



Refugio para damnificados | Camp for Catastrophe Refugees
AURA architects | ITESM Campus Monterrey | FWC First World Camp

The present study CCR, elaborated with students at the ITESM Monterrey, MX, is part of the research 'Refugee Camp for the FirstWorld Citizen', undertaken by Emil Hrvatin and Peter Senk (Slovenia).

Refugee Camp for the First World Citizens deals with the general state of humanism and humanitarianism in First World societies. Refugee camps are by-products of conflicts in the contemporary world; as such, they can be predicted and projected, which has never been the case in the past.

Refugee Camp for the FirstWorld Citizens elaborates a refugee camp situation for individuals from the FirstWorld. It is the first settlement that is ready to accept possible refugees from the most developed areas of the world. It is conceptualized as a network node that generates integration and interaction between refugees and local people. Refugee Camp for the FirstWorld Citizens is a prototype that can be applied anywhere.¹

The CCR study contributes to the FWC project with designs and prototypes that explore new possibilities in the creation of temporary and/ or transitory settlements. The two main features underlined by the UN High Commissioner for Refugees (UNHCR) in the creation of refugee camps are: temporariness and isolation. The settlements are mostly improvised and poor urban and architectonic solutions. CCR wants to research into and evaluate UNHCR guidelines, proposing at the same time après-solutions that could provide a better urban environment. The project intends to transform the notion of refugee camps as disconnected, isolated and depending on external humanism into a connected, involved and self-sustainable settlement.

I El presente estudio, realizado con estudiantes del ITESM Monterrey, MX, forma parte de la investigación 'Refugee Camp for the FirstWorld Citizen' iniciada por Emil Hrvatin and Peter Senk (Eslovenia).

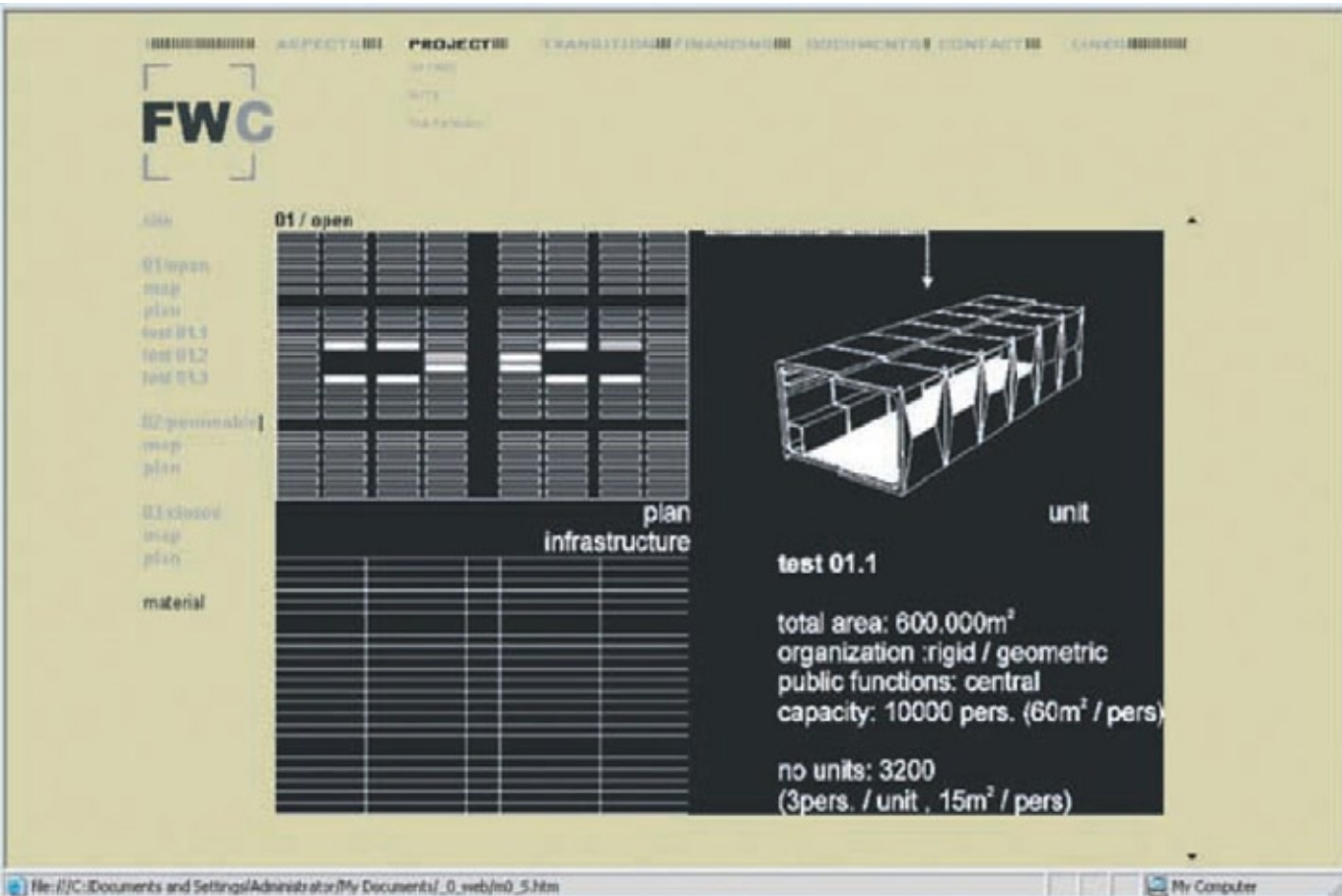
'Refugee Camp for the FirstWorld Citizen' trabaja con el estado general de humanismo y humanitarismo en las sociedades del Primer Mundo. Los campos de refugiados son 'by-products' de los conflictos del mundo contemporáneo, y como tales, pueden predecirse y proyectarse, algo que no ha sucedido en el pasado.

'Refugee Camp for the FirstWorld Citizen' elabora un campo de refugiados para ciudadanos del Primer Mundo. Es el primer asentamiento listo para recibir refugiados de las regiones más desarrolladas del mundo. Esta conceptualizado como una red-nodo que genera interacción e integración entre refugiados y población local.¹

CCR contribuye con FWC mediante diseños y prototipos para la creación de asentamientos temporales.

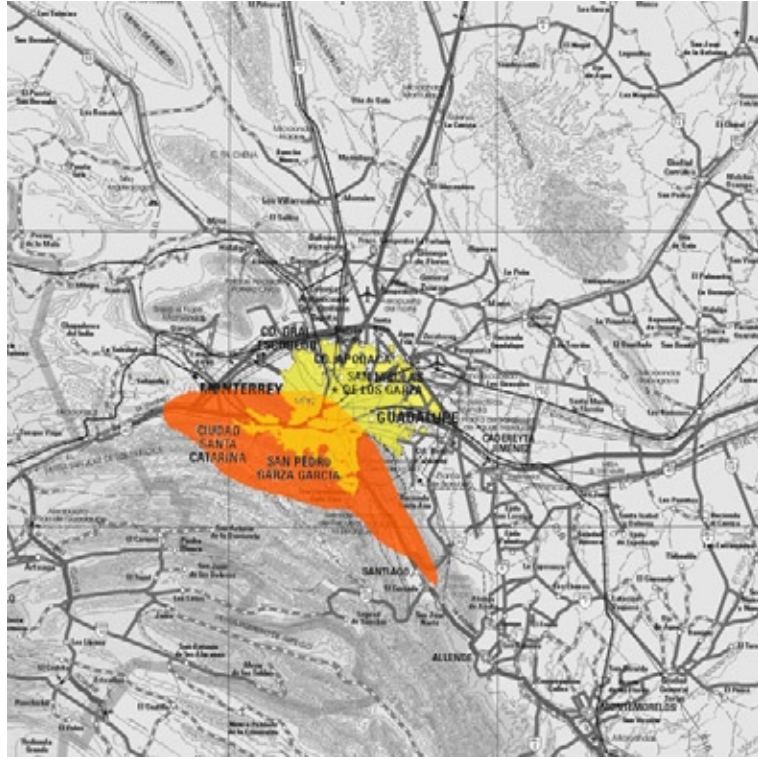
El Alto Comisionado para Refugiados de la Organización de las Naciones Unidas (UNHCR) subraya dos aspectos primordiales en la creación de campos de refugiados: temporalidad y aislamiento. Este tipo de asentamientos son por lo general soluciones arquitectónicas pobres e improvisadas. CCR investiga y evalúa las recomendaciones de la ONU, proponiendo además soluciones de calidad urbana que se anticipen al conflicto o desastre. El proyecto intenta transformar la noción de los campos de refugiados como aislados, desconectados, y dependientes de ayuda humanitaria externa en campos conectados, integrados y autosuficientes.

FWC | FirstWorld Citizen



1. by the authors
see more at www.fwc.si

Refugio para damnificados | Camp for Catastrophe Refugees



MAP OF MONTERREY | PLAN DE MONTERREY

Scenario | Escenario

Monterrey, June 7, 2004: The continuous rainfall of the last weeks brought the river Santa Catarina to raise from its usual altitude to the highest mark ever. Thousands of houses in the municipalities of San Pedro Garza García, Monterrey and Guadalupe have been destroyed or damaged. **20.000 inhabitants lost their homes and require immediate help.** As a first aid help the state of Nuevo León decided last night to **establish four temporary camps**, in order to give the refugees a first shelter and to provide them with food, medical care and other supplies. These camps shall be in use for three to twelve months maximum, as long as the reconstruction of the destroyed areas and the relocation of their inhabitants will last.

One of the CCRs will be located on the perimeter of Apodaca city. In area between the international airport of N.L. (General Mariano Escobedo) and the municipality of San Nicolás de los Garza . **It will give place for 5.000 refugees on an area of about 22 ha.**

Las constantes lluvias ocurridas durante las últimas semanas han ocasionado el desbordamiento del río Santa Catarina. En los municipios de San Pedro Garza García, Monterrey y Guadalupe numerosas familias han sido afectadas. **20,000 personas han perdido su hogar y requieren ayuda inmediata.**

El gobierno de Nuevo León decidió ayer por la noche instalar cuatro centros de ayuda a damnificados. La intención de dichos centros es proveer a los damnificados con vivienda temporal, comida y asistencia médica entre otros. **Dichos centros estarán en vigencia por un periodo de tres hasta un máximo de doce meses**, tiempo necesario para reubicar a los familias y terminar con las labores de reconstrucción en las zonas afectadas.

Uno de estos cuatro centros estará ubicado en el municipio de Apodaca, entre el aeropuerto internacional de Nuevo León, (General Mariano Escobedo), y el municipio de San Nicolás de los Garza. **Se pretende dar cabida a 5,000 damnificados en un área de aproximadamente 22 hectáreas.**

Location: With an irregular form, the camp is located in Apodaca N.L. along the antique road that connects Santa Rosa town with the neighborhood of 'Rinconada colonial'.

Apodaca is located inside the metropolitan area, 19 km from the northeast of Monterrey city. North latitude 25°47' and West longitude 100°11'.

Climate: Extreme climate like in the wider metropolitan area.
The temperature varies between 0° in winter until 40° in summer.

Winds: Dominant winds coming from northeast.

Topography: Located in a valley, the soil is mostly compound of: rendinza, castañozem, ferozem, litosol, and in less percentage by fluvisol, vertisol and regosol.

Vegetation: mixed, uña de gato, cenizo, anacua, anacahuita, granjeno, chaparro prieto, and cactus.

Fauna: Rabbits, coyote, tlacuaches, owls, pigeons and diverse singing birds and reptiles.



Context | Entorno

Ubicación: El terreno de forma irregular, se localiza en la municipalidad de Apodaca, N.L., y a lo largo del Antiguo camino que conecta el pueblo de Santa Rosa con el desarrollo de riconada colonial. Apodaca se localiza dentro del área metropolitana de Monterrey a 19 km del noroeste de la ciudad de Monterrey. Latitud Norte 25°47' y longitud oeste 100°11'.

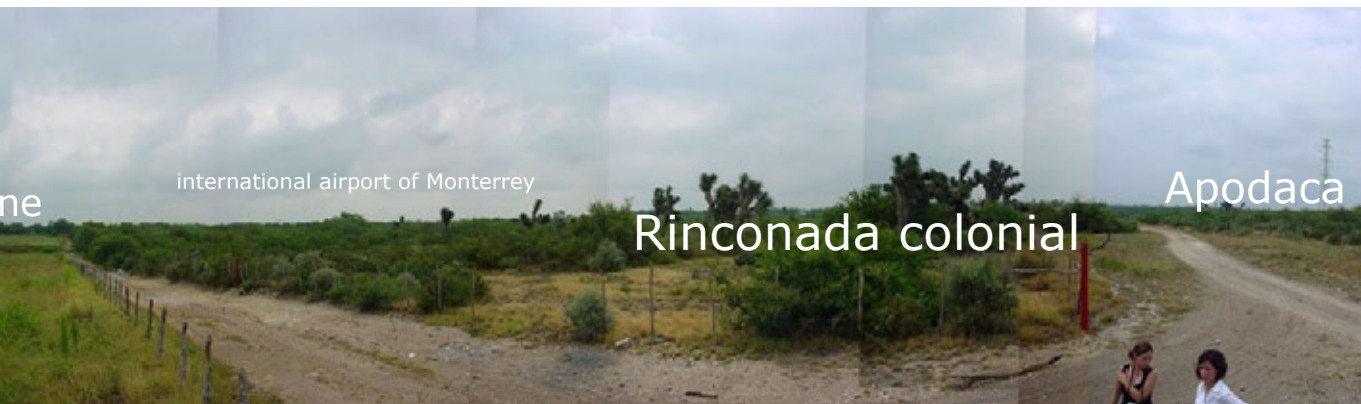
Clima: De clima extremoso como el resto del área metropolitana. Con temperaturas variables entre los 0°C en invierno, hasta los 40° en verano.

Vientos: Vientos dominantes provenientes del noroeste.

Topografía: Localizado en un valle con poco desnivel, el terreno se compone primeramente por rendinza, castañozem, ferozem, litosol, y en porcentaje inferior por fluvisol, vertisol y regosol.

Vegetación: Típica de la región como mezquite, uña de gato, cenizo, anacua, anacahuita, granjeno, chaparro prieto, y nopal.

Fauna: Conejos, coyotes, tlacuaches, tuzas, palomas, diversas aves canoras y rapáces, así como reptiles.





International airport of the north (private jets)
 Aeropuerto Internacional del norte (aviones particulares)



Proposed site for the CC in the valley between Santa Rosa and Apodaca City
 | Sitio propuesto para el refugio en el valle ubicado entre Santa Rosa y Apodaca



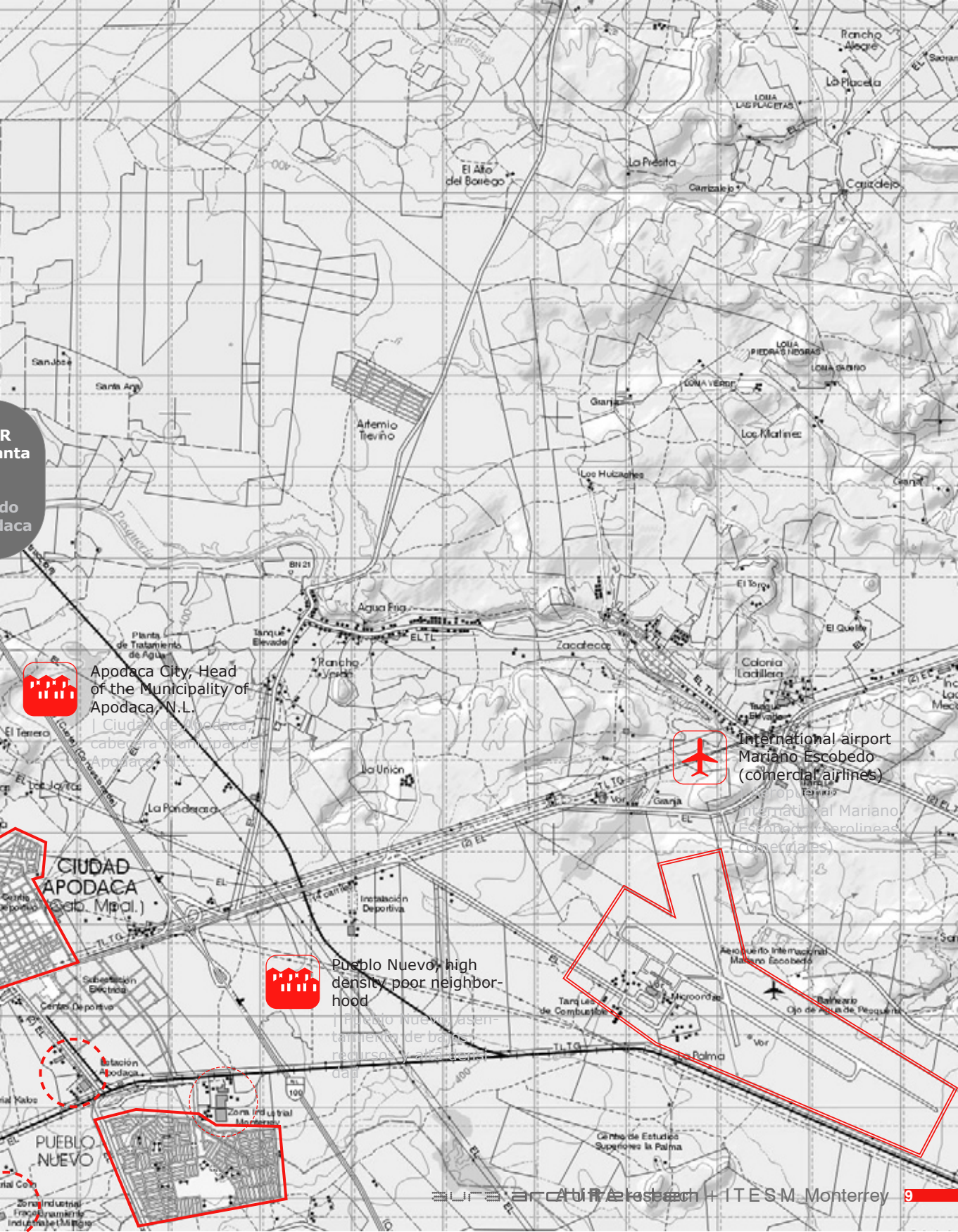
Industrial Parks and powerplants (kalos, milagros, etc.)
 Zona de parques industriales (El Cordero Arzobispo, etc.)



Metropolitan area of Monterrey-San Nicolás de los Garza

Área metropolitana de Monterrey-San Nicolás de los Garza

SAN NICOLÁS DE LOS GARZA (Cab. Mpal.)



R
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do
laca



Apodaca City, Head of the Municipality of Apodaca, N.L.



International airport Mariano Escobedo (comercial airlines)



Pueblo Nuevo, high density poor neighborhood

Pueblo Nuevo es esencialmente de bajos recursos y alta densidad

CIUDAD APODACA (Cab. Mpal.)

PUEBLO NUEVO

Plan Maestro y Servicios | Master Plan and Facilities

Professors | Profesores

M. Arq. Marisol Rivas Velázquez
M. Arq. Dipl. Ing. Christian Schmutz

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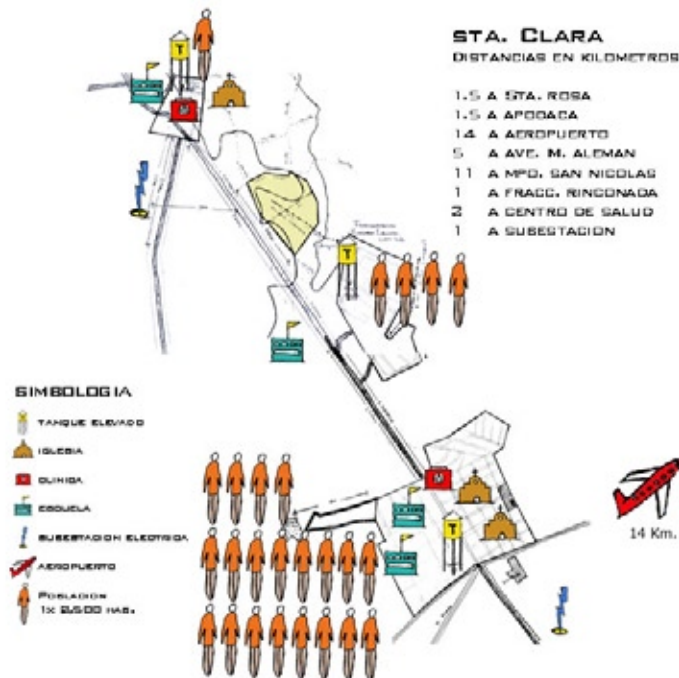
Student | Estudiante: Victor Hugo Paredes

According to UNHCR and Shelter Project recommendations for a **minimum standards** in disaster response, the camp will have approximately: **5,000** estimated of IDP's (internally displaced people) in **220,000m²** from which **17,500m²** are living units.

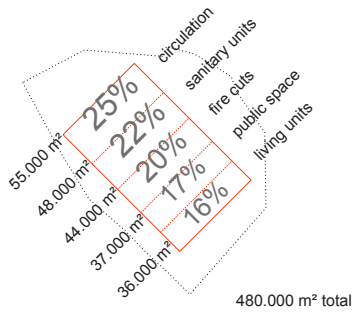
| Siguiendo los parámetros y recomendaciones mínimas en caso de desastre propuestos por UNCHR y Shelter Project, nuestro campo tendrá un estimado de **5,000 IDPs (población internamente desplaza)** en **220,000m²** de los cuales **17,500m²** serán destinados a la vivienda.

Program | Programa:

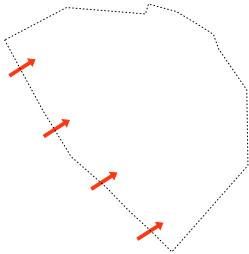
- 64 water sources | 64 tomas de agua
- 1 health center | 1 centro médico
- 1 point of good distribution | 1 centro de distribución de viveres
- 800 units of sanitary services | 800 unidades de aseo
- 1 school | 1 escuela
- 1 market | 1 mercado
- 128 waste containers | 128 contenedores de desechos



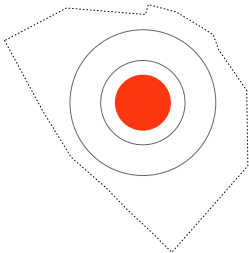
EVOLUTION OF CONCEPT



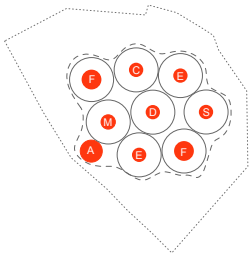
A **AREAS | ÁREAS:** The UN divides a refugee camp into 5 kinds of areas: the living area in which will be the houses incl. the plots, an area for the public spaces, an area for the sanitary services incl. distance areas, an area for the circulation, the roads for pedestrian and vehicular traffic and an area for cut fire, which is asked by the UN to prevent fire expansion. | Naciones Unidas divide los campos en 5 áreas: vivienda, espacios públicos, servicios sanitarios, circulación (vehicular y peatonal), y cortafuegos.



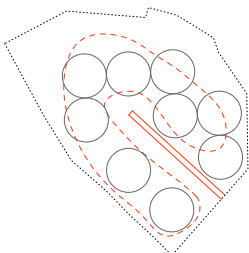
C **CIRCULATION | CIRCULACIÓN:** Access to the camp will be made from the existing road in front of the site. A new road connection directly to the highway is proposed to avoid problems with neighbors and to have an easier access to the camp. | El camino de terracería situado frente al sitio funciona como acceso principal. Una nueva conexión entre la carretera y el camino es propuesta con el fin de evitar posibles conflictos con los fraccionamientos colindantes.



S **SERVICES | SERVICIOS:** In order to avoid big densities, points of services are proposed that are equally distributed all over the camp. | Para evitar grandes asinamientos en puntos específicos, todos los servicios son distribuidos a lo largo del campo.



I **IDENTITY | IDENTIDAD:** Through the distribution of the main services in different places, public spaces are created around them. The allocation of living areas in their periphery creates different identities for the 'neighborhoods'. The main services will be a hospital, a church, a cinema, a plaza, a school and other recreational activities. | La ubicación de vivienda en la periferia permite crear en el centro zonas con características específicas. El propósito principal en la creación de dichas zonas es proveer puntos de distribución y servicios que organizan a su alrededor distintos espacios públicos e identidad. Un hospital, una iglesia, una escuela, un cinema y plaza al aire libre, así como otras actividades recreativas son los principales servicios y actividades en el campo.



T **TOPOGRAPHY | TOPOGRAFÍA:** The layout of the camp responds to the topography of the site. The site is mostly plane, but it has an area in which water can stagnate. To avoid problems of flood in rain seasons the layout of the camp is arranged around this area. Because it will be also muddy in summer time, it can not be used for built structures. | El ordenamiento del sitio responde a la topografía del mismo. Con una ligera pendiente y una zona de estancamiento pluvial en el terreno, el campo se organiza en U rodeando la zonas problemáticas.

Sanitary Services | Aseos

Sanitary services are functionally located in regard of the UN specifications of maximum distance between them and the living area for people.

Sanitary units: 1 sanitary unit serves 70 people
Sanitary units per community: 10

Distance housing-sanitary: max. 100m, min 20m

| Los servicios sanitarios se localizan siguiendo las especificaciones de las Naciones Unidas.

Monto de aseos: 1 por cada 70 personas

Aseos por comunidad: 10

Distancias refugio-sanitario: máx 100, mín. 20m

Living Units | Viviendas

Plot + Shelter The living area is located around a social point, the 'plaza'. Its design takes the social and cultural atmosphere from Mexico into account. The goal is to evoke local pre-existing social behavior.

Families are distributed in 7 communities.

Each community is divided into 8 blocks of 20, 18 or 16 families.

Plot area per family is 70m² with 148 families per community in a total amount of 1,036 plots.

| **Predio y refugio** Las viviendas se localizan alrededor de un foco social: la plaza. Su diseño incorpora los aspectos culturales y sociales de México buscando con esto, recrear comportamientos sociales.

Cada comunidad se divide en blocks de 20, 18 o 16 familias.

La superficie de predio por familia es de 72m² con un total de 148 familias por comunidad en un monto total de 1,036 predios

Semipublic Areas | Áreas Semipúblicas

Semipublic areas or patios provide the opportunity to establish shared activities between families. They create new social atmospheres so that refugees can gain a feeling of community with the people around.

The total amount of semipublic areas in the camp is 56, 8 in each community

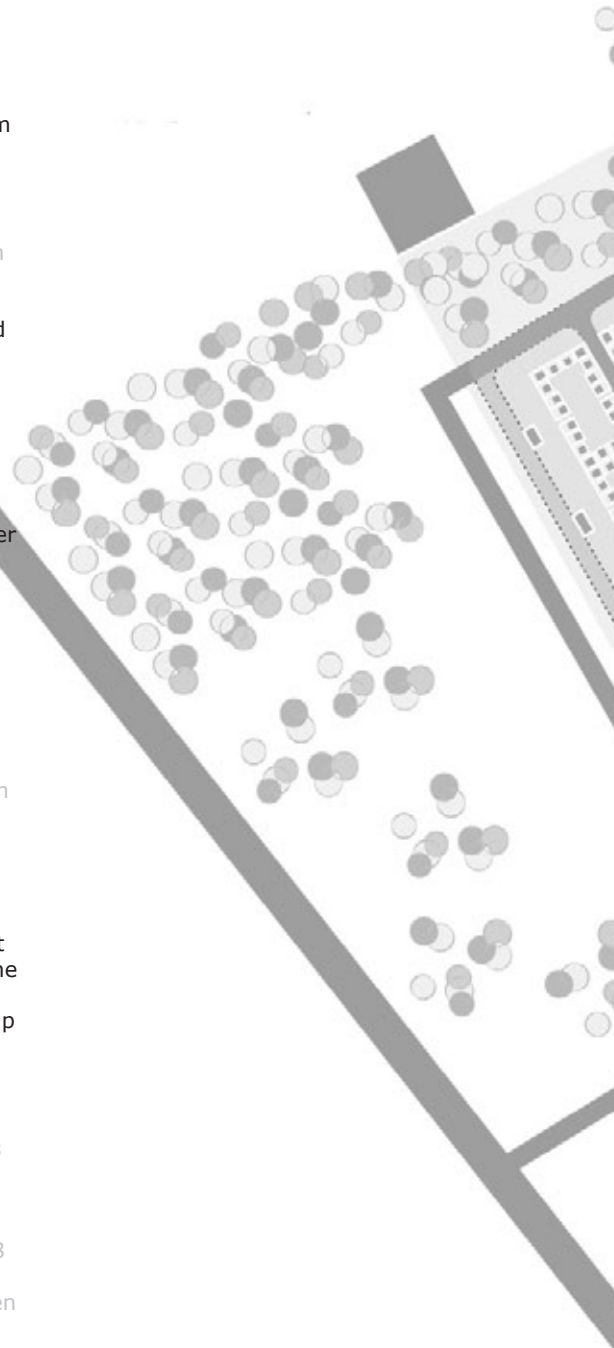
1 semipublic area serves from 80 to 100 people in an area from 820 to 1,100m² respectively.

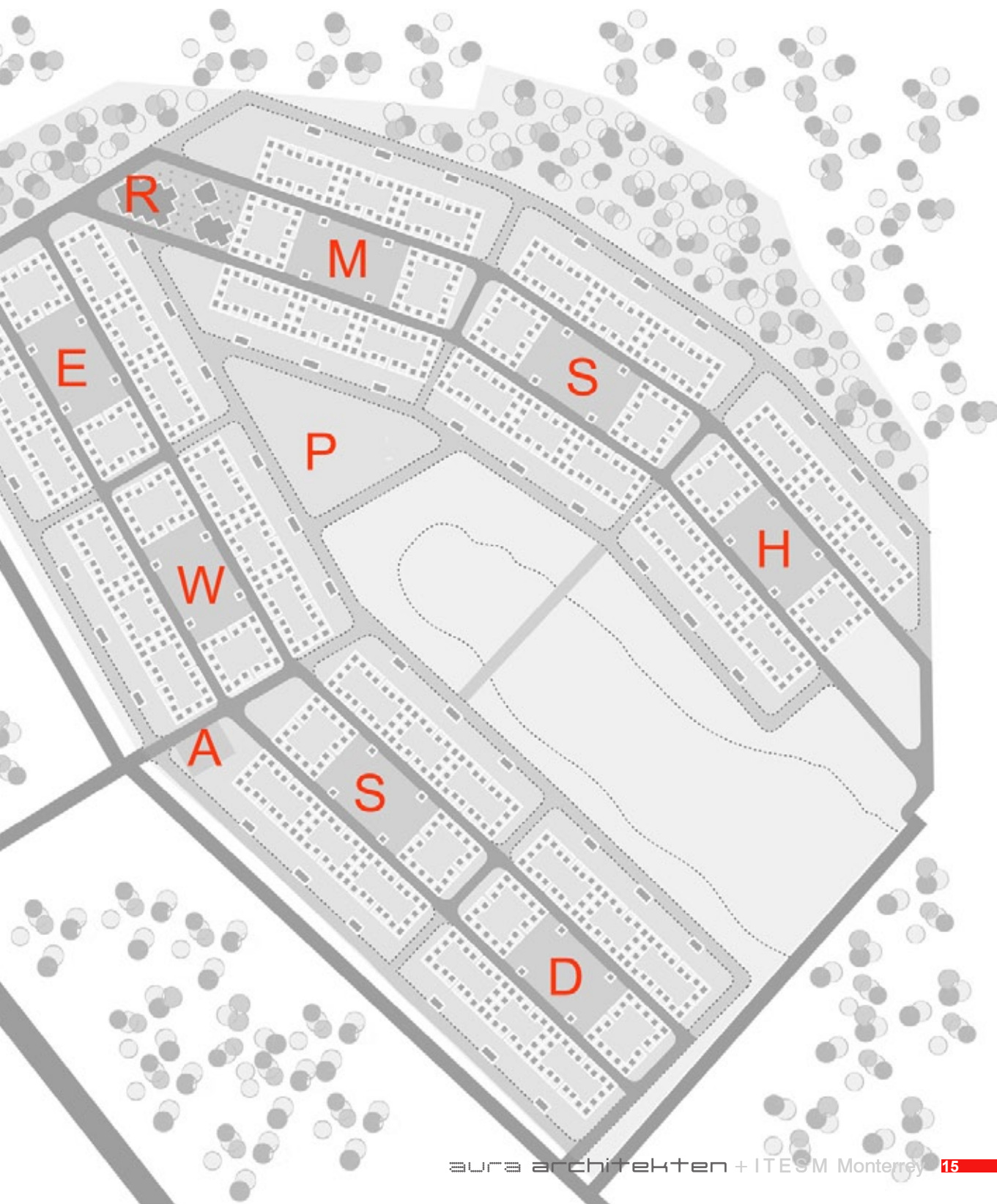
| Las áreas semipúblicas permiten dar cabida a actividades colectivas entre las distintas familias que comparten una comunidad. Al generar nuevas atmosferas los individuos recuperar el sentimiento de comunidad.

El monto total de áreas semipúblicas es de 56, 8 de ellas en cada comunidad.

1 área semipública sirve de 80 a 100 personas en una superficie: de 820 a 1,100m²

The goal of distributing all major services in different parts is to create neighborhoods with specific identities for the people that live around one of this services. Through the recreation of some facts of urbanity, refugees do not develop impres-





Socio-cultural Needs | Necesidades socio-culturales

Public Areas | Áreas Púbricas

sions of living in a typical refugee camp.
7 public plazas each with a specific service,
4500 m² for each public plaza
3 services isolated from the living area
(administration, church, plaza)

| El objetivo principal en la distribución de servicios fué el crear colonias con identidades específicas. gracias a la inserción de ciertos elementos urbanos, los habitantes desarrollan una impresión distinta a la de un refugio temporal.

Total de plazas: 7 cada una con un servicio en particular.

Superficie por plaza: 4500m²

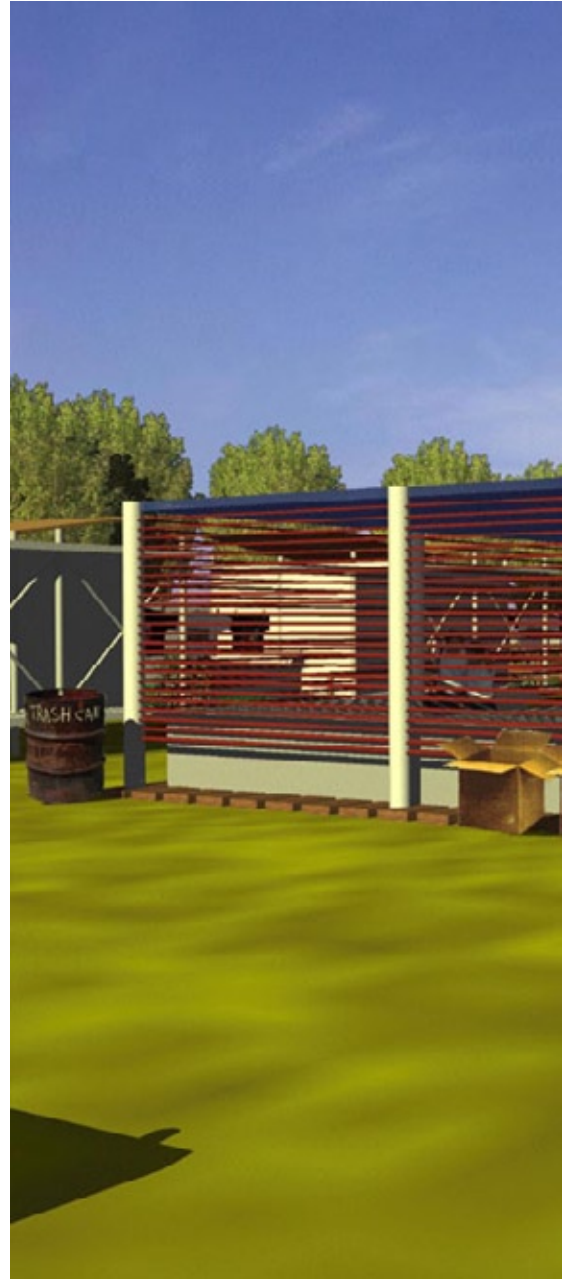
3 servicios son separados de la vivienda: administración, iglesia y plaza principal.

Besides the physical necessities it is very important to take care of the social and cultural necessities of the people that will use the camo. It might be more important to create a pleasant atmosphere, so that refugees would feel comfortable and for a certain time try to mentally overcome the situation they are living in. It is compulsory to some degree to recreate the way they used to live. The social and cultural environment will be a tool to reconstruct the broken social life.

Within the Mexican culture and its way of living some important concepts can be identified that can guide the spatial organization. One of this is the VECINDAD or PATIO. More than a place the VECINDAD represents the activities and relations that are created by the people.

| Además de las necesidades físicas ha sido muy importante tomar en cuenta las necesidades sociales y culturales. Una prioridad es generar una atmosfera placentera que permita sobrellevar la situación.

La vecindad como herramienta física nos permite reconstruir la vida social que ha sido fragmentada.





Refugios Temporales | Temporary Shelter Units

Professors | Profesores


Marisol Rivas Velázquez M. Arch.(BI)
Christian Schmutz M. Arch.(BI) Dipl. Ing.

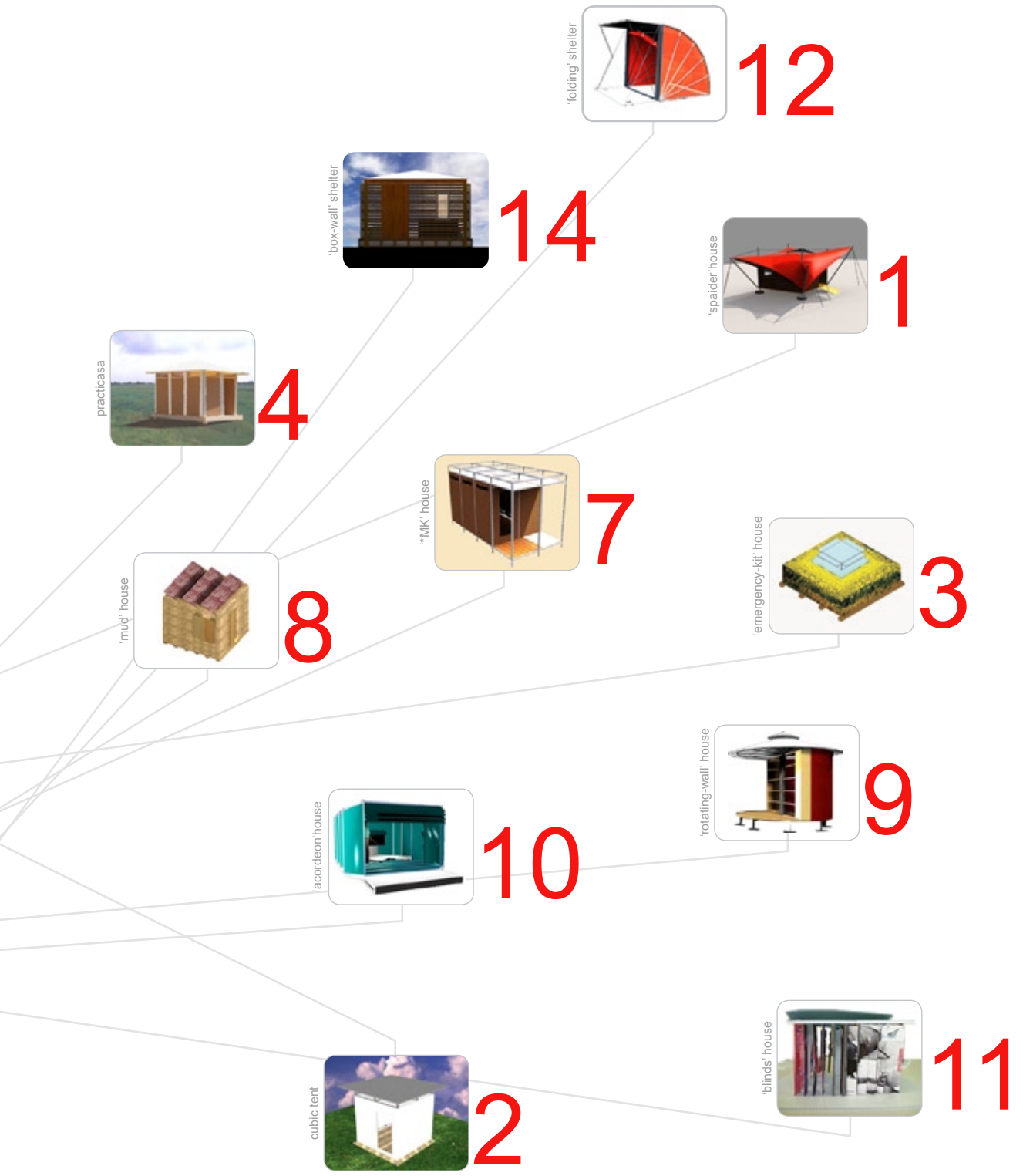
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Ana Gabriela Pacheco
Rocío Sepúlveda
José Angel Villasana
Alejandra Zambrano







Refugio Araña | Spider House

Student | Estudiante: Jorge Aguilar

Materials | Materiales: wood, steel, concrete, and cotton fabric | madera, acero, cemento y tela

Tools required | Herramientas necesarias: shovel/peak, screwdriver | pala y/o pico, desarmador

Assembly time | Tiempo estimado de ensamblaje: 2 days | 2 días

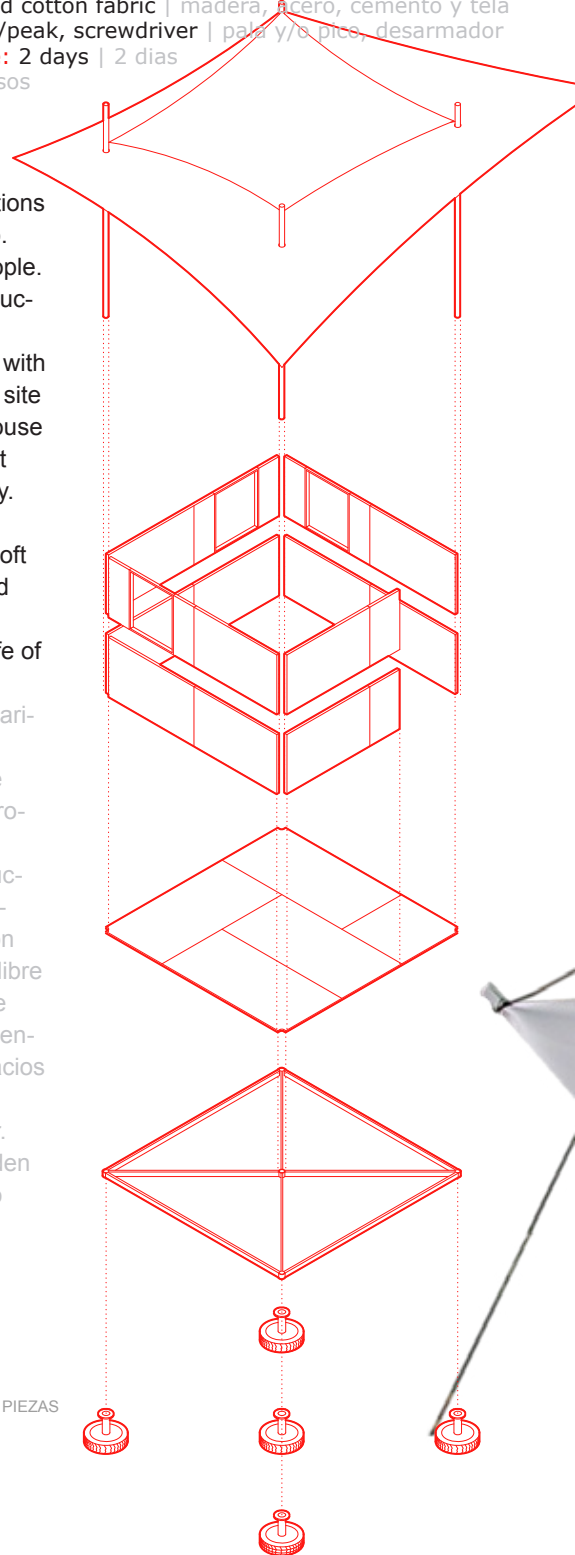
Costs | Costo: - MX pesos (aprox. - US\$) | \$- pesos

Weight | Peso: - kg

The spider house nickname is because its articulations and cables are alike a spider crawling on their web. The unit provide a temporary house for up to 6 people. This housing unit comes from the idea of a light structure, made of galvanized steel that unfold over the ground upon a base made of reused car tires filled with concrete in order to elevate the house keeping the site untouched, and allowing ventilation beneath the house floor. Made of plasticized fabric, the roof of the unit could be given by an private company with publicity. The fabric is tensed with light steel cables or even any kind of rope, the parabolic form of the tensed roft produces shading over all the views of the unit, and create social and semi-public shaded spaces. Because the interior space is to limited, the daily life of the people is outside the house.

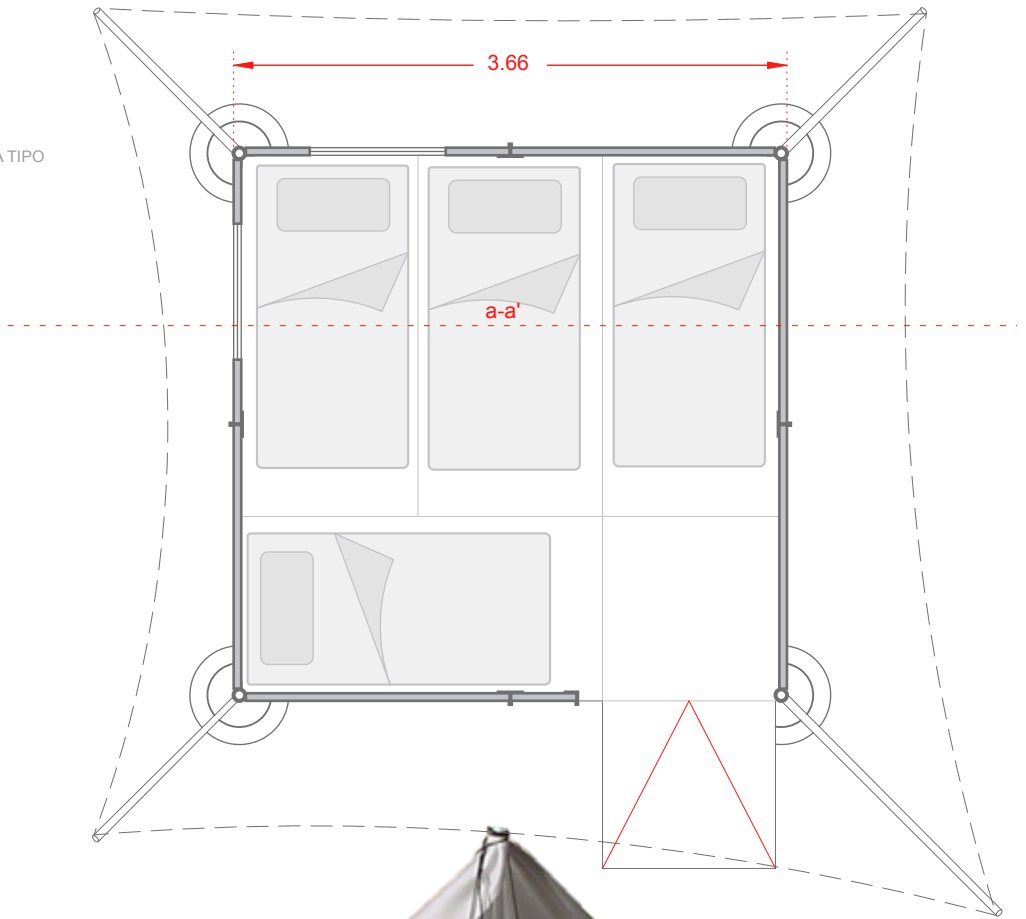
| El nombre de 'Refugio Araña' proviene de la similitud de los cable y articulaciones que sostienen el techo con el de una telaraña. Esta vivienda provee refugio para hasta 6 personas y pretende ser un prototipo par otros tipos de funciones.

La idea principal en el diseño es generar una estructura ligera y desmontable. Hecha de acero galvanizado y sostenida mediante neumáticos rellenos con concreto a manera de zapatas, permitiendo así la libre circulación del aire. Del mismo modo la cubierta de tela plastificada permite una ventilación continua generando sombras sobre la fachada y sobre los espacios exteriores. Es en estos donde se pretende que la mayoría de las actividades cotidianas tengan lugar. Algunas partes, como por ejemplo la cubierta, pueden ser patrocinados por el sector privado funcionando como superficies de publicidad.



ISOMETRIC | ISOMETRIA DE PIEZAS

left PLAN | PLANTA TIPO



above MODEL | MAQUETA





above FIRST PROPOSAL | PRIMERA PROPUESTA DE DISEÑO

left VIEW OF THE SHELTER IN THE CCR | VISTA DEL REFUGIO DENTRO DEL CCR

Casa 'Set de Emergencia' | Emergency-Kit House

Student | Estudiante: Isabel Castro

Materials | Materiales: thermo-plast filles with polystyrene, aluminium tubes, and waterproof cotton canvas | termo-plástico con relleno de poliestireno, tubos de aluminio y tela impermeable de algodón

Tools required | Herramientas necesarias: no especial tools | ninguna

Assembly time | Tiempo estimado de ensamblaje: 30 min

Costs | Costo: aprox. - US\$ | \$- pesos

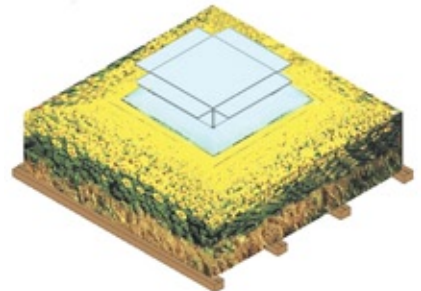
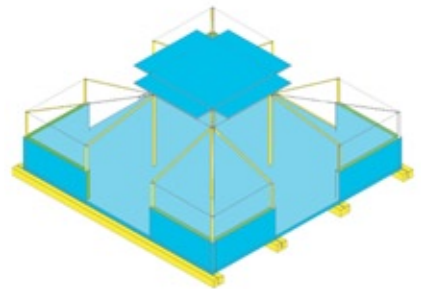
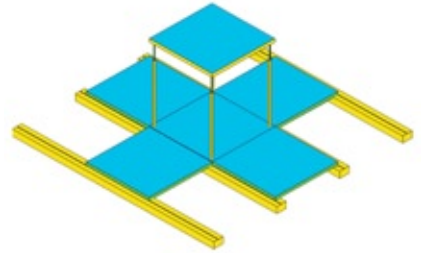
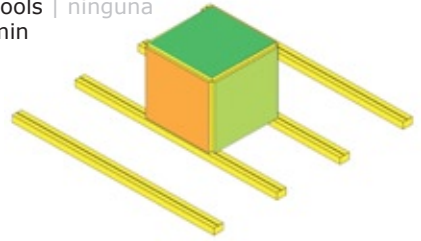
Weight | Peso: - kg

This project responds to the immediate need of temporary housing in case of emergency

The 'Emergency-Kit house' serves as a container carrying the basic needs of the damaged. After being opened within few minutes the container can be converted into a house, big enough to be inhabited by eight persons. The sides of the box are turned into walls, while the covering pieces of the box are the floors, while the covering pieces of the box are the walls, which contain poles that will help to hold the 3 layer canvas

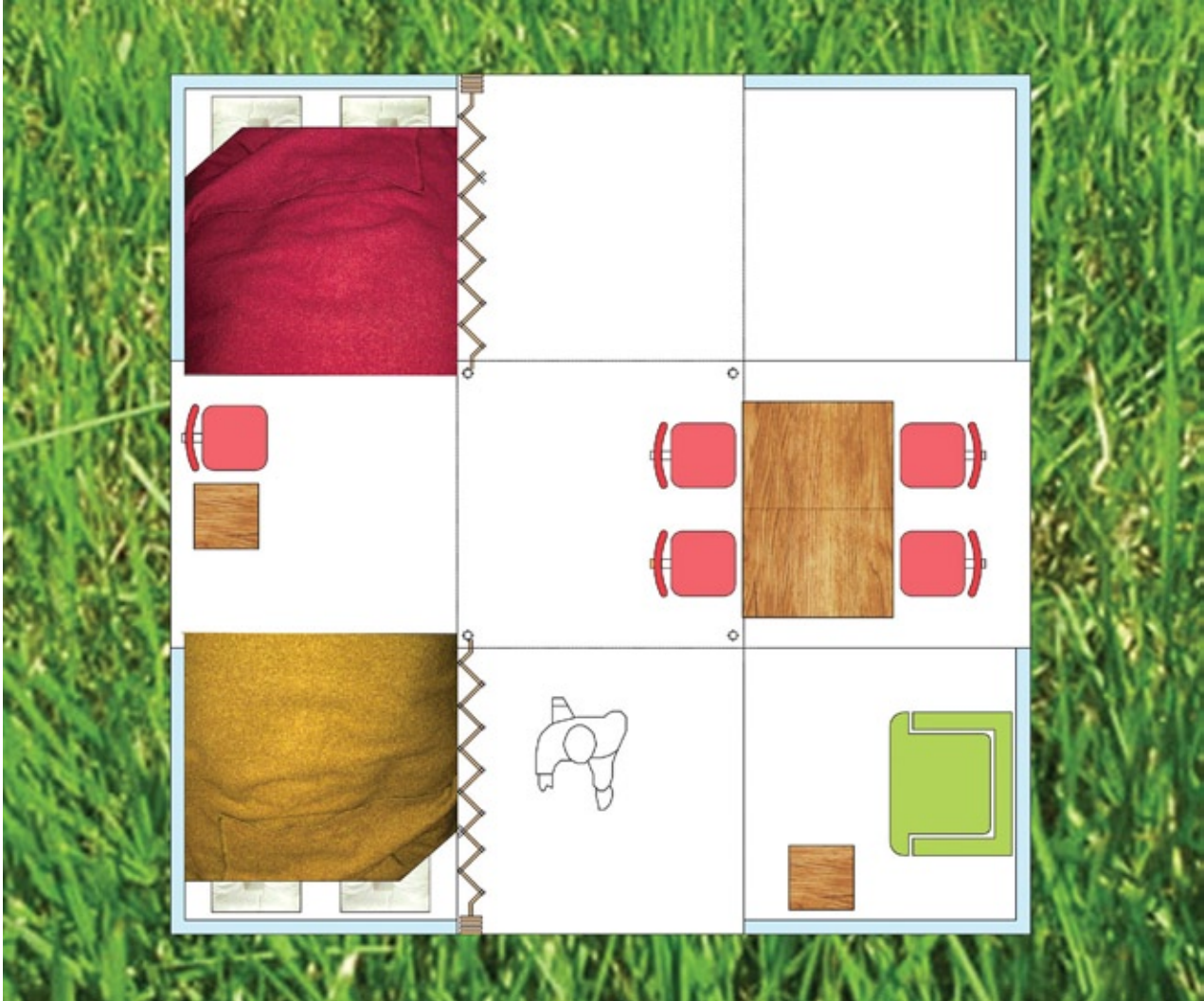
| El refugio responde a la necesidad inmediata de albergar en caso de desastre.

La casa 'set de emergencia', sirve como contenedor para todas las necesidades basicas del damnificado. Una vez abierto el contenedor se cubierte, en cuestión de minutos, en la vivienda temporal para 8 personas. Los laterales de la caja son la plataforma donde descansan la casa, las piezas que envuelven la caja se convierten en paredes, De estas se extrae una estructura tubular que soporta una lona de 3 capas.



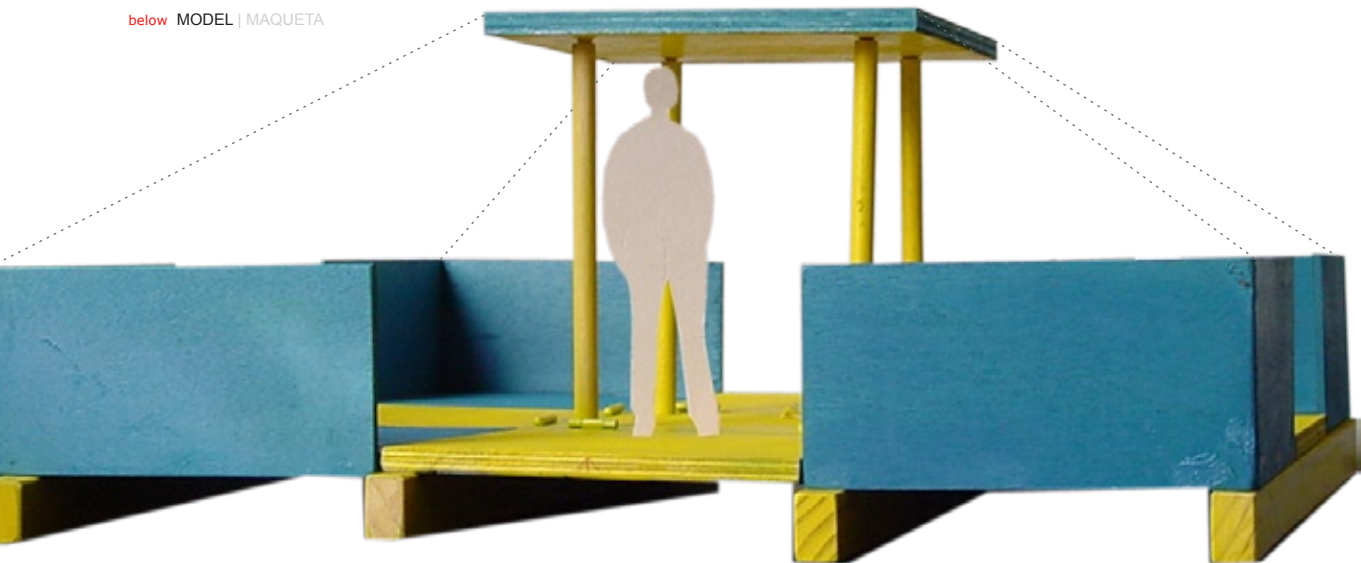
left AXONOMETRIC OF THE SHELTER

| AXONOMETRIA DEL REFUGIO



above PLAN | PLANTA TIPO

below MODEL | MAQUETA



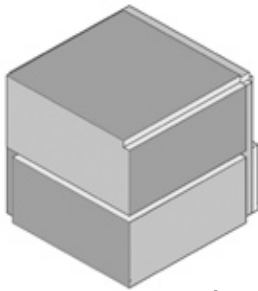
Inside the emergency kit house you will find the basic aid in the difficult time of disaster. | Dentro del contenedor el usuario encontrara la ayuda necesaria en este momento dificil.



medical aid self administrate (vitamins, stiches, etc.)
| ayuda medica de autoprescripcion (suero, vitaminas, vendajes, etc.)



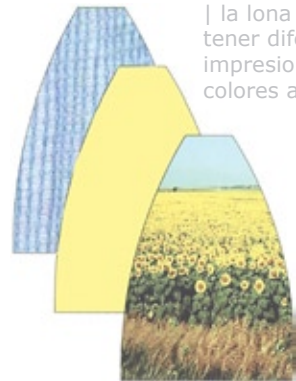
non expiration goods, water and milk
| productos alimenticios no perecederos, agua y leche evaporada



the 'BOX shelter' contains all the necessary home appliances, (mattresses, chairs, roof and cover canvas)
| la vivienda contiene todos los mebles y requerimientos especiales para el habitante, (colchones, colchas, sillas y la cubierta de la vivienda)



the canvas could be printed with different motifs and colors
| la lona puede tener diferentes impresiones o colores a elegir





above VIEW FROM INSIDE THE SHELTER | VISTA DEL INTERIOR



Student | Estudiante: Eric Gómez

Materials | Materiales: cardboard panels, aluminium, and metal corrugate panel
| paneles de cartón, aluminio, lamina corrugada.

Tools required | Herramientas necesarias: screw, shovel and peak | desarmador, pala y pico
Assembly time | Tiempo estimado de ensamblaje: 5 hr

Costs | Costo: - MX pesos (aprox. - US\$) | \$- pesos

Weight | Peso: - kg

Casa MK* | *MK House

*MK, Mechanical Ken provide a temporary house for 2 persons. Its modular system allows the possible and endless extension of the space.

The Ken is the standardized measure for residential architecture in Japan; it evolves an aesthetic module that orders the structure, materials and space of Japanese architecture.

The size of a room is designated by the number of its floor mats. The traditional floor mat was originally proportionate to accommodate two persons sitting or one person sleeping.

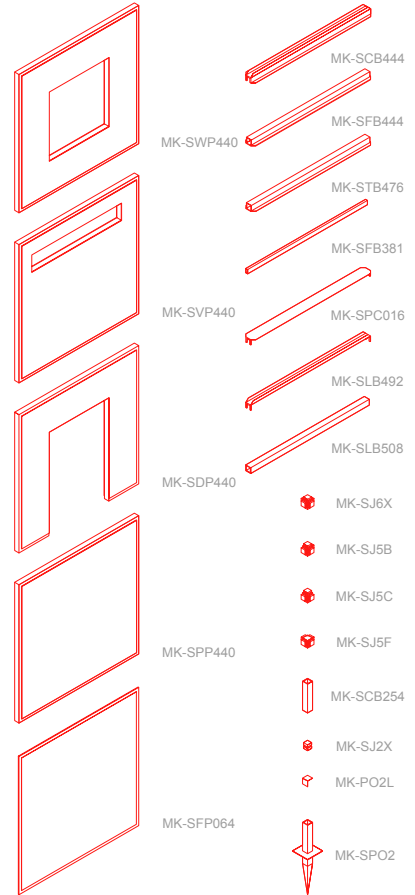
This project's concept is to create a new constructive system that allows different arrangements of private space. Materials used are cheap, recyclable and effectively respond to the climatic, aesthetic and structural needs for the housing.

[*MK, Mechanical Ken prove refugio temporal desde dos personas o bien puede extenderse indefinidamente aumentando así el número de usuarios.

Ken es un sistema estandarizado de medidas utilizado en Japón para proyectos residenciales. Involucra un módulo estético que organiza la estructura, los materiales y el espacio en la arquitectura japonesa.

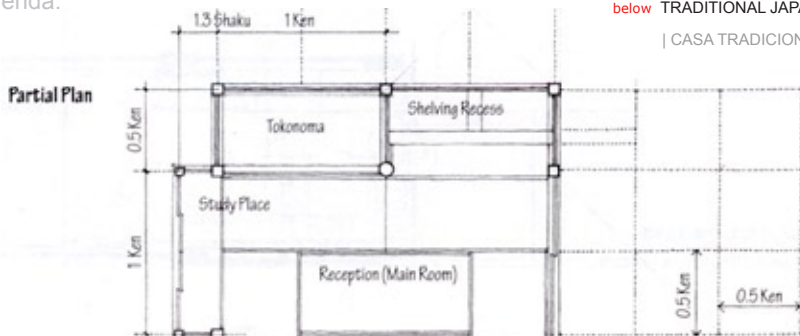
El tradicional tatami emplea una proporción que acomoda dos personas sentadas o una acostada.

El concepto principal es generar un nuevo sistema constructivo que permita distintas distribuciones espaciales. Los materiales empleados son baratos, reciclables y responden efectivamente a las necesidades climática, estéticas y estructurales de la vivienda.



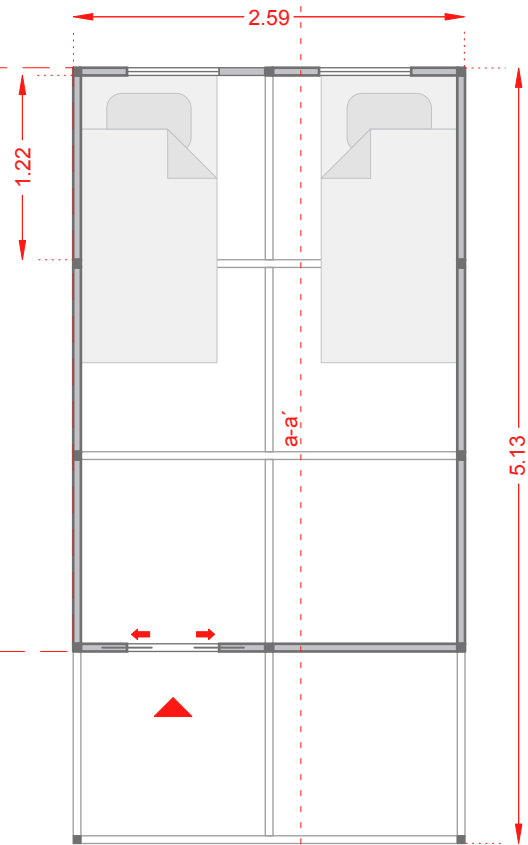
above LIST OF COMPONENTS | DESGLOZE DE PIEZAS

below TRADITIONAL JAPANESE HOUSE (based on Ken system)
| CASA TRADICIONAL JAPONESA (basada en el sistema Ken)



2 **SECOND EXTENTION:**
With two extra modules, the number of users could be increase to four offering the possibility to have two different spaces. Two units could be also join. | duplicando el refugio se puede incrementar el numero de usuarios a cuatro. Permittiendo la creación de dos areas. Se pueden unir dos unidades manteniendo la independencia de cada una.

1 **FIRST EXTENTION:**
By adding another line of modules the number of users could be increase to three. | Al agregar una línea más de módulos se puede incrementar el numero de usuarios.



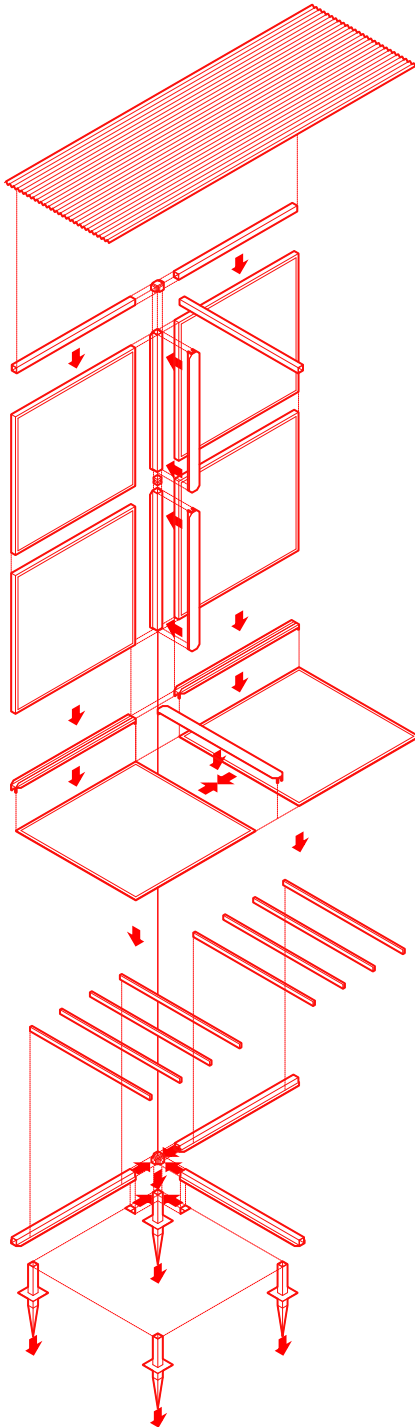
above PLAN AND DIFERENT PHASES | PLANTA TIPO

below MODEL | MAQUETA



Following instructions would aid you in the construction of any size house with *MKHouse.

| Las siguientes instrucciones son una guía para dimensionar su casa *MK.



6

STEP SIX: Internal ceiling of the house is done like the cardboard panels below. Then it's necessary to place the tubular bars that make the frame for the second ceiling. The corrugated sheets are screw overlapping every 95.3 cms to avoid water filtration. | El interior del techo esta compuesto de igual manera con los paneles de carton. Una vez puesto coloque las barras tubulares que soportaran el cielo exterior. Las laminas corrugadas deben tarlaparse cada 95.3 cms.

5

STEP FIVE: The cardboard panels are more easily assmabled. They will all need a **MK-STB476** and different cappings. All pieces are screw from the inside so it is important to place the **STB** thinnest face inside the house. The joint between the 2 levels of cardboard is by the **MK-SJ2X**. | Para la colocacion de los paneles de madera usted necesitara el **MK-STB476** y diferentes tapas. Todas las piezas se atornillan desde el interior por lo que es importante colocar la cara mas delgada del **STB** hacia el interior de la casa. La **MK-SJ2X** es la union entre los dos paneles de carton.

4

STEP FOUR: Over this new beams the wooden frame of the floor would be placed, and then the corresponding caps. Notice that the wooden frame could be covered with your favorite floor finish: carpet, laminate, hurt, etc. | Coloque sobre las vigas las superficies de madera. Recuerde que estas superficies pueden ser cubiertas con su acabado favorito: alfombra, laminado, linoleo, etc.

3

STEP THREE: For floor construction they are necessary **MK-STB444** & **MK-STB381** pieces. Place the **444** series first and then the **381**. Make sure to place this last ones in only one direction. | Para la construccion del piso se requieren las piezas **MK-STB444** y **381**. Coloque primero la serie **444** seguida de la **381**. Revise que estas ultimas vayan en una sola direccion.

2

STEP TWO: After **MK-SPO2** pieces are distributed in a grid with the dimensions of your house, fasten the necessary **MK Standar Joints** and **PO2L** pieces. | Una vez trazadas las dimensiones de su casa coloque las piezas **MK-SPO2** dentro del grid. Una las uniones **MK** con las **PO2L**.

1

STEP ONE: After cleaning the terrain and with the help of a shovel or a peak, dig hole in the ground each 1.27 m for the foundations of your house. | Despues de limpiar el terreno con la ayuda de una pala y un pico, haga hoyos de 1.27 m cada uno.



above VIEW OF THE *MK HOUSE OVER THE CCR | VISTA DE LA CASA *MK EN EL REFUGIO

left ASSAMBLY INSTRUCCIONS | INSTRUCTIVO PARA EL ENSAMBLAJE



Student | Estudiante: Juan Pablo González

Materials | Materiales: mood, gravel, galvanizad mesh and roofing tiles, wire, aluminium profiles and polystyrene panels | barro, grava, malla de gallinero, alambre, galvateja, perfiles de aluminio y paneles de poliestireno

Tools required | Herramientas necesarias: shovels, screwdriver, clamps, knife | desarmador, martillo, cubetas

Assembly time | Tiempo estimado de ensamblaje: 20 hr + 20 hr drying time

Costs | Costo: aprox. 480 US\$ | \$4,897 pesos

Weight | Peso: 870 kg (without foundations and furniture)

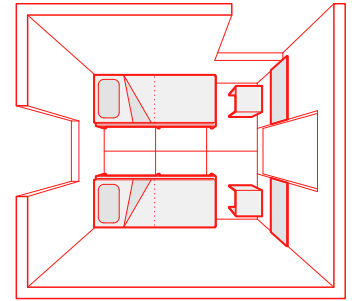
The aim of this project is to create a pluri-functional space based on foldable furnitures. Here two users could change the functions of the space from sleeping into a dinning or even working place by simply 'foalding back-klaap' beads and/or tables.

By using in the structure an assamby sistem usually use for W-panel and galvanized steel instead of wood, the sheltets gets strong enough. Heat isolation is provide by the poliestire panels and the mood mix of water, mood and 'gibs', that covers the walls

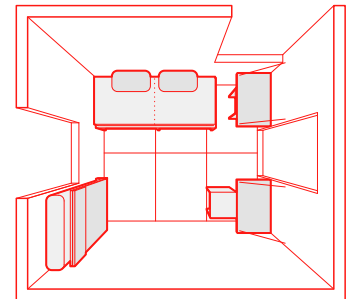
The shelters realties to the ground by a wooden beam structure and gravel lines that allows the free flow of water

| Crear un espacio plurifuncional para dos personas, que estuviera basado en un sistema de muebles abatibles, fue el objetivo principal en el diseño de este proyecto. Los usuarios pueden transformar su espacio, desde una recámara hasta un área de trabajo.

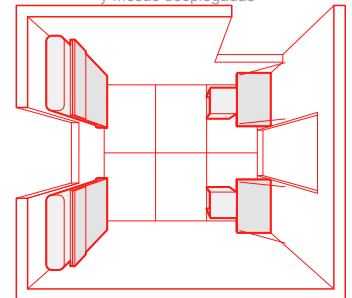
Utilizando lamina galvanizada en combinación con el sistema estructural del panel W se crea una estructura solida. Paneles de poliestireno y una mezcla de barro, yeso y agua, que se aplica como acabado exterior ayudan a mantener un clima agradable en el interior del refugio. La vivienda descanza sobre vigas de madera colocadas de forma paralela entre si. Una capa de grava entre de ellas permite que el agua puede circular y filtrarse a la tierra fácilmente.



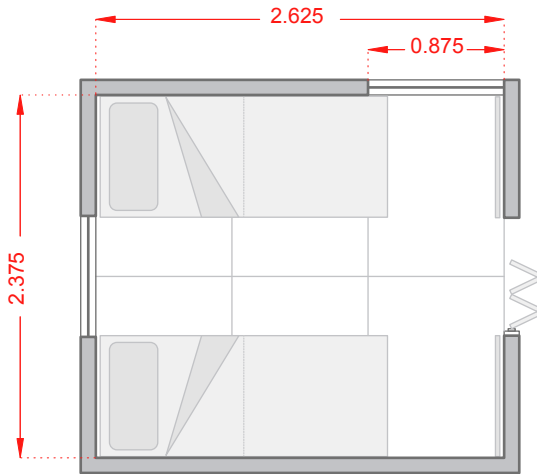
1 SLEEPING:
Beds display and tables retreat
| Camas desplegadas y mesas-recogidas



2 EATING & LIVING:
Using one bed as sofa and displaying the tables | Cama desplegada a manera de sillón y mesas desplegadas

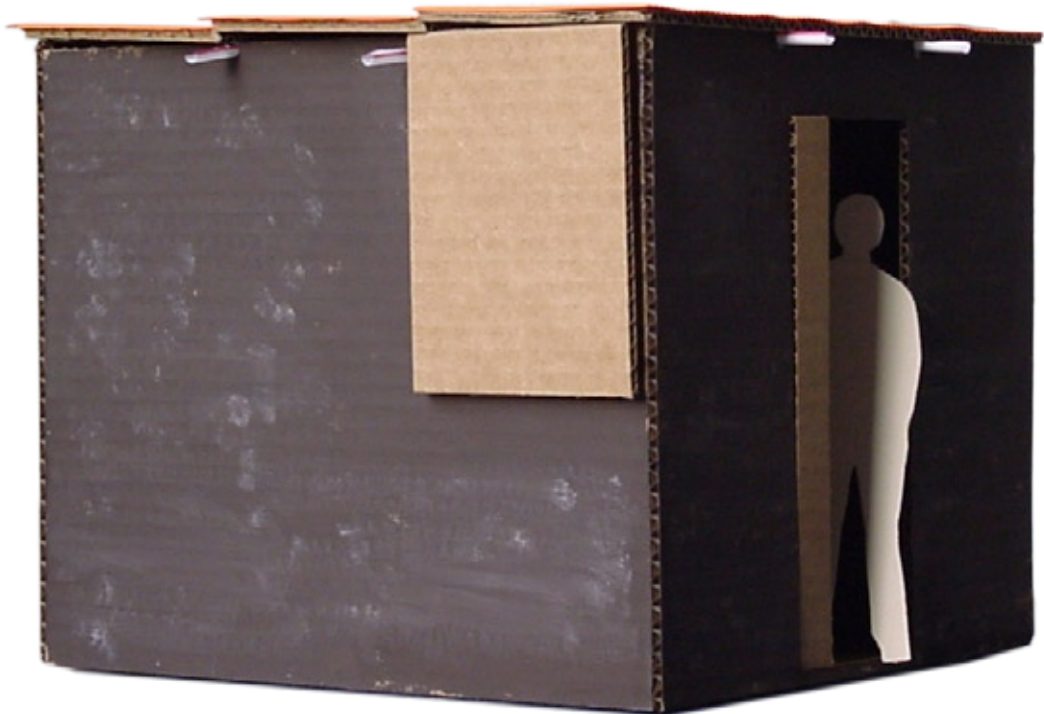


3 WORKING:
Beds up and working tables display | Camas levantadas y mesas de trabajo desplegadas



above PLAN OF THE SHELTER
| PLANTA DE LA VIVIENDA

left MODEL | MAQUETA





Student | Estudiante: Ruth Hernández

Materials | Materiales: wood, steel, and cotton fabric | madera, acero y tela de algodón

Tools required | Herramientas necesarias: screw | desarmador

Assembly time | Tiempo estimado de ensamblaje: 5 hr

Costs | Costo: aprox. 300 US\$ | \$3,000 pesos

Weight | Peso: - kg

Refugio del muro giratorio | Rotating-wall Shelter

Rotating wall shelter is a unit desing to provide a temporary house for 2-3 persons. The shelter is made by four elements: an umbrella, a curtain, a furniture-wall and a floor surface. The rotating wall is fixed in the center, giving to the user the posibilidad to transform his domain from a very private into a public one. At night the space is very individual and entirly use as sleeping place, during day it is a terrace that interacts with the communal activities of the CCR.

In the rotating wall the users can store safely their belongings or enjoy a meal.

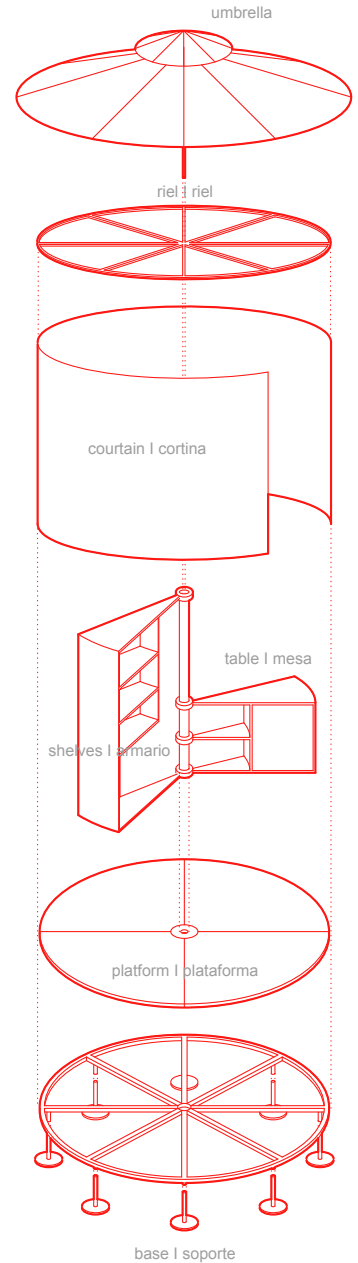
All the materials are a reusable.

Este refugio, diseñado para proveer vivienda temporal a 2-3 personas, está compuesto principalmente por 4 elementos: una sombrilla (a manera de techo), una cortina, un muro-mueble, y un tapanco.

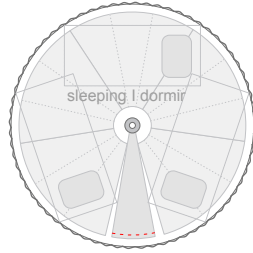
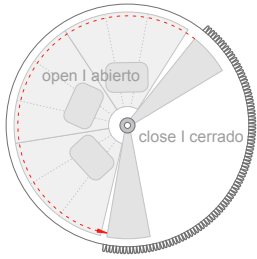
Fijado al centro del refugio, el muro giratorio da al usuario la posibilidad de transformar su espacio de privado a público. De noche el refugio es completamente hermético funcionando como área de descanso. Durante el día se transforma en una terraza que interactua comunalmemente dentro del CCR.

Dentro de la muro-giratorio el usuario puede almacenar sus pertenecias o bien disfrutar una comida.

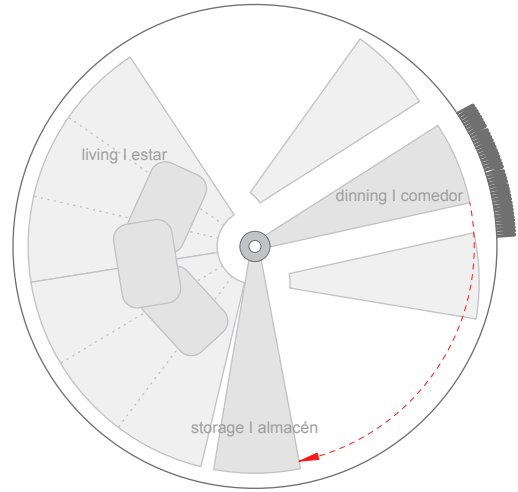
Todos los materiales son reusables



above COMPONENTS | DESGLOZE DE PIEZAS
left FURNITURE AS SPACE | MUEBLE COMO ESPACIO



3.125



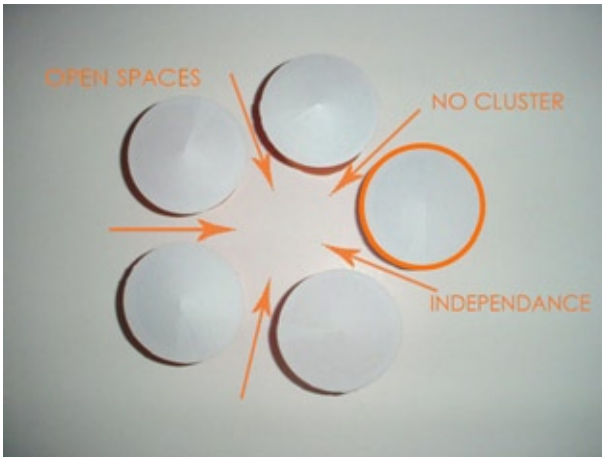
above FLEXIBILITY OF THE SPACES (living and sleeping)
| FLEXIBILIDAD DE LOS ESPACIO (estar y dormitorio)

left PLAN WITH LIVING FUNCTIONS | PLANTA CON ACTIVIDADES





left PLAN WITH LIVING FUNCTIONS | PLANTA CON ACTIVIDADES



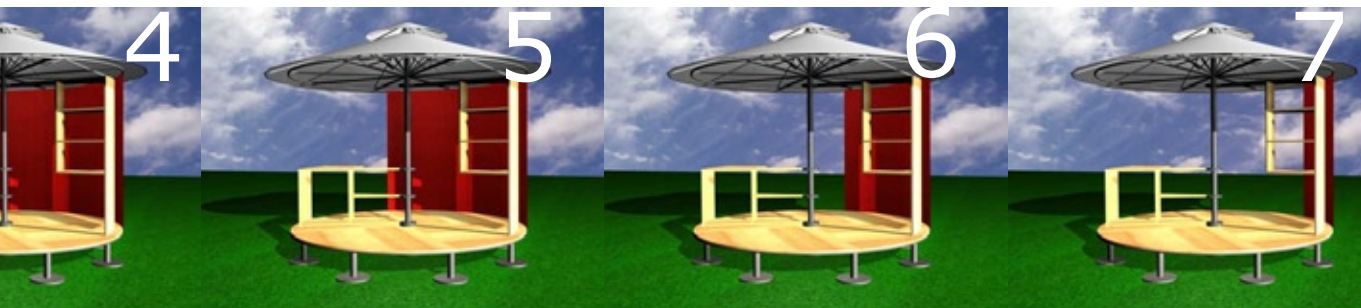
above TWO POSSIBILITIES FOR THE ARRANGMENT OF THE UNITS
 | DOS POSIBILIDADES PARA EL ACOMODO DE LAS VIVIENDAS
 left VIEW OF THE HOUSING UNITS OVER THE CAMP
 | VISTA DE LA UNIDADES DE VIVIENDA EN EL REFUGIO



C **CIRCULAR ARRANGMENT:**
Positive aspects: every unit is independent, but it is possible to create a little village. The materials and construction system makes it temporary. **Negative aspects:** difficult to expand and make changes
 | Positivo: cada unidad es independiente brindando la posibilidad de generar pequeñas villas. Los materiales y el sistema de construcción empleados enfatizan el aspecto temporal. **Negativo:** imposibilidad para extender y hacer cambios.



H **HEXAGONAL ARRANGMENT:**
Positive aspects: possibility to expand the unit or to connect the units together. Thus arrangement makes small clusters. **Negative aspects:** The single units lost their independence character. Makes easy the possibility of solidifying in the settlement.
 | Positivo: es posible expandir la vivienda o bien unir dos o mas unidades. este acomodo permite generar pequeños clusters. **Negativo:** al agruparse las unidades pierden su autonomia. Debido al acomodo, puede ser relativamente fácil crear un asentamiento permanente.



Refugio 'Acordeón' | Acordeon House



Student | Estudiante: Mónica Lucio

Materials | Materiales: aluminium tubes, cotton canvas waterproof and wood

| tubos de aluminio, tela de algodón a prueba de agua, triplay y madera

Tools required | Herramientas necesarias: screw | desarmador

Assembly time | Tiempo estimado de ensamblaje: 2 hr

Costs | Costo: aprox. 500 US\$ | \$5,158 MX pesos

Weight | Peso: 44 kg

Folding shelter is a unit desing to provide a temporary house for 4 persons. As an acordeon when unfolds creates diferent notes, the shelter unfolds to create a similar concept generating diferent spacial qualities.

The important aspect of this project is that from one piece the housing unit unfolds;

The time of assmblly is relative short since everything is contained in one pacakge tha just requieres to be unfold.

The materials are a metallic structure that supports the canvas and a frame to provide stability.

The shelter could be use in several ocacions

| Este refugio esta diseñado para proveer refugio temporal a cuatro personas.

El acordeón al plegarse y desplegarse crea diferentes sonidos, con este mismo concepto se crea la unidad habitacional para el refugio.

Lo interesante de este concepto es que de una sola pieza se puede construir el espacio deseado.

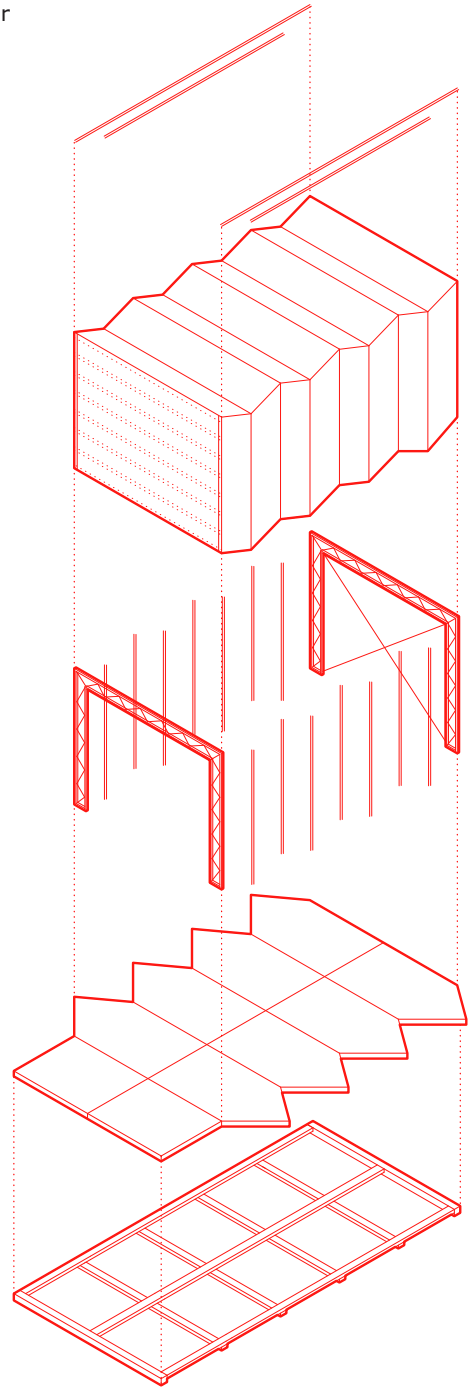
El tiempo requerido de construcción es mínimo ya que todo viene armado en un sistema que solo necesita desplegarse.

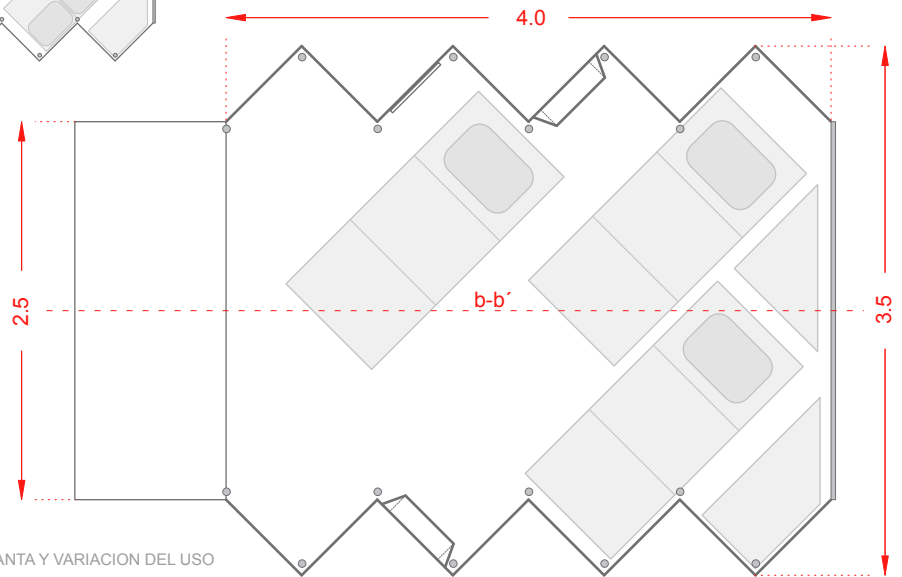
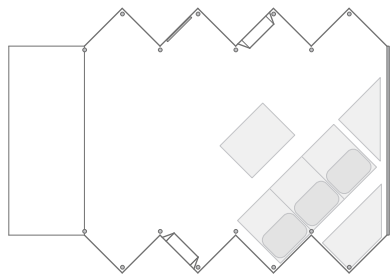
Los materiales son una estructura metálica que sostiene la lona y un marco para darle estabilidad.

El refugio es totalmente reusable



ISOMETRIC | ISOMETRIA





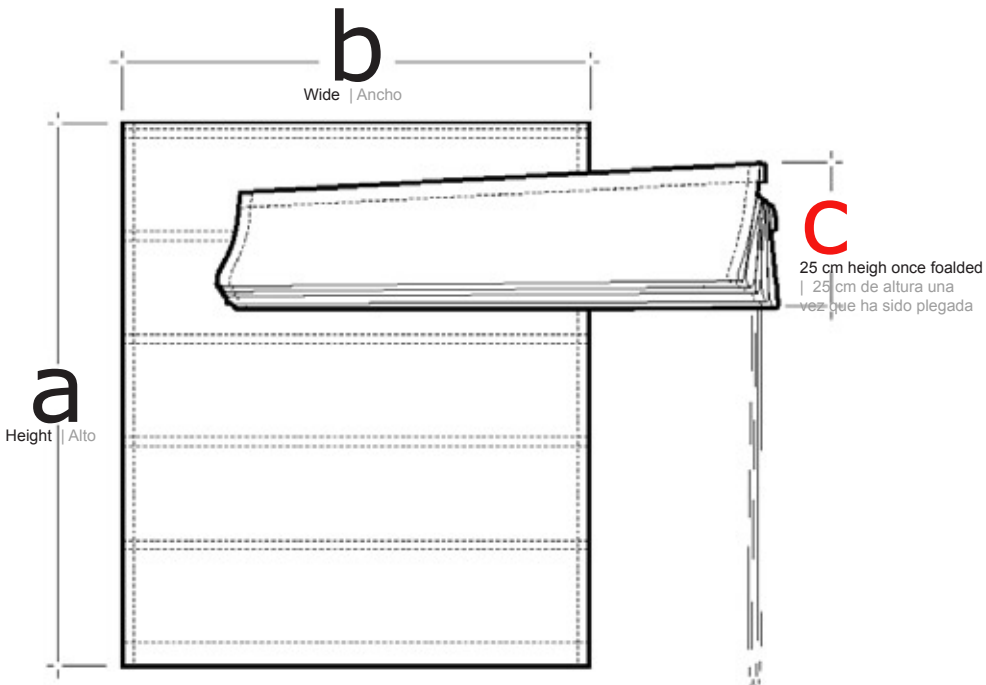
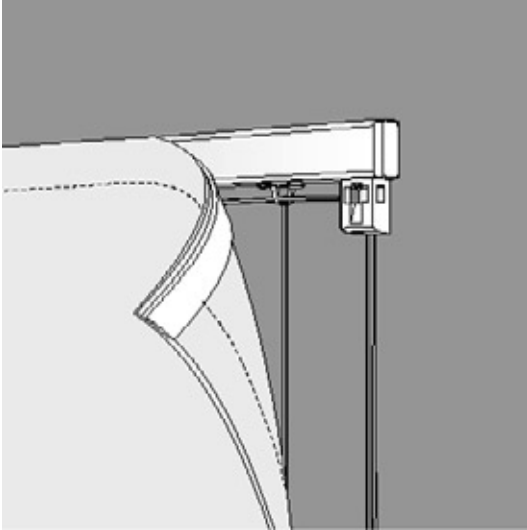
above PLAN AND VARIATION | PLANTA Y VARIACION DEL USO

below MODEL | MAQUETA



Movement systems with wire.
Common sistem with auto-
matic brake.

| Sistemas de accionamiento
con cordones. Sistema habit-
ual con freno retenedor
automático.



Diferent colors could be use in the construction of the foalding shelter.
| Distintos colores pueden ser seleccionados



above VIEW OF THE ACORDEON HOUSE IN THE CCR | VISTAS DE LA VIVIENDA EN EL REFUGIO

left SISTEM OF BLINDS | SISTEMA DE ACCIONAMIENTO DE PERSIANA



Student | Estudiante: Ana Gabriela Nolasco

Materials | Materiales: -

| -

Tools required | Herramientas necesarias: - | -

Assembly time | Tiempo estimado de ensamblaje: - hr

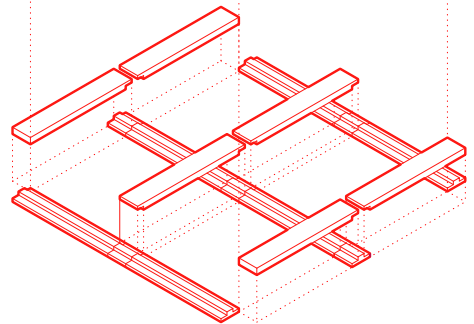
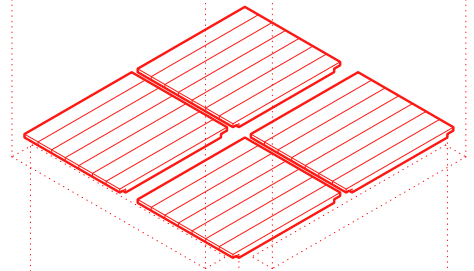
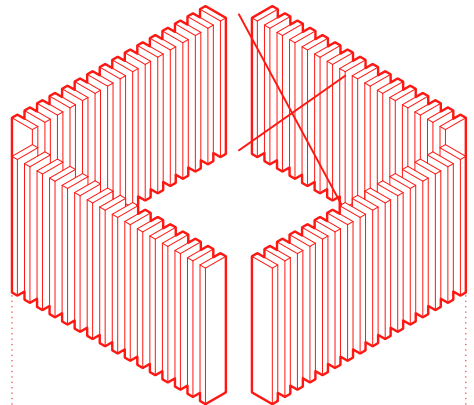
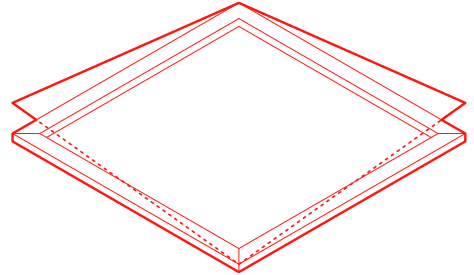
Costs | Costo: - aprox. - US\$ | \$-MX pesos

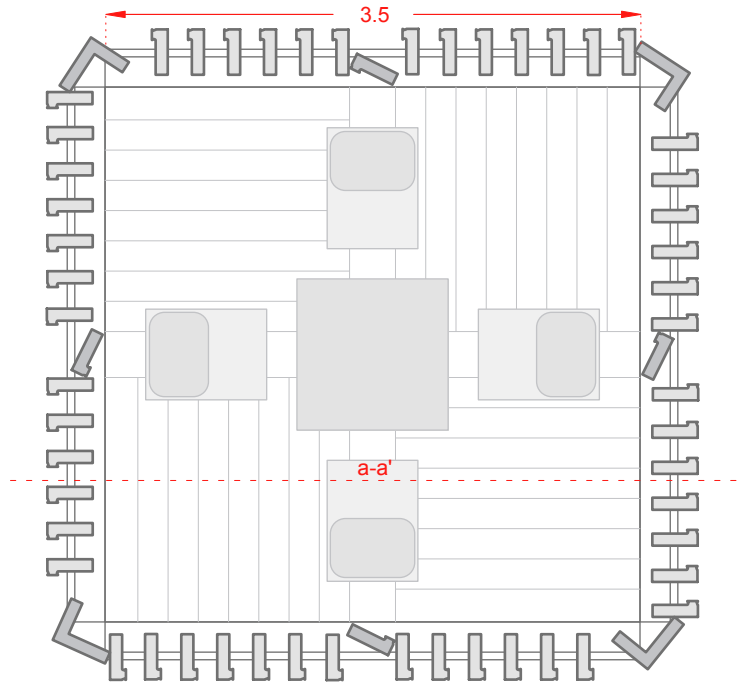
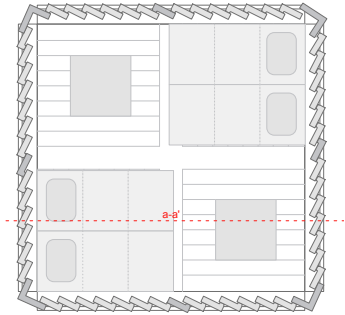
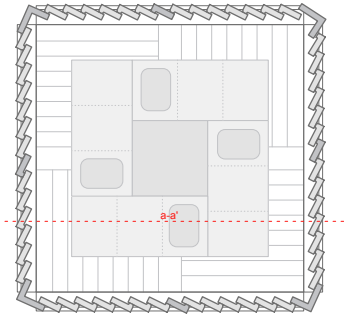
Weight | Peso: - kg

Casa móvil de partesoles | Mobile Blinds House

Blinds mobil house

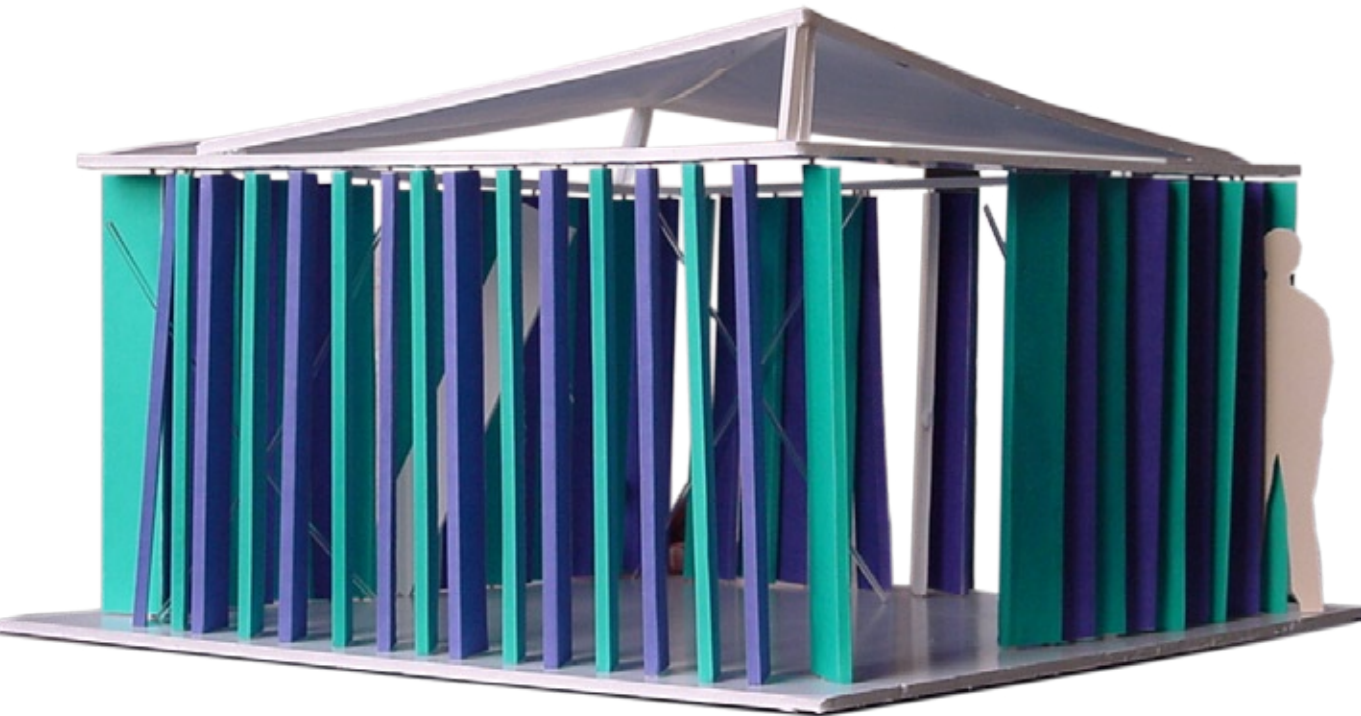
| Casa mobil de persianas





above PLAN | PLANTA DEL REFUGIO

below MODEL | MAQUETA



Refugio desplegable | Folding Shelter



Student | Estudiante: Rocío Sepúlveda

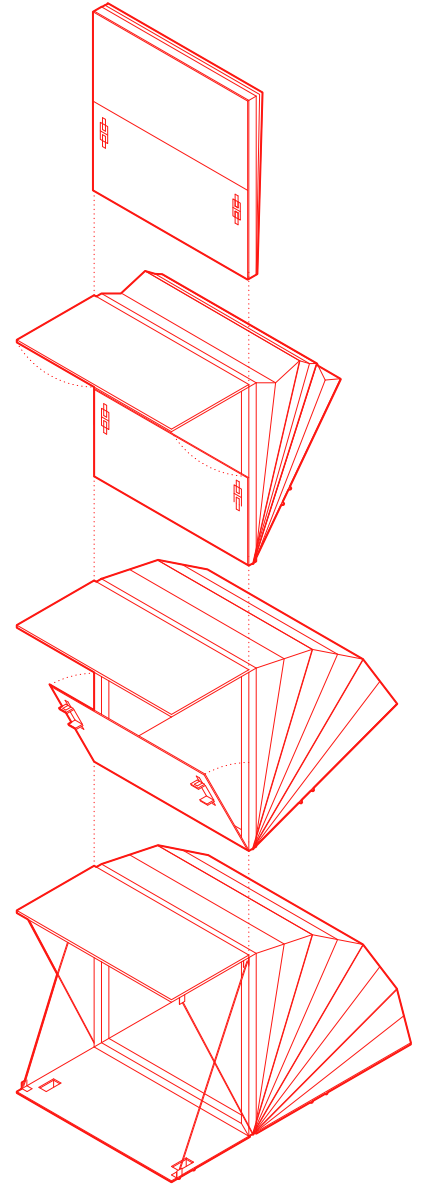
Materials | Materiales: cotton canvas waterproof, triplay and wood
| tela de algodón a prueba de agua, triplay y madera

Tools required | Herramientas necesarias: screw | desarmador

Assembly time | Tiempo estimado de ensamblaje: 0.5 hr

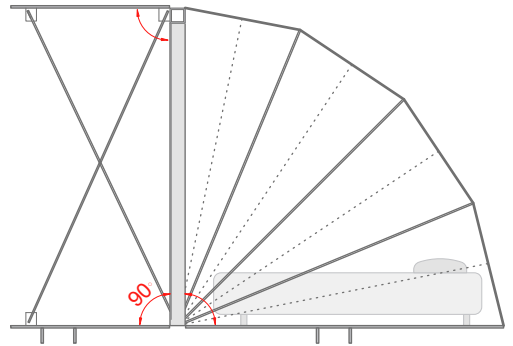
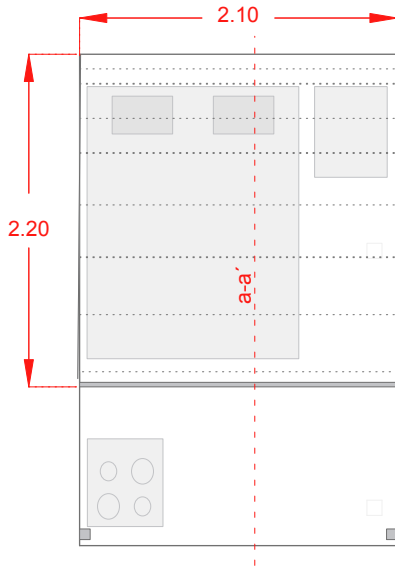
Costs | Costo: - aprox. - US\$ | \$-MX pesos

Weight | Peso: - kg



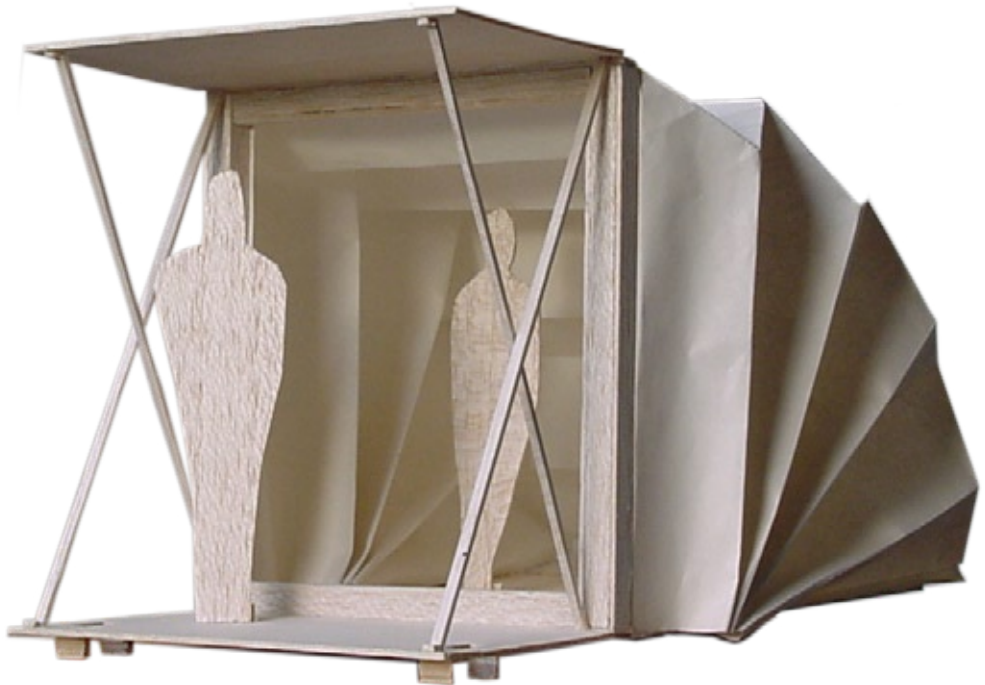
above ISOMETRIC | ISOMETRIA

left REFERENCE IDEA | IDEA



above PLAN AND SECCION | PLANTA Y CORTE DEL REFUGIO

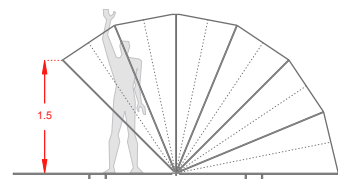
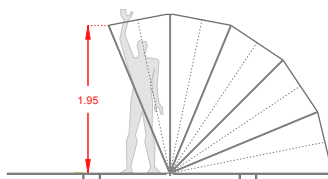
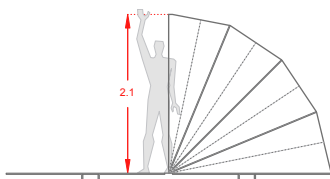
below MODEL | MAQUETA

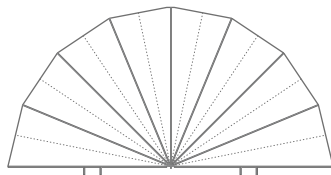
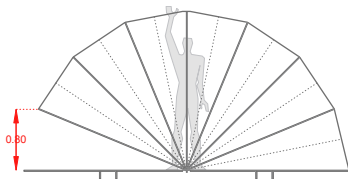




left and right VIEW OF THE FOLDING SHELTER IN THE CCR | VISTA DEL REFUGIO EN EL CCR

below SIMILAR CONCEPT WITH 180° FOLDING FUNCTION | CONCEPTO PLEGABLE DE 180°





Refugio de cajas | Box-wall Shelter

Student | Estudiante: Alejandra Zambrano

Materials | Materiales: 210 fruit-boxes, cotton canvas waterproof, triplay and wooden beams
| 210 jacaes de madera, tela de algodón a pueba de agua, triplay, vigas de madera y clavos
Tools required | Herramientas necesarias: hammer, level | martillo, nivel
Assembly time | Tiempo estimado de ensamblaje: - hr
Costs | Costo: aprox. 380 US\$ | \$3,893 MX pesos
Weight | Peso: - kg

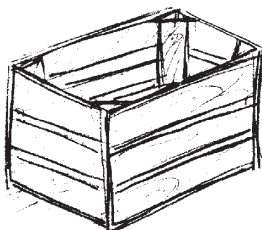
Fruit boxes are a common object with which every person in Mexico is familiar and had easy access to one or couple of them. Based on the idea to provide a quick shelter with the help of existing things I design a temporary house for 4 persons that is based on the used of such boxes. Walls are construct with boxes and pols. The idea is that the walls could be used as a furniture to storage things.

Prefabricated door an windows are fix in a grid based on the modul of our primate material: the box.

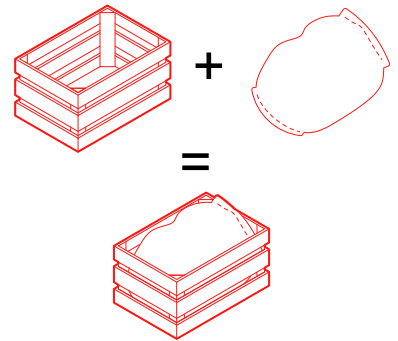
During day the box-wall allows the circulation of air, during night the shelter became a light box that provides security and identity to the Camp.

| Las cajas de fruta son un objeto de la vida cotidiana en México siendo estas de gran utilidad y fácil acceso. Basandome en la idea de proveer refugio casi inmediato y usando objetos que existentes en la comunidad diseñe un refugio de cajas que pueda albergar hasta 4 personas. Los muros estan hechos usando dichas cajas e insertando entre estas puertas y ventanas prefabricadas. La idea es que estos funcionen también como repisas para almacenar objetos. Durante el dia los muros permiten el libre flujo de aire; de noche el refugio es una linterna que ilumina el campo.

Este refugio es totalmente reusable.

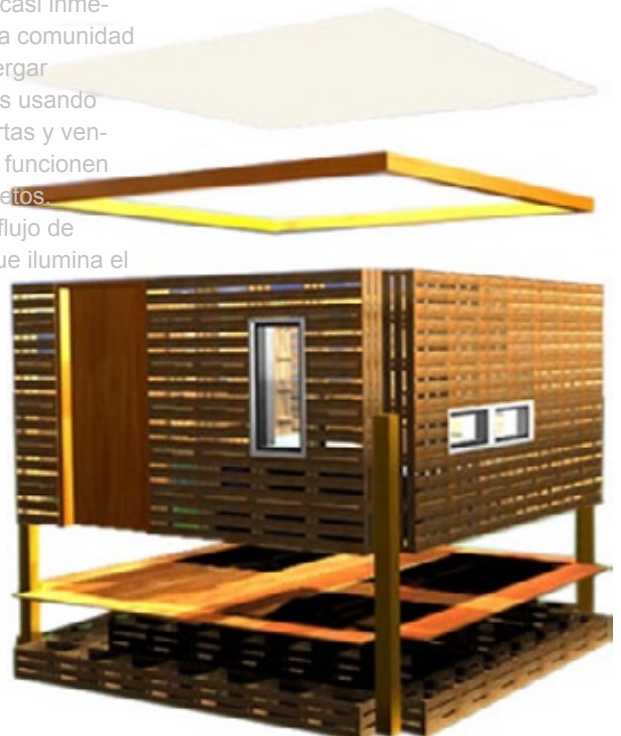


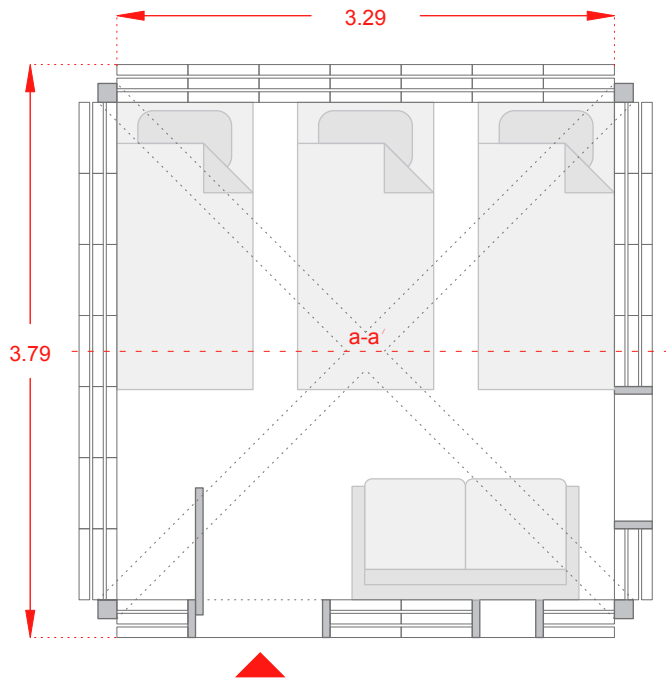
above OBJECT AS MATERIAL (fruit-box)
| OBJETO COMO MATERIAL (cajas de fruta)



above FUNDATION (arena bags + boxes)
| CIMENTACION (cajas de fruta + sacos de arena)

below ISOMETRIC OF THE SHELTER
| ISOMETRICO DEL REFUGIO





above PLAN | PLANTA

below MODEL | MAQUETA





above and next page VIEW OF THE BOX-WALL SHELTER IN THE CCR | VISTA DEL REFUGIO EN EL CCR
below INTERIOR VIEW | VISTA INTERIOR



camps | campos: This type of settlement is where refugees find accommodation in purpose built sites where a full range of services, for example water, sanitation, are provided, usually exclusively for the population of the site.

High density camps with very large populations are the worst possible option for refugee accommodation. However, this may be the only option because of decisions by the host country or simply because of a lack of alternatives. They are common in areas with little or no pre-existing infrastructure or where the size of the refugee population is such that it would put an intolerable strain on the local resources if [dispersed settlement or mass shelter] were used. | Este tipo de asentamiento provee instalaciones, facilidades y servicios, tales como agua, sanitarios, etc., específicamente diseñados para proveer refugio usualmente de manera exclusiva a los damnificados.

cluster planning | desarrollos cluster: Aims at creating decentralized clusters of communities, where shelters are grouped together, to clearly define social units. | El objetivo de estos es crear agrupamientos de comunidades descentralizados, donde los refugios se agupen definiendo de esta manera claras unidades sociales.

dispersed settlement | asentamientos dispersos: This type of arrangement is where the refugees find accommodation within the households of families who already live in the area of refuge. The refugees either share existing accommodation or set up temporary accommodation nearby and share water, sanitation, cooking and other services of the preexisting households. | Los hogares existentes y cercanos al área del refugio proveen alojamiento a los refugiados. Estos últimos comparten o bien instalan refugios temporales con la intención de compartir agua, servicios sanitarios y de cocina así como otros servicios establecidos por los habitantes de la zona.

displaced person: Persons who, for different reasons or circumstances, have been compelled to leave their homes. They may or may not reside in their country of origin, but are not legally regarded as refugees. | Persona que debido a distintas circunstancias o razones se ha visto obligada a dejar su hogar y/o país de origen. Pudiendo o no residir en su país de origen, de cualquier manera tienen el estatus legal de refugiados.

grid planning: Creates repetitive patterns of long rows of plots and/or shelters. | Acomodo repetitivo de patrones o largas filas de terrenos y/o refugios.

internally displaced persons (IDPs): May be defined as persons displaced from their habitual place of residence by disaster, fear of persecution or fear of physical harm, but who remain within the territorial limits of their country of origin. Unlike refugees, IDPs have no internationally defined legal status. | Se define a aquellas personas desplazadas de su lugar de origen ya sea por desastres naturales, miedo de persecución o daño físico, pero que permanece dentro de los límites territoriales

1. UNHCR 2000
2. Ibid. 5
3. Ibid. 5
4. UN DHA 1992
5. Ibid. 5
6. DFID 2003
7. Ibid. 5
8. UNHCR 1951/1967
9. Sphere 2000

de su país de origen. A diferencia de los refugiados los IDP's no tienen ningún estatus legal

mass shelter: This type of settlement is where refugees find accommodation in pre-existing facilities, for example, in schools, barracks, hotels, gymnasiums. These are normally in urban areas and are often intended as temporary or transit accommodation. | Este tipo de asentamiento provee albergue a los refugiados dentro de facilidades pre-existentes, como por ejemplo, escuelas, cuarteles, hoteles, gimnasios, etc. Ubicados normalmente en áreas urbanas estos espacios son reservados para uso temporal únicamente.

prototype: First version of something that could be applied everywhere and can be tested and improved before its final version is made.

refugee: ...the term "refugee" shall apply to any person who...owing to well-founded fear of being persecuted for reasons of race, religion, nationality, membership of a particular social group or political opinion, is outside the country of his nationality and is unable or, owing to such fear, is unwilling to avail himself of the protection of that country; or who, not having a nationality and being outside the country of his former habitual residence as a result of such events, is unable or, owing to such fear, is unwilling to return to it.

resettlement: Actions necessary for the permanent settlement of persons dislocated or otherwise affected by a disaster to an area different from their last place of habitation.

settlement: a community of covered living spaces providing a healthy, secure living environment with privacy and dignity to those groups, families and individuals residing within them.

shelter: Shelter is a critical determinant of survival in the initial stage of an emergency. Beyond survival, shelter is necessary to enhance resistance to disease and provide protection from the environment. It is also important for human dignity and to sustain family and community life as far as possible in difficult circumstances. The purpose of shelter, site selection and physical planning interventions is to meet the physical and primary social needs of individuals, families and communities for safe, secure and comfortable living space, incorporating as much self-sufficiency and self-management into the process as possible.

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- www.absolutehollywoodworld.com
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Camp for Catastrophe Refugees

CURSO DE VERANO June 8 - July 13, 2004, Departamento de Arquitectura, ITESM Campus Monterrey
Taller de Arquitectura II, Ar9834 / Taller de Arquitectura IV, Ar9836
Visiting Professors: Marisol Rivas Velázquez, Christian Schmutz (AURA architects, Berlin/Mexico)
External critics and experts will join the midterm and final presentations.

A Scenario: Monterrey, June 7, 2004

The continuous rainfall of the last weeks brought the river Santa Catarina to raise from its usual altitude to the highest mark ever. Thousands of houses in the municipalities of San Pedro Garza García, Monterrey and Guadalupe have been destroyed or damaged. 20,000 inhabitants lost their homes and require immediate help. As a first aid help the state of Nuevo León decided last night to establish four temporary camps, in order to give the refugees a first shelter and to provide them with food, medical care and other supplies. These camps shall be in use for three months maximum, as long as the reconstruction of the destroyed areas and the relocation of their inhabitants will last.

One of the CCRs will be located in the area between the international airport of N.L. (General Mariano Escobedo) and the city of Cadereyta. It will give place for 5,000 refugees on an area of about 22 ha.



This summer course is divided into two core designs.

One for the participants of Taller de Arquitectura II, the other for those of Taller de Arquitectura IV. The aim is to develop all necessary temporary structures that are needed in order to be able to establish an operational camp for a scenario such as mentioned above.

The students from Taller de Arquitectura II are asked to develop temporary accommodation units for "private" use of the refugees (structures for living, sleeping, sanitary units etc.) whereas the students from Taller de Arquitectura IV, are expected to develop the temporary

structures for common use, such as an overall "masterplan" of the camp and the necessary temporary built structures of public use (camp hospital, food supplies, religious places, sport facilities, work places and other facilities).

The goal of this core designs is to develop new innovative prototypes that could serve as examples for similar cases worldwide. The emphasis here is put on the materialization of structures that temporarily can fulfill almost all basic needs of their inhabitants, without becoming permanent. Therefore all designs have to be developed to scales of minimum 1:10 in drawings, isometrics, (3d)models, diagrams, etc.

These core design are part of the research project "FWC" (Refugee Camp for the First World Citizens), undertaken by Peter Šenk, Emil Hrvatin, Marisol Rivas Velázquez, Christian Schmutz a.o. By mean of that the results of these design courses will become a contribution to the FWC Research and will be part of exhibitions and other publications of the FWC-Project (www.fwc.si)