

**REDUCE INEQUALITIES:** Achieved by providing equal economy growth opportunites.

# 2.1 CASA TÍPICA
"Casa típica" offers flexibility in its distribution of spaces, allowing a participatory design and the capacity to increase it according to family's resources and needs. The structure of the second floor is designed for future expansion. We believe that the coexistence between neighbors is vital for the psychological improvement of the victims. That's why the house contemplates spaces that connect directly with the neighbors.



fg.2 Materials



fig.1. Socialization areas

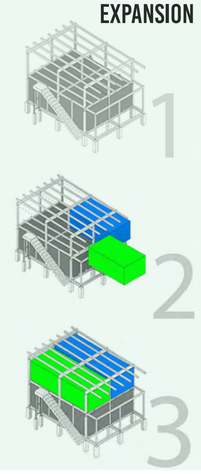
## HOUSE GOALS

The house promotes the growth and integrated development of families. Its modules can be adpated into mixed use areas for small shops or other services.

The community will directly participate in the construction and the expansion of their houses. This, through a model of personal growth ( See Pg. 1, "Education strategy").

Escuintla is characterized by its large number of sugar cane wit. So the proposal includes ecological thermo acustical wall panels, made with Sugar cane bagasse. Low Co2 emission construction materials. fig.2

Communal outdoor basins in Guatemla are places for family socialization.
Basins are located strategically at the houses gardens to promote communication between neighbors. fig.1





# 3 SECOND PHASE
Our goal is to get the best overall framming and bonding between the affected community and the existing urbanization of Escuintla.
We want to create a symbiosis between them and for that we previously analyzed the site, using a tool called: "Calidad de vida urbana" (Urban quality), which consited on evaluating from good to regular and Poor different categories, such as: Protection, Comfort and Enjoyment. The obtained information gave us a quality perception of Escuinlta.

## MOBILITY PROJECT:
According to the obtain results, we realized that Escuintla lacks of quality of life and an efficient mobility system. Therefore we propose a circuit of collective transportation to bond the new urbanization with the existing one. A first circuit is made around the Finca, La Industria, to generate a direct connection to Escuintla's Center. The Collective transportation has several stations at important points, such as: The IGSS Hospital, The Main Square, The Church, The Municipality, The Market, The Cementary and The Police Station. Alongside the collective bus, we propose a sustainable mobility with bikes from the Finca to the inside streets of Escuintla. Our goal with the Mobility Project is to generate a symbiosis between Escuintla and the Community.

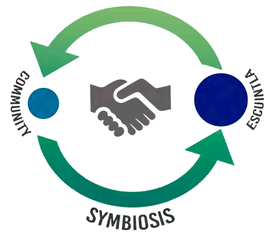
## RESILIENCE
We used the basic principals of resilience and achieved several Sustainable Goals Development thorugh our programme. Our project also achieved **resilience** by analysing different aspects, from the theoric side to the practice with the Community participation. We conclude that a **balance** between those aspects is of great importance to define a design programme.

**ANALYSIS RESULTS:**

POOR 80% PROTECTION
REGULAR 15% PROTECTION
GOOD 5% PROTECTION

POOR 40% COMFORT
REGULAR 45% COMFORT
GOOD 10% COMFORT

POOR 55% ENJOYMENT
REGULAR 35% ENJOYMENT
GOOD 10% ENJOYMENT





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