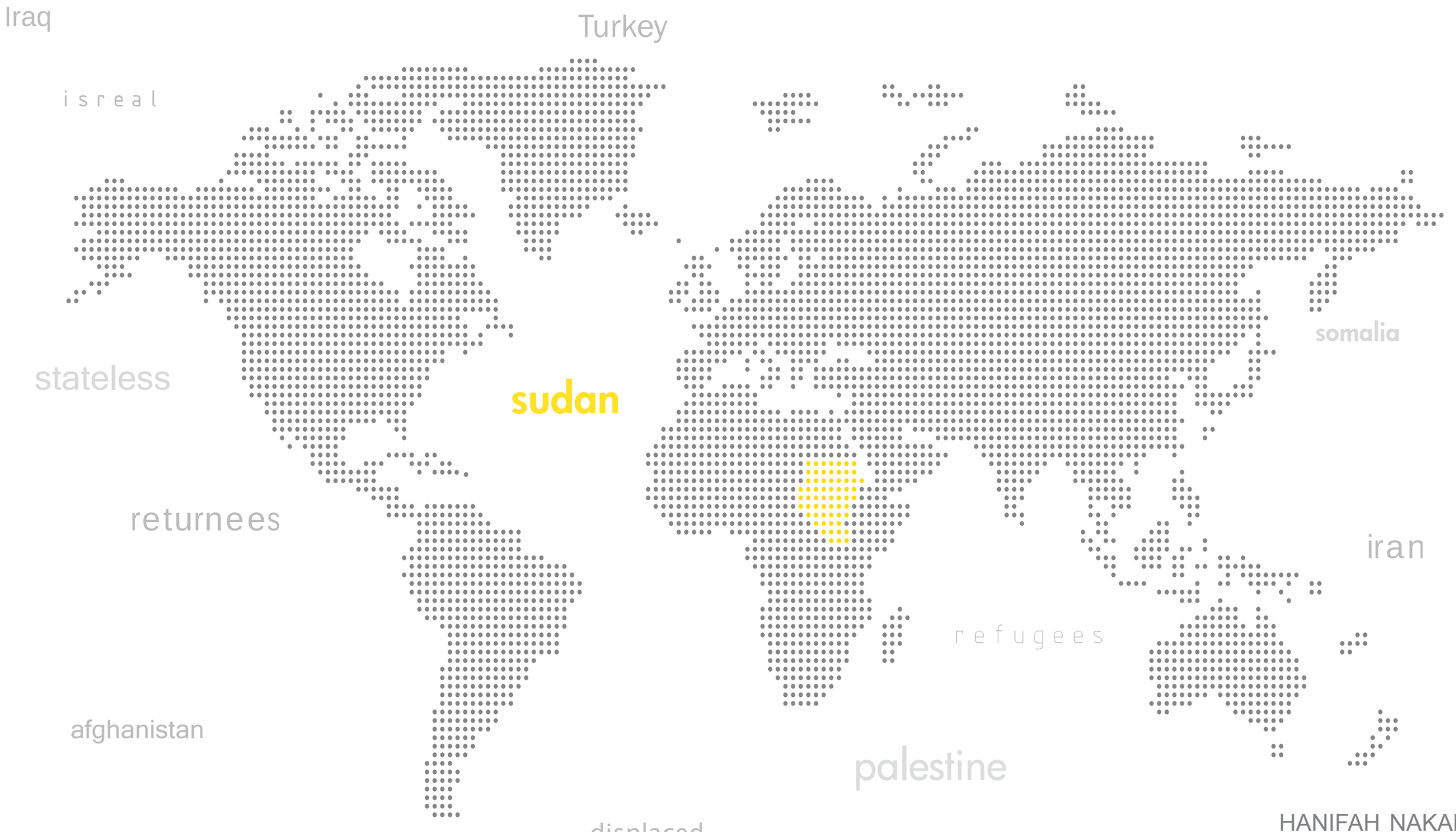
TRANSITIONAL REFUGEE COMMUNITY

DESIGN STRATEGY FOR DRY/ARID REGIONS



HANIFAH NAKALEMBE

MASTER'S PROJECT

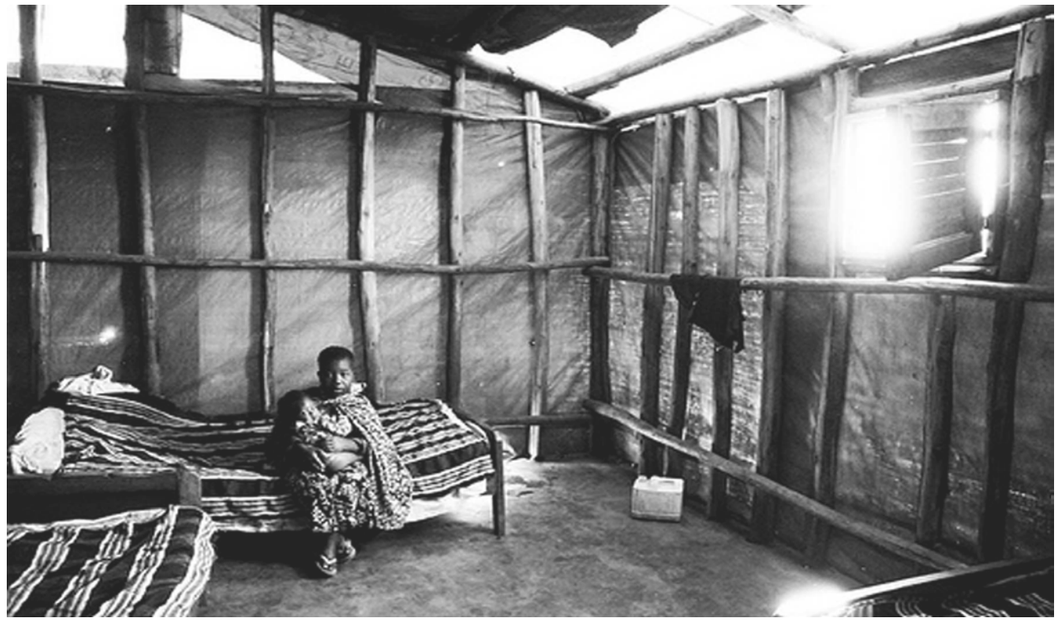
SPRING 2010

TRANSITIONAL REFUGEE COMMUNITY

DESIGN STRATEGY FOR DRY/ARID REGIONS

...the average duration of major refugee situations has increased from **9 years** (1993) to **17 years** (2003)

"Protected Refugee Situations," UNHCR, June 2004



PROJECT DEFINITION

"what is the master's project?"

Transitional Housing as defined by the United Nations High Commissioner for Refugees: shelter which provides habitable covering; a secure healthy living environment with privacy and dignity to those within it over a period between conflict or natural disaster and achieving a durable (permanent) shelter solution.

The proposed master's project is the exploration of how architectural planning and design can improve and increase efficiency in transitional housing during emergency relief and/or conflict related situations. The project proposal developed through design exploration of several prototypes that would not only be minimal but will also be culturally and climatically adaptive among other things. After a thorough selection process, concentration was given to arid/dry climate and the area selected for study was Darfur, Sudan.

"what is the project about?"

According to UNHCR, "one in seven people lives in a slum or refugee camp". Human displacement is a recurring situation worldwide and is an issue that has affected almost every civilization. Causes are due to natural disasters such as earth quakes, tornados, or human conflicts such as wars and political distress. Shelter is the most basic and crucial necessity after such occurrences. Not until as recent as 1999, there were no easily identifiable design resources for shelters or transitional housing after such crisis situations.

"why is the project being developed?"

The UNHCR also recorded that in 2004 the average duration of major refugee situations has increased from nine years in 1993 to seventeen years in 2003. One of the many challenges in the emergency relief housing industry is how to design a shelter that is not considered "too permanent". The issue with making shelters this way is that occupants have less incentive to return to their previous living conditions before the displacement. As a result, governments tend to lower housing as a priority, therefore resulting into temporary refugee camps becoming permanent camps. The primary aim of the prospective master's project design will be to develop prototypical autonomous structures that will serve as transitional housing but with an expiration date. In other words, the solution will be durable enough to withstand weather constraints but with a specific life span with the goal to make governments take initiative in resolving the housing situation.

Last but not least, the main goal with this type of project would be to promote architecture and other related design fields as a collaborative effort with the main outcome which entails public responsibilities. Emphasize the role of architecture in humanitarian relief and encouraged People Oriented Projects.

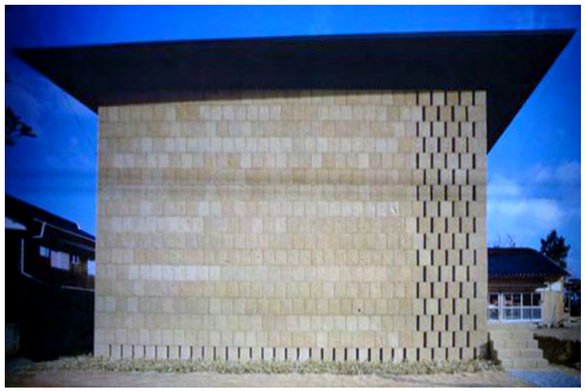
DESIGN GOALS

04

Developing a prototypical housing unit that would serve as a transitional dwelling for communities affected during conflict or natural disasters in areas of dry/arid climates.

Designing dwellings that not only function as a single autonomous unit but also, once assembled as a group setting, operate corroboratively as a unified sustainable community.

Establishing flexible design standards that will be accommodating to the cultural background of the displaced population at large, depending on the setting. Specific concentration on the psychological importance of culture in relation to displacement.



Aesthetics

design should be visually appropriate and architectural in its simplicity and overall form.

Culture

sensitive and adaptive to the cultural backgrounds of the specified displaced population by taking into account traditional spatial needs and family size.

Durability

the ability to resist everyday and/or weather related wear and tear for the designated period it is occupied.

Transition

between temporary shelters (tents) to a more habitable shelter that will sustain the occupant for longer than one year. building in phases with the potentiality of a permanent community depending on duration of refugee status.

Community Development

an emphasis on "people- oriented planning" with a focus on ownership and shared responsibility. development of trades and skills.

Materials

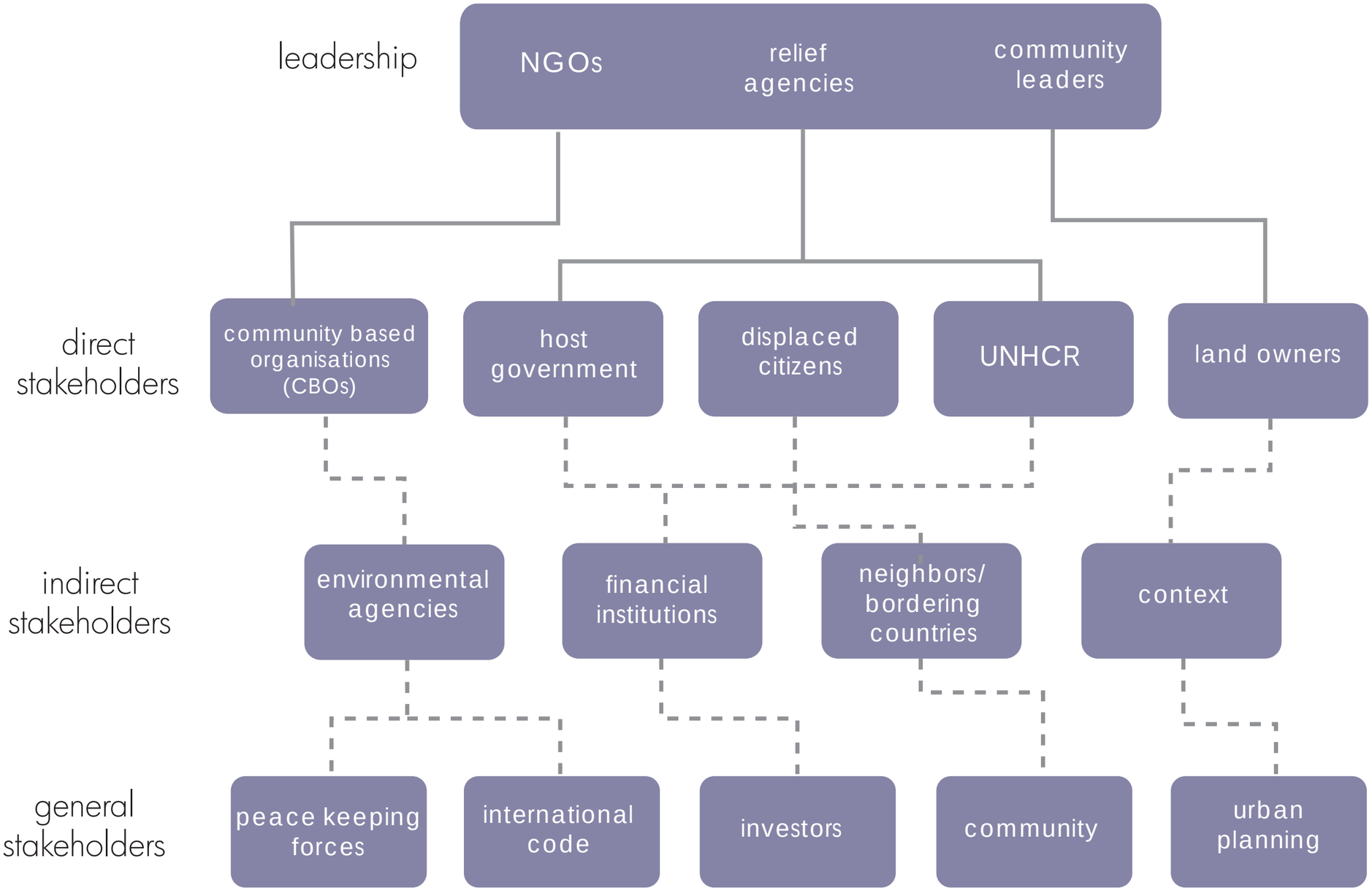
use of available resources local to the area to reduce dependency on imported materials.

Methodology

use of local skills and traditional construction methods with low maintenance.

Environmentally Conscience

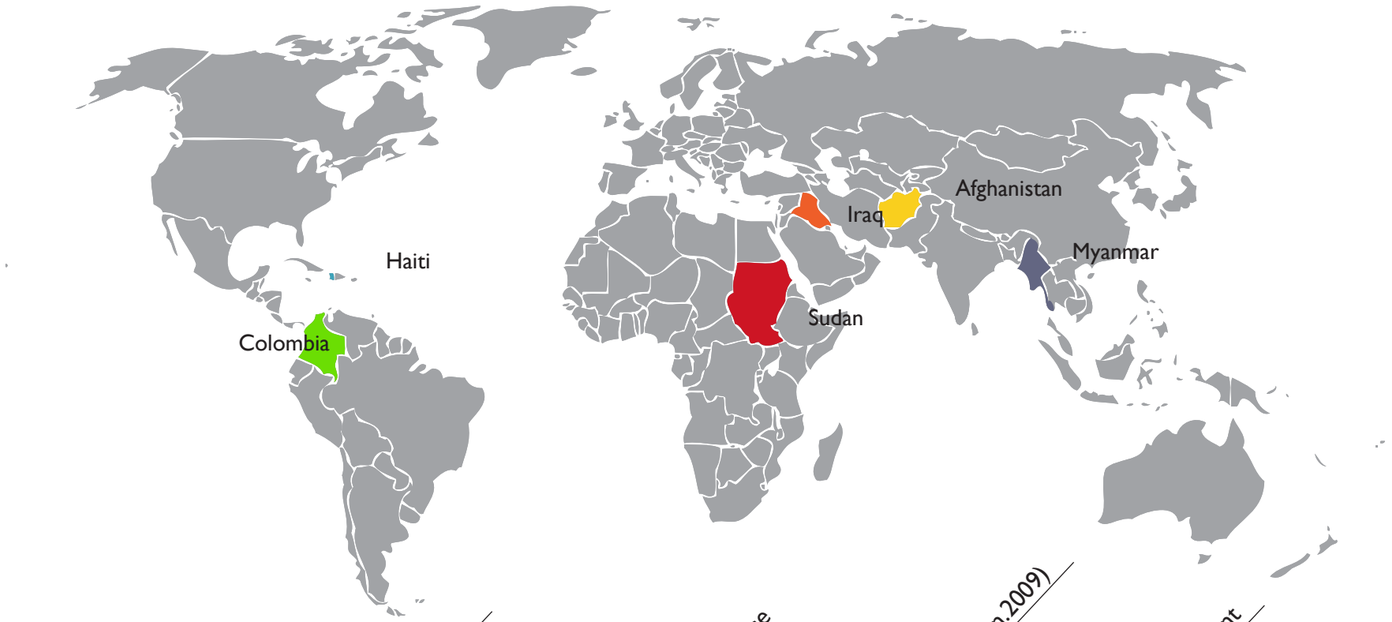
design solution that integrates passive systems applicable to the regional climate and encourages reuse and recycling of materials.


leadership
NGOs
relief agencies
community leaders
direct stakeholders
community based organisations (CBOs)
host government
displaced citizens
UNHCR
land owners
indirect stakeholders
environmental agencies
financial institutions
neighbors/ bordering countries
context
general stakeholders
peace keeping forces
international code
investors
community
urban planning

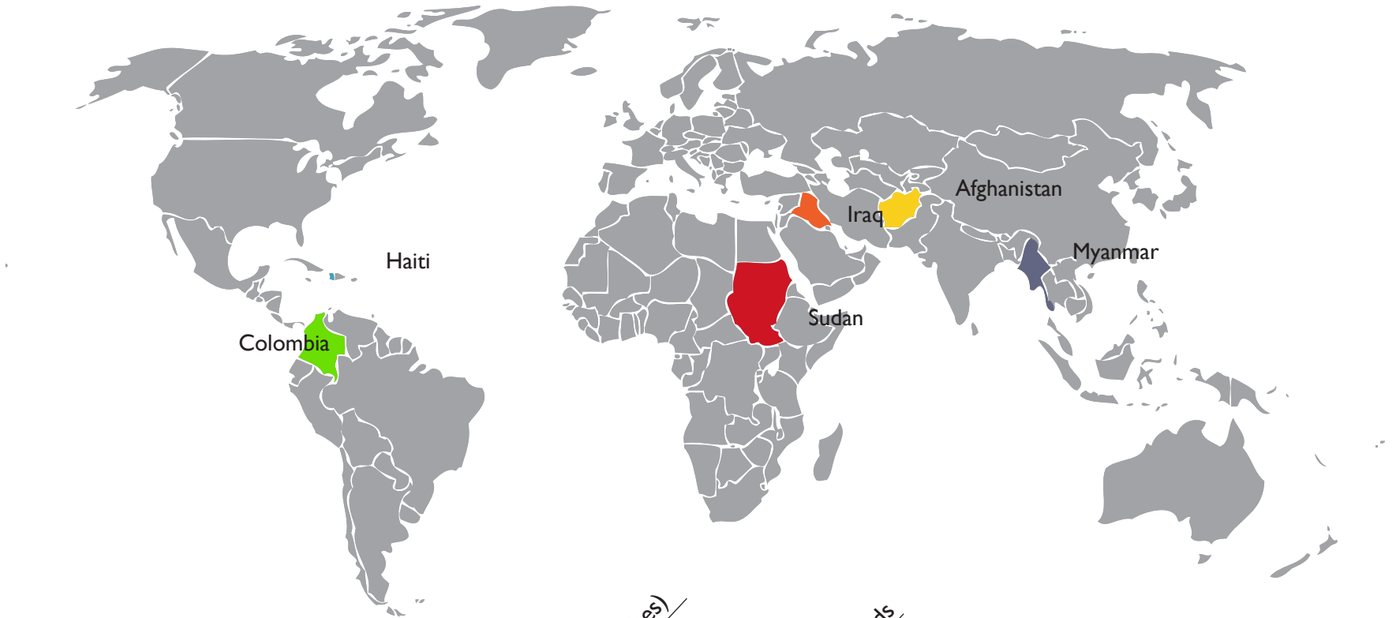
the UN High Commissioner for Refugees reported that there were **9,200,000** refugees were reported in 2004 alone...

"2004 Global Refugee trends," UNHCR, June 2005

RESEARCH PROCESS

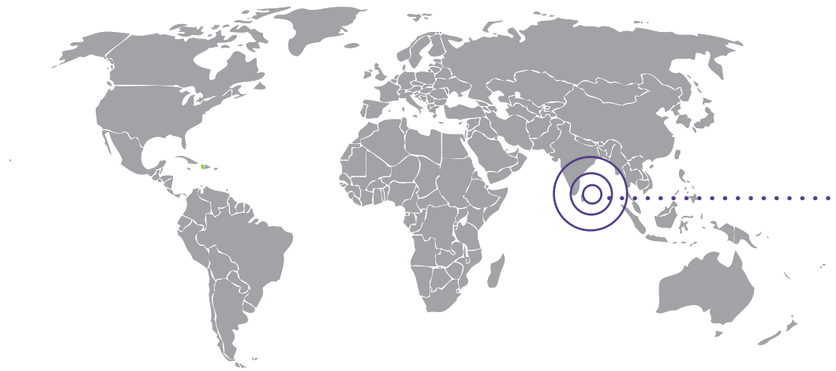


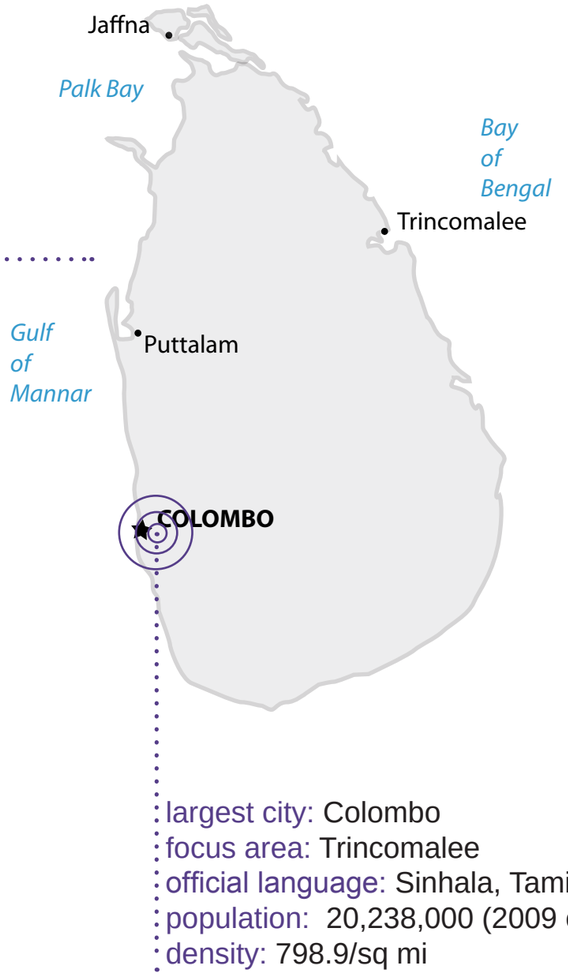
	situation	affected regions	date of occurance	No. displaced (Jan.2009)	area of settlement
COLOMBIA	internal conflict due to illegal production of Coca	Pacific Coast, incl. Cauca, Chocó and Nariño, Arauca, Antioquia, Guaviare and Sur de Bolivar.	1964 to present	3,000,000	Bogota
HAITI	Earthquake Hurricanes	Port-au Prince Gonaïves	Jan. 2010 Aug - Sept 2008	TBD	Petionville, Pravaille
MYANMAR	Cyclone Nargis	Yangon, Ayeyarwady, Bago Divisions; Mon and Kayin States	May. 2008	790,000	
SUDAN	internal conflict	Darfur region,	Feb 2003 to present	500,000	Chad, Khartoum, El Fasher
IRAQ	internal conflict floods	Baghdad	March 2003 to present	2,647,251	Al Waleed, Najaf, Samara



	city	climate	avg. temp. (°F)	avg. Perp.(inches)	natural hazards	winds	soil type	terrain
COLOMBIA	Quibdo	tropical rainforest	high: 88 (jan) low: 72 (mar)	high: 8 (may) low: 3 (feb)	earthquakes, volcanoes floods			
HAITI	Port-au-Prince	sub-tropical/ semi-arid	high: 95 (aug, jul) low: 72 (feb, dec)	high: 9.8 (may) low: 1.8 (dec, jan)	earthquakes, floods, hurricanes	located lee-ward side of Hispaniola, low trade winds	mountains: thin, loose soil lowlands: clay, loam plain/valley: alluvial soil	coastal plains, 2/3 covered with three mountain ranges
MYANMAR	Yangon	tropical	high: 97 (mar, apr) low: 64 (jan)	high: 22.9 (may) low: 0.12 (dec, jan)	earthquakes, cyclones, landslides, floods			
SUDAN	Khartom	semi-arid	high: 108 (may) low: 59 (jan)	high: 2.8 (aug) low: 0 (nov-apr)	drought, sand storms		north/west: sandy soil central: clay soils south: laterite soil White/Blue Nile: alluvial	
IRAQ	Baghdad	dry/ arid	high: 111 (jul) low: 39 (jan)	high: 1.3 (mar) low: 0 (jul-sep)	floods (north), dust and sand storms		alluvial soils and marshland along Tigris/Euphrates	north: highlands south: desert plains

SRI LANKA





COUNTRY PROFILE: SRI LANKA

avg. temperature:
high - 95° (jun)
low -75 (nov)

avg. rainfall:
high -14” (dec)
low - 1.1” (jul)

terrain:
terraced highlands, paddy fields, scrubland, forest, wetlands, and lagoons

agricultural resources:
tea, rice,

natural resources (national)
coconut, rubber, tea, steel, textiles, plywod, cement, graphite, limestone, graphite, mineral sands, gems, phosphates, clay, hydropower

industries (national)
rubber processing, tea, coconuts, and other agricultural commodities; telecommunications, insurance, and banking; clothing, cement, petroleum refining, textiles, tobacco

ethnic composition
Muslim: 41%
Tamil: 35%
Sinhalese: 24%

situation
occasional cyclones and tornadoes
-2004 tsunami displacement

pop. displaced
73,000 civilians

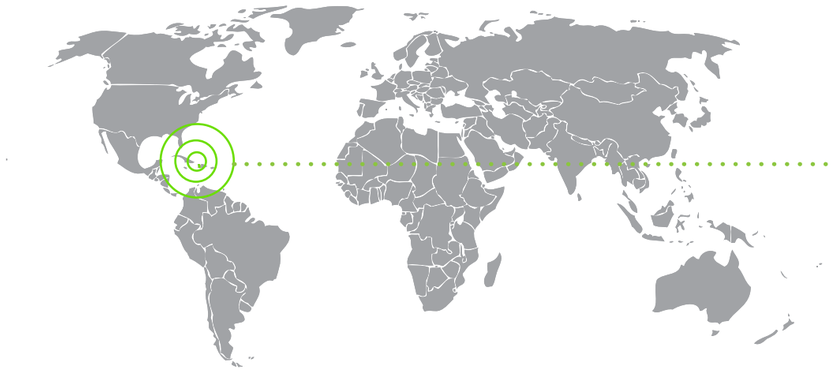
affected districts:
Kuchchaveli, Town and Gravets, Kinniya, Seruvila, Muttur, Echchilampatta

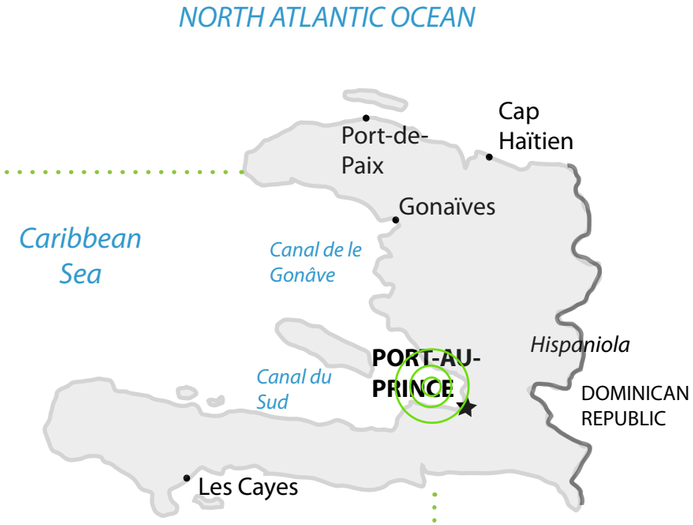
IDP camp areas:
Trincomalee

largest city: Colombo
focus area: Trincomalee
official language: Sinhala, Tamil
population: 20,238,000 (2009 estimate)
density: 798.9/sq mi

RESEARCH PROCESS

HAITI





COUNTRY PROFILE: HAITI

avg. temperature:
high - 95° (jul, aug)
low -72 (feb, dec)

avg. rainfall:
high - 9.8” (may)
low - 1.8” (dec, jan)

terrain:
mountains: thin loose soil
low land: clay, loam soils
plains/valleys: alluvial soils

agricultural resources:
coffee, mangoes, sugarcane, rice, corn, sorghum, wood, sisal

natural resources:
bauxite, copper calcium carbonarte, gold, marble

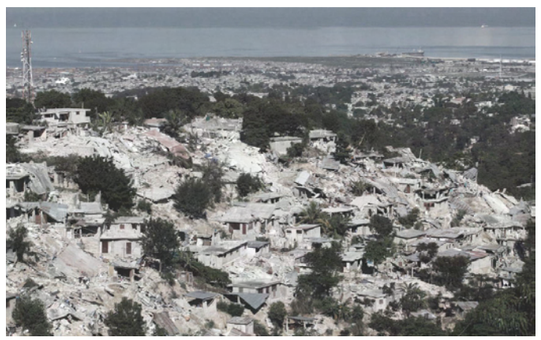
industries:
sugar refining , flour milling, textiles, cement, light assembly

religious composition
Catholic: 80%
Protestant: 16%
Haitian Vodou 5%

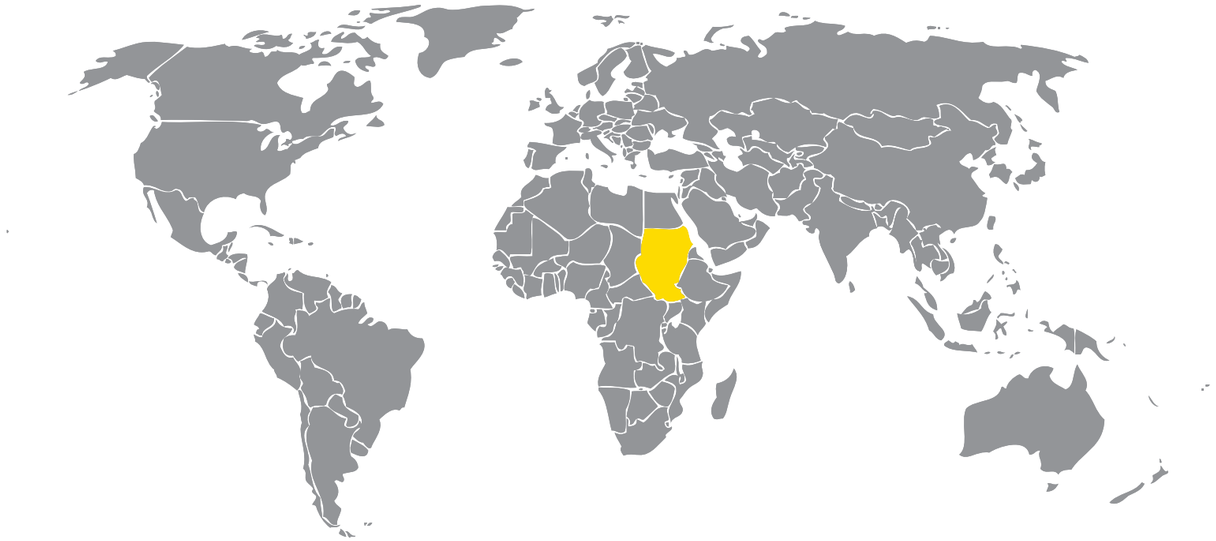
Situation:
- 2010 earthquake leaving almost half of the capital’s population displaced
- located in the middle of the hurricane belt and subject to severe storms from July to October; occasional flooding and earthquakes, periodic droughts

IDP camp area:
Petionville: currently 50,000 refugees, eastern suburb of Port-au-Prince.
Croix de Bouquette: 10,000 refugees, northern suburb of Port-au-Prince.

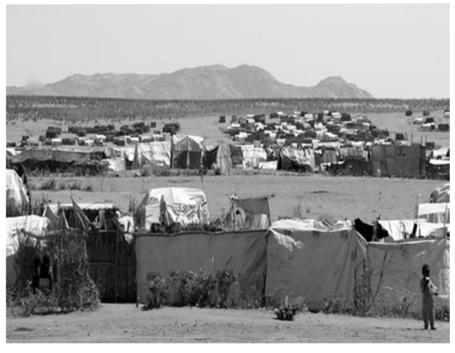
capital: Port-au Prince
official language: Haitian Creole, French
population: 9,035,536 (2009 estimate)
density: 936.4/sq mi



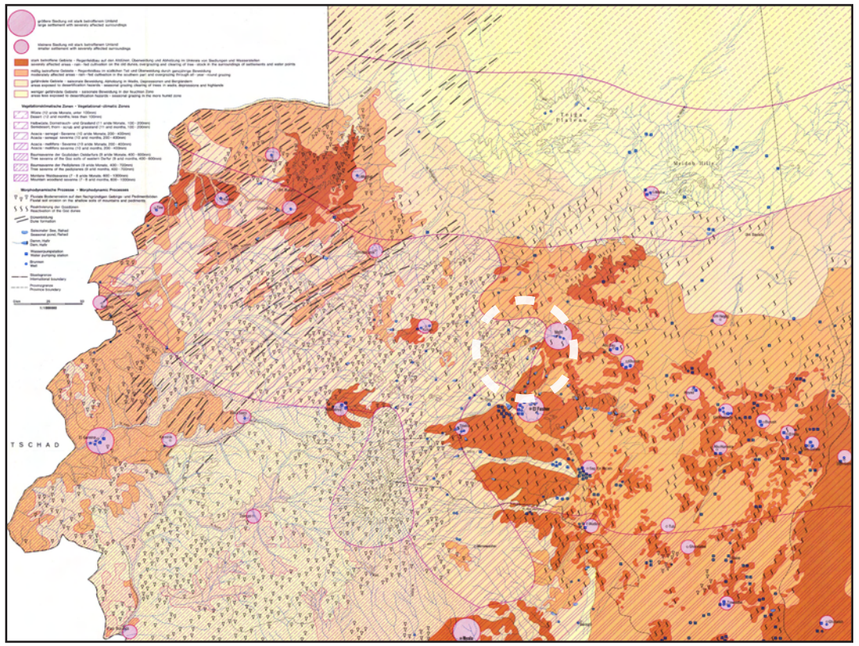
Country Profile: DARFUR, SUDAN



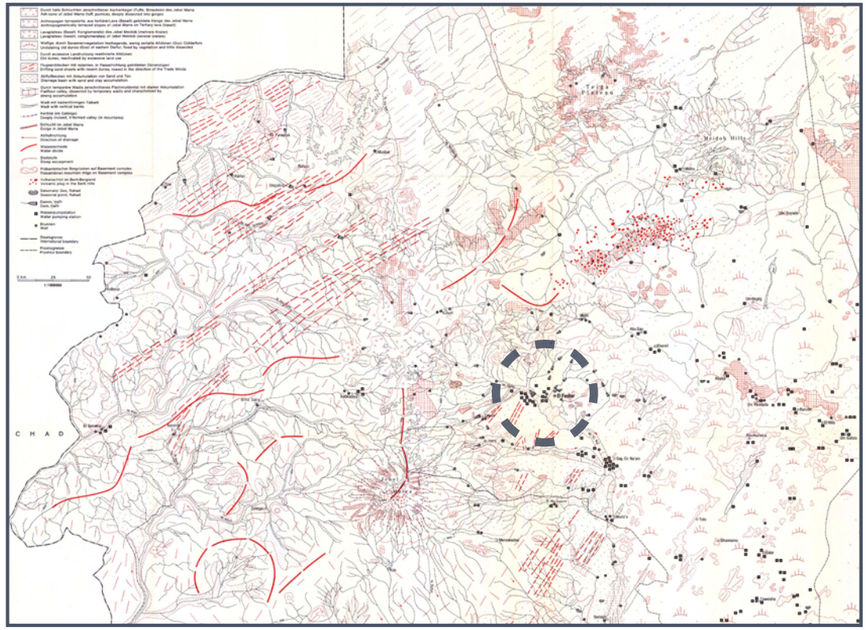
capital: Khartoum
official language: Arabic
population: 42,272,000 (2009 estimate)
density: 43.7/sq mi
focus area: Darfur
IDP population: 500,000 +



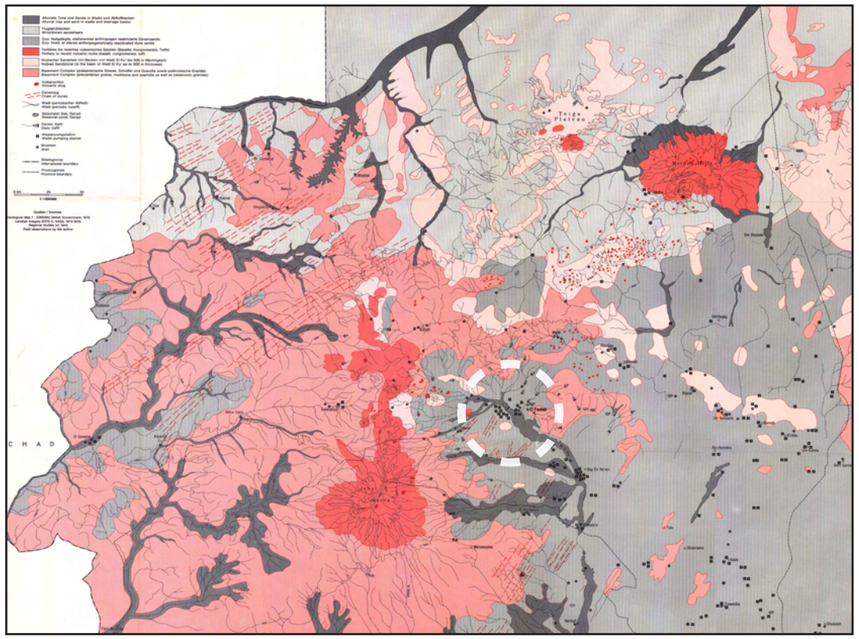
RESEARCH PROCESS



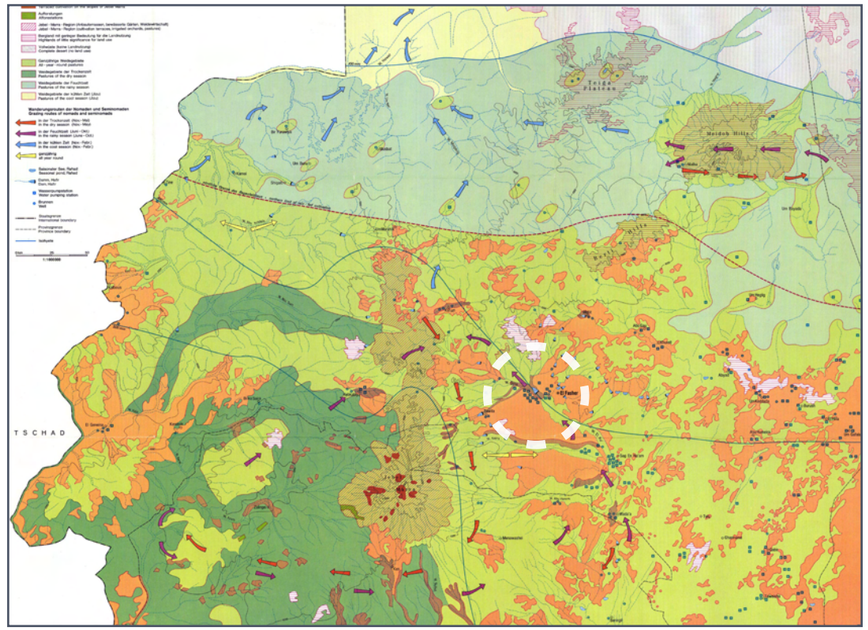
DESERTIFICATION MAP



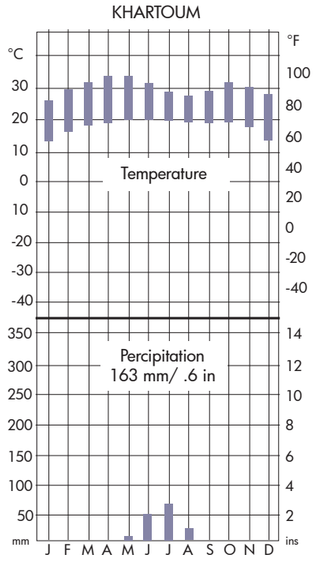
GEOMORPHOLOGY MAP

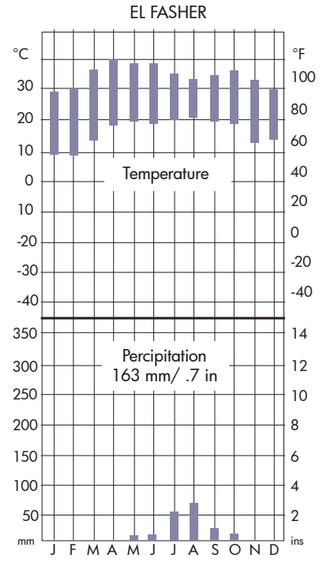


HYDROGEOLOGICAL MAP



LAND USE MAP





AVG. TEMPERATURE:

HIGH - 101° (MAY)

LOW - 59° (JAN)

AVG. RAINFALL:

HIGH - 4.8”

LOW - 0”

TERRAIN:

EAST: PLAINS AND LOW HILLS, SANDY SOILS,

NORTH: SAHARA DESERT, DRY ARID PLATEAUS

WEST: BASEMENT ROCK WITH THIN LAYER OF SANDY SOIL; JABEL MARRA VOLCANIC MOUNTAINS; TEMPERATE, HIGH RAINFALL, PERMANENT WATER SPRINGS.

AGRICULTURAL RESOURCES:

SISAL, BAMBOO, LIVESTOCK, CASH CROPS,

NATURAL RESOURCES (WITHIN SUDAN):

PETROLEUM; SMALL RESERVES OF IRON ORE, COPPER, CHROMIUM ORE, ZINC, TUNGSTEN, MICA, SILVER, GOLD, HYDROPOWER

INDUSTRIES (WITHIN SUDAN):

OIL, COTTON GINNING, TEXTILES, CEMENT, EDIBLE OILS, SUGAR, SOAP DISTILLING, SHOES, PETROLEUM REFINING, PHARMACEUTICALS, ARMAMENTS, LIGHT TRUCK ASSEMBLY, RUBBER (TIRES)

RELIGIOUS COMPOSITION:

ISLAM: 80%

ANIMIST: 15%

CHRISTIANITY: 5%

CONFLICTS/NATURAL HAZARDS:

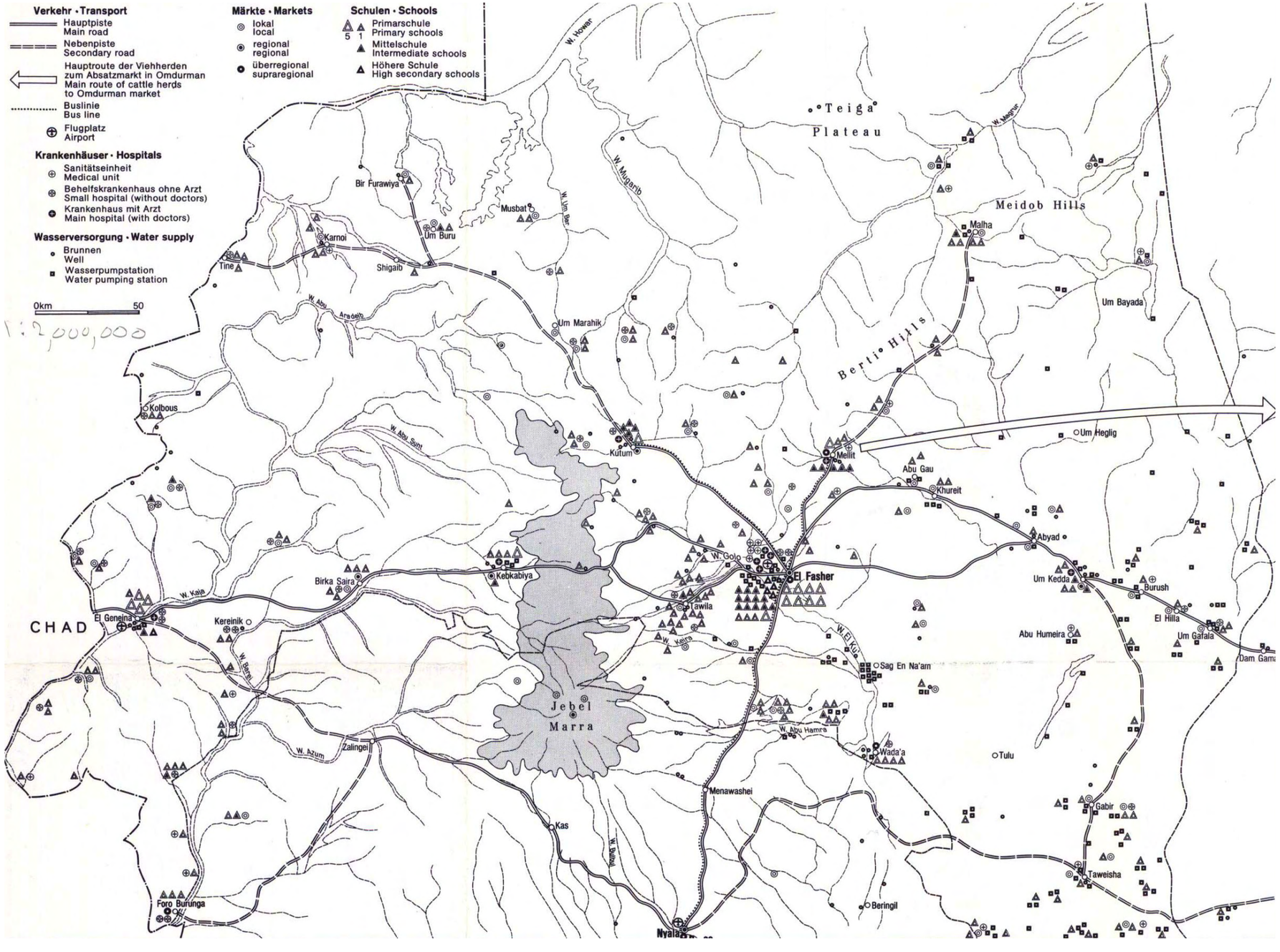
ON GOING CONFLICT BETWEEN THE JANJAWEED, SUDANESE GOVERNEMENT.

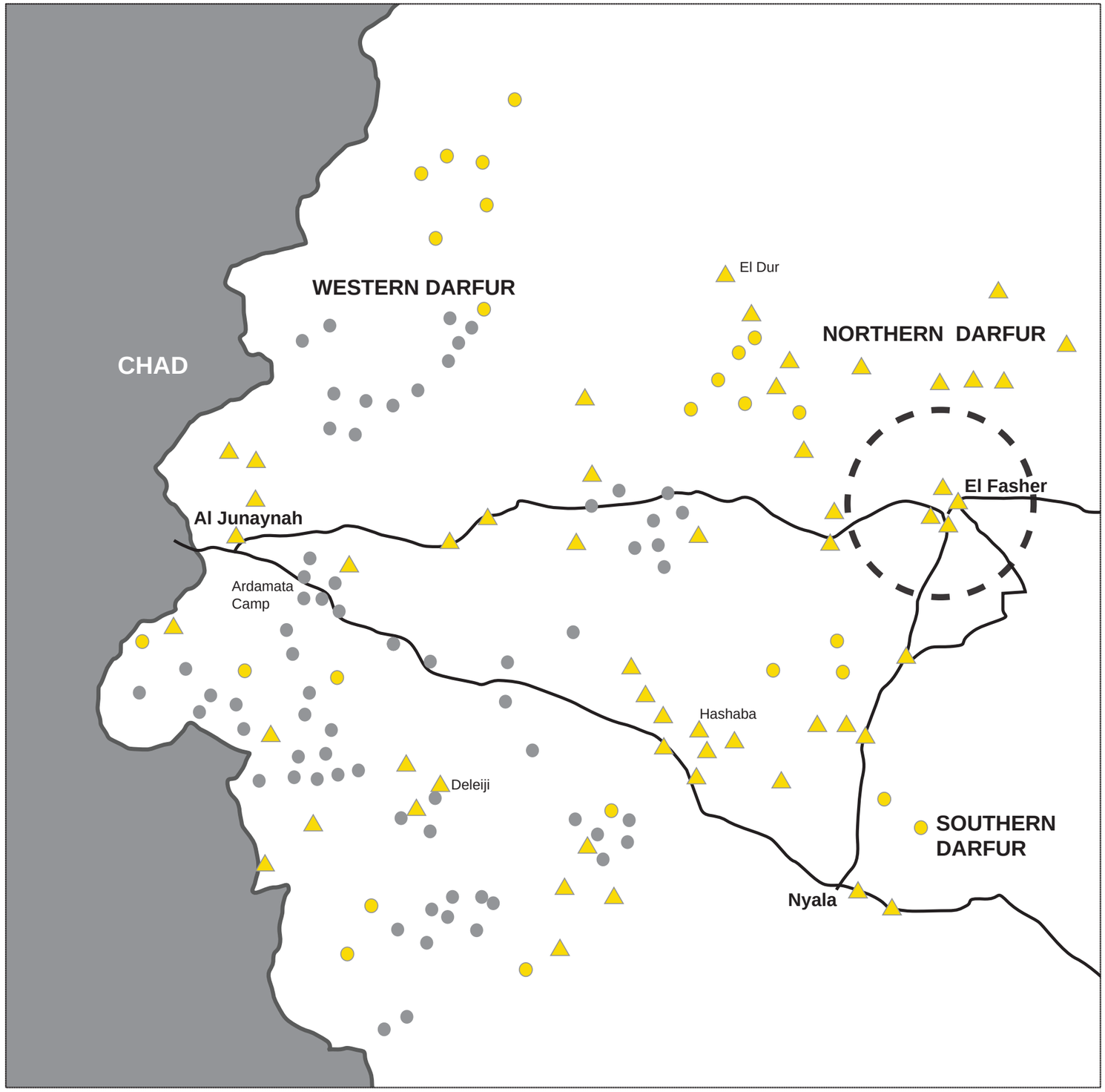
TOO MANY PLAYERS TO DETERMINE MAIN SOURCE.

DUST STORMS AND PERIODIC PERSISTENT DROUGHTS

MAIN IDP (INTERNALLY DISPLACED POPULATION) CAMP AREA:

EL FASHIR, NYALA, EL GENEINA


Verkehr · Transport
Hauptpiste
Main road
Nebenpiste
Secondary road
Hauptroute der Viehherden zum Absatzmarkt in Omdurman
Main route of cattle herds to Omdurman market
Buslinie
Bus line
Flugplatz
Airport
Krankenhäuser · Hospitals
Sanitätseinheit
Medical unit
Behelfskrankenhaus ohne Arzt
Small hospital (without doctors)
Krankenhaus mit Arzt
Main hospital (with doctors)
Wasserversorgung · Water supply
Brunnen
Well
Wasserpumpstation
Water pumping station
Märkte · Markets
lokal
local
regional
regional
überregional
supraregional
Schulen · Schools
Primarschule
Primary schools
Mittelschule
Intermediate schools
Höhere Schule
High secondary schools
0km
50
1:2,000,000
W. Howar
Teiga
Plateau
W. Mugarib
W. Um Ber
W. Magrur
Bir Furawiya
Musbat
Um Buru
Karnoi
Tine
Shigaib
Meidob Hills
Malha
Um Bayada
W. Abu Aradeib
Um Marahik
Berlio Hills
Kolbous
W. Abu Sunt
Kutum
Melit
Um Heglig
Abu Gau
Khureit
Abyad
W. Golo
El Fasher
Kebkabiya
Um Kedda
Burush
Birka Saira
W. Kaja
Tawila
El Hilla
El Geneina
Kereinik
W. Berri
W. Kaja
Abu Humeira
Um Gafaia
Dam Gami
CHAD
W. El Kuo
Sag En Na'am
Jebel Marra
W. Abu Hamra
Wada'a
Tulu
W. Azum
Zalingei
Menawashei
Gabir
Kas
W. Bulbul
Taweisha
Foro Burunga
Beringil
Nyala



CONFIRMED DAMAGED VILLAGE
(PARTIAL DESTRUCTION)

CONFIRMED DESTROYED VILLAGE
(COMPLETE DESTRUCTION)

IDP/ REFUGEE CAMPS

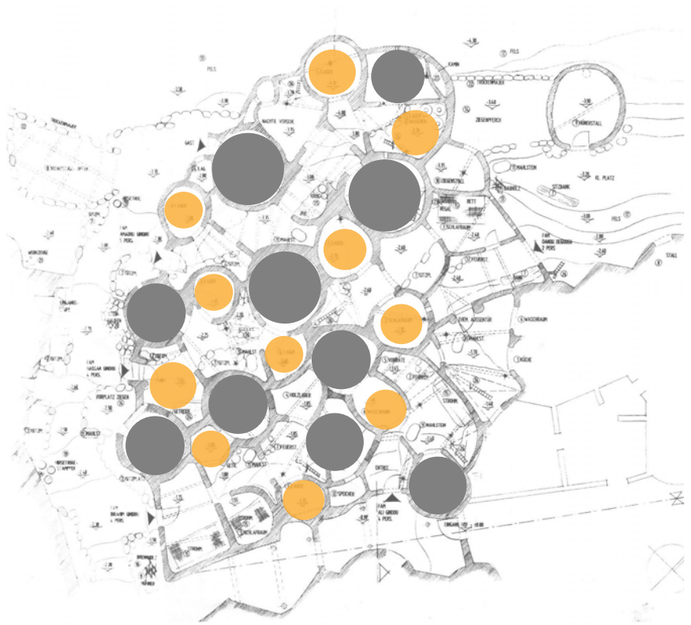
MAJOR ROADS

12,000 = AVERAGE CAMP POPULATION

SCALE: NTS

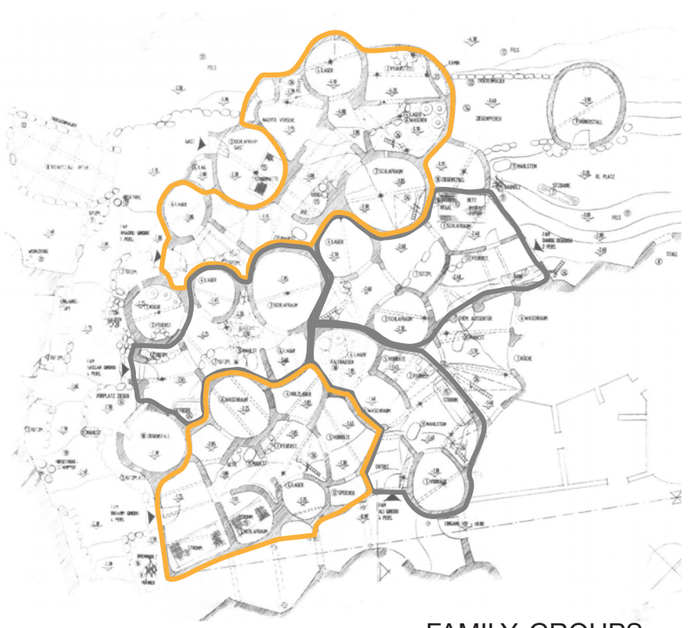
DOGON VILLAGE, MALI

STUDY OF DIFFERENT HOUSING STRATEGIES IN AREAS/ VILLAGES ALONG THE SAME LATITUDE AS DARFUR. FOCUS ON SPATIAL ARRANGEMENTS AND FAMILY AND COMMUNITY GROWTH AS TIME PROGRESSED.

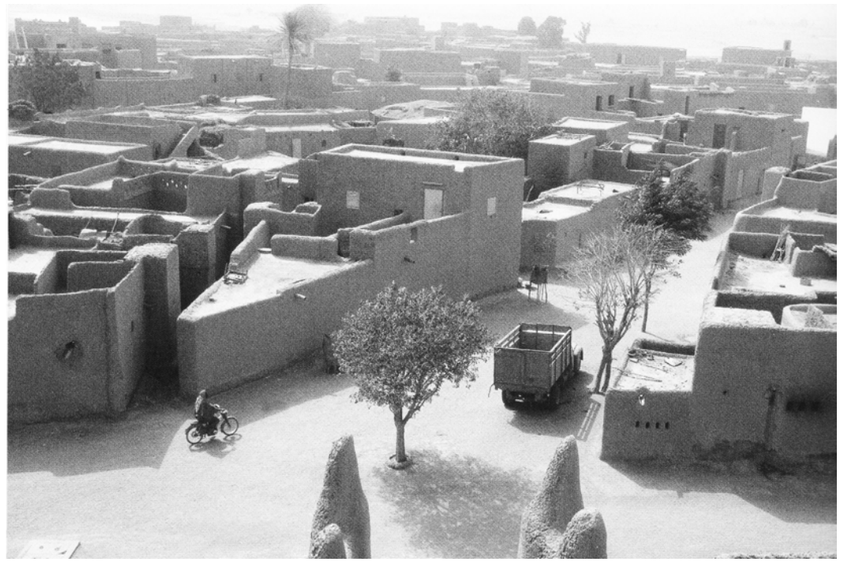


BUFFERS VS. SOCIAL SPACE

DIRECTIONALITY

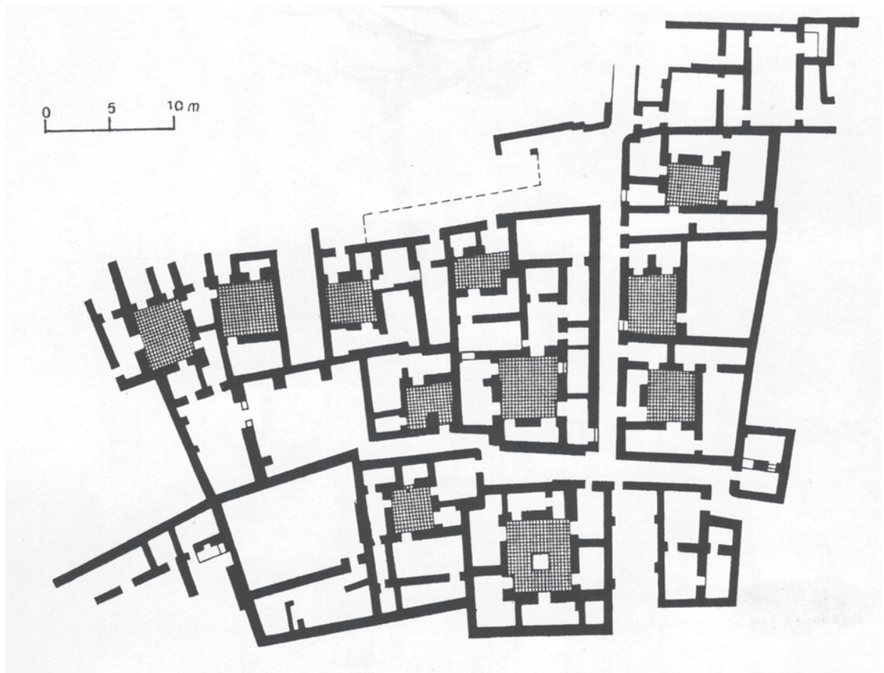


FAMILY GROUPS

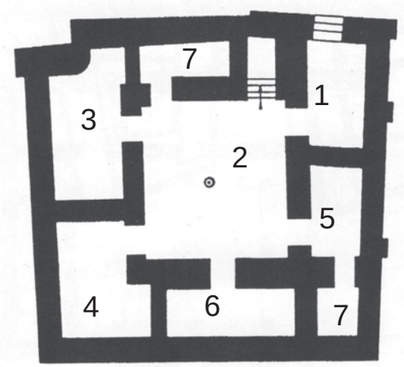


DJENNE, MALI

DJENNÉ IS FAMOUS FOR ITS SUDANESE-STYLE ARCHITECTURE. NEARLY ALL OF THE BUILDINGS IN THE TOWN, INCLUDING THE GREAT MOSQUE, ARE MADE FROM SUN-BAKED MUD BRICKS WHICH ARE COATED WITH MUD PLASTER. USE OF THE CLASSIC ARAB COURTYARD HOUSE AS A COOLING STRATEGY AND DESIGNATION OF SPACES AROUND THE SHARED COURT. ROOMS MAIN ROOMS ARE FLEXIBLE AND HAVE ACTIVITIES THAT ARE RELOCATED THROUGHOUT THE YEAR AS APPROPRIATE TO ACCOMMODATE THE CHANGES IN TEMPERATURE AND THE LOCATION OF THE SUN.



COURTYARD HOUSES



1. ENTRY
2. COURTYARD W/ FOUNTAIN
3. LIVING ROOM
4. KITCHEN
5. BATHROOM
6. GUEST
7. TOILET

SHATAYA VILLAGE IN SOUTH DARFUR

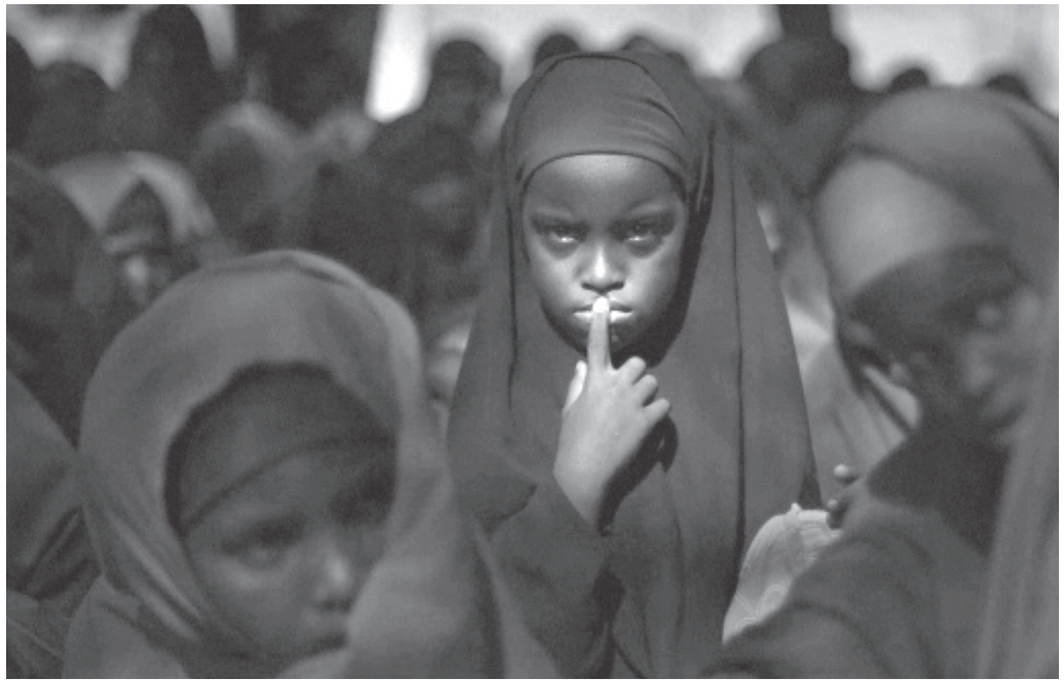
THE VILLAGE OF SHATAYA WAS UNFORTUNATELY DESTROYED BUT IT REFLECTED LAYOUT OF A TYPICAL VILLAGE IN DARFUR. THE RADIAL ARRANGEMENT OF HOUSING AROUND A CENTRAL COURT AREA USUALLY FOR LIVESTOCK STORAGE OF FARMING. STREETS WERE BASED ON A GRID LAYOUT WITH THE AXIS DIVINDING BETWEEN EACH COMPOUND CLUSTER.

VILLAGE COMPOSITION

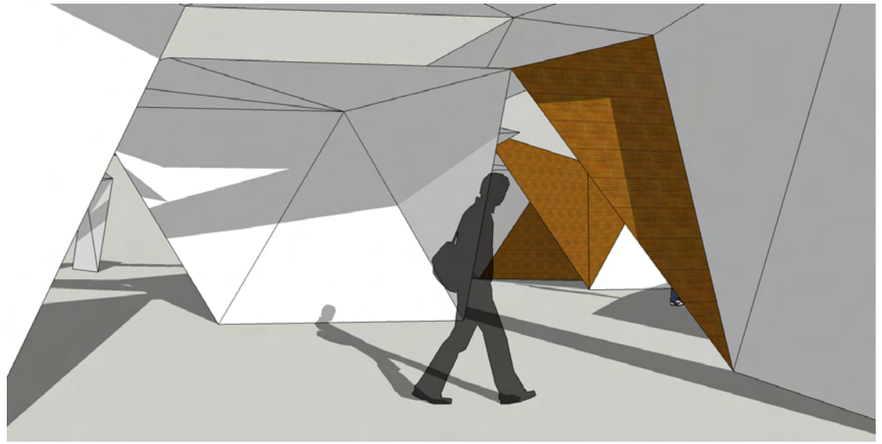
ROADS/ACCESS

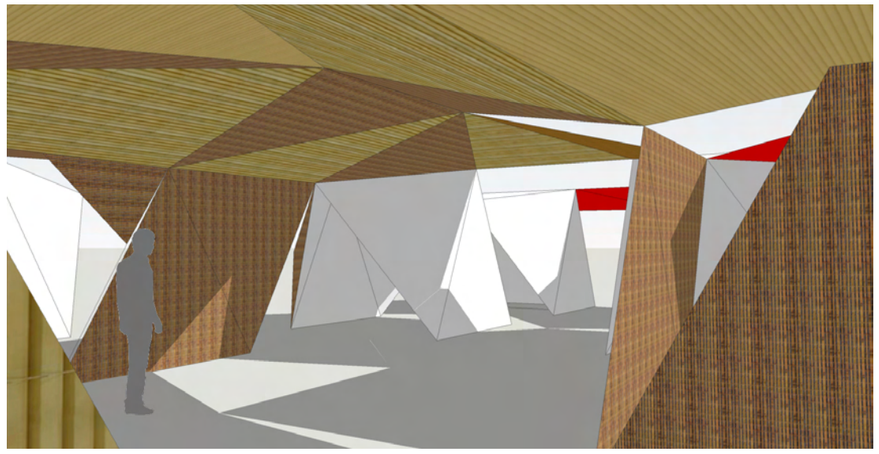
70% to 80% of all IDPs (internally displaced persons) are women and children. more than half of all IDPs live in Africa...

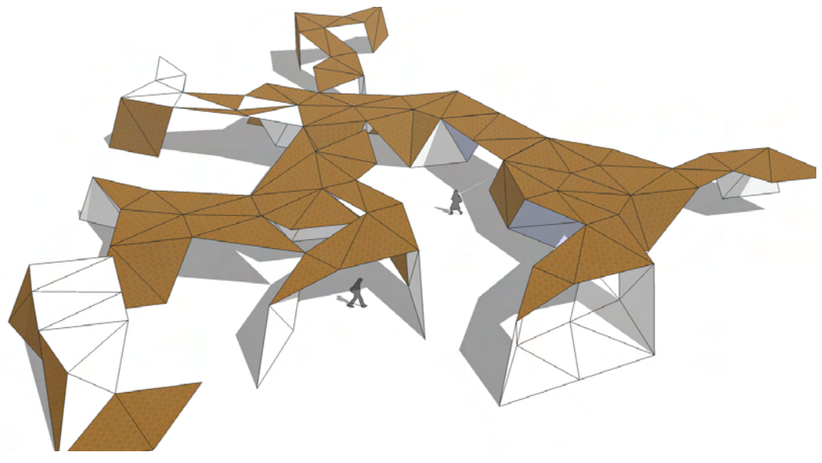
Internal Displacement Monitoring Centre, Norwegian Refugee Council

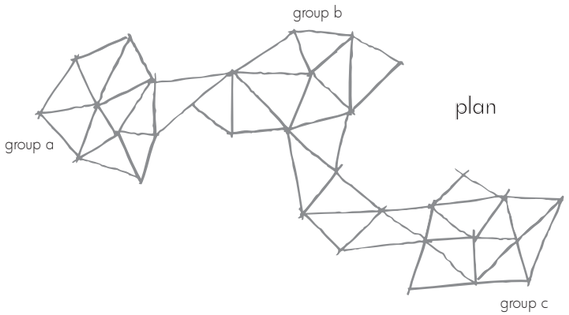


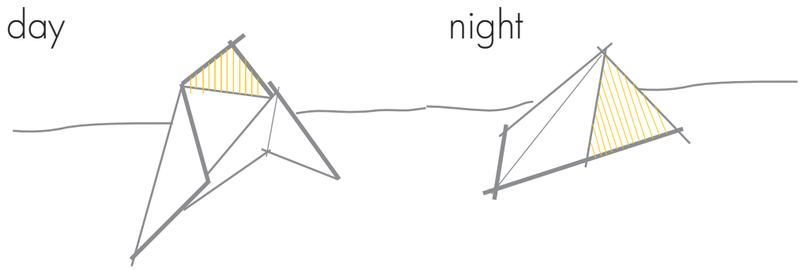
DESIGN PROCESS

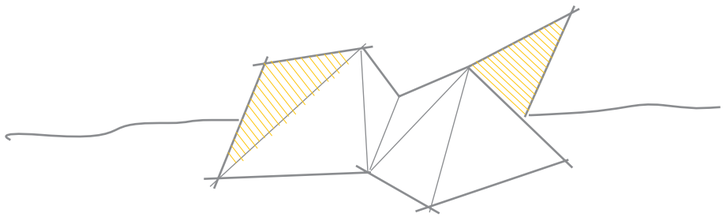


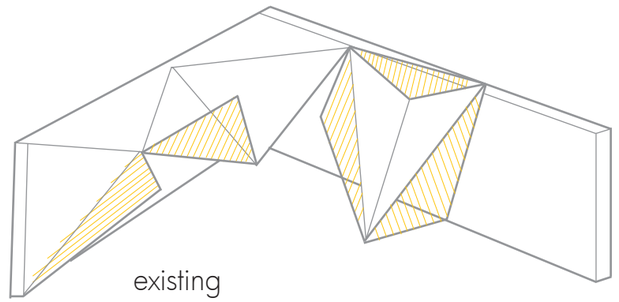


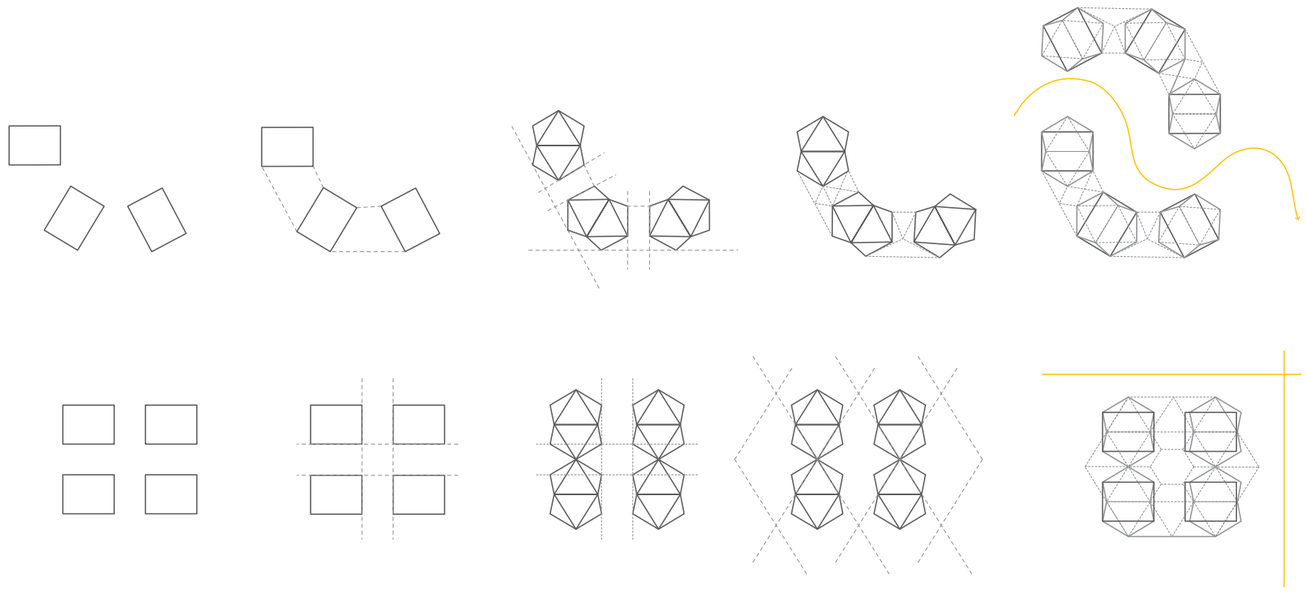



group b
group a
plan
group c

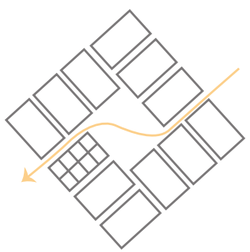

day
night


dry

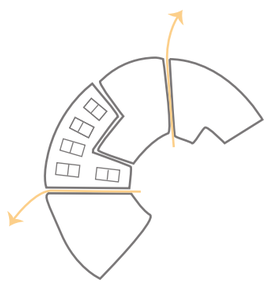

existing



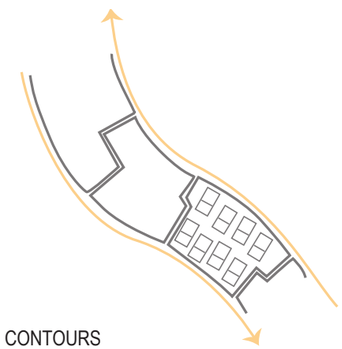
PLANNING STRATEGIES



PINWHEEL

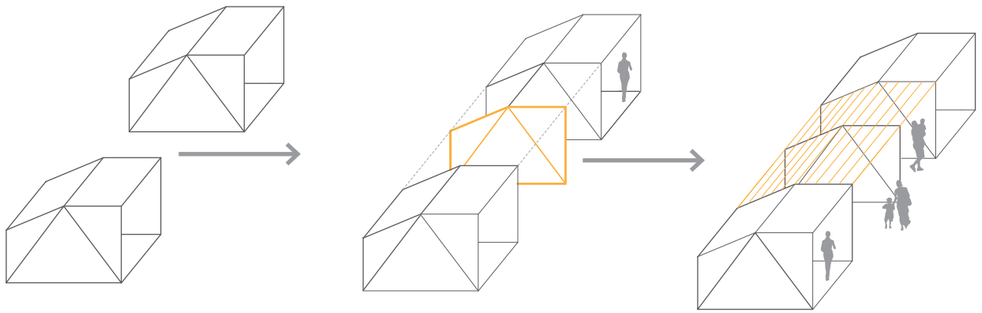


RADIAL



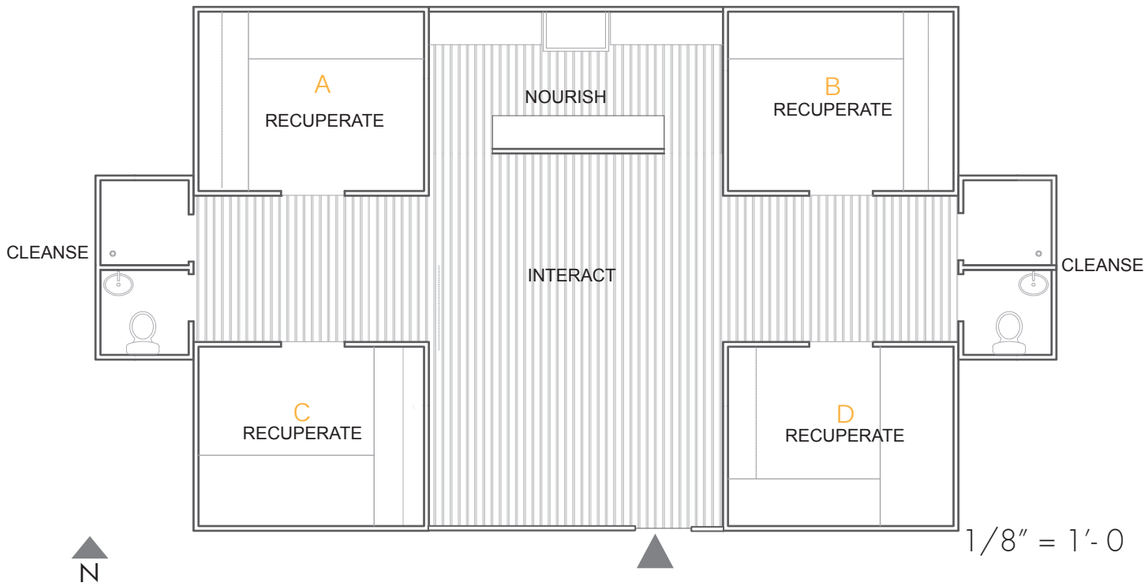
CONTOURS

SPATIAL FLEXIBILITY

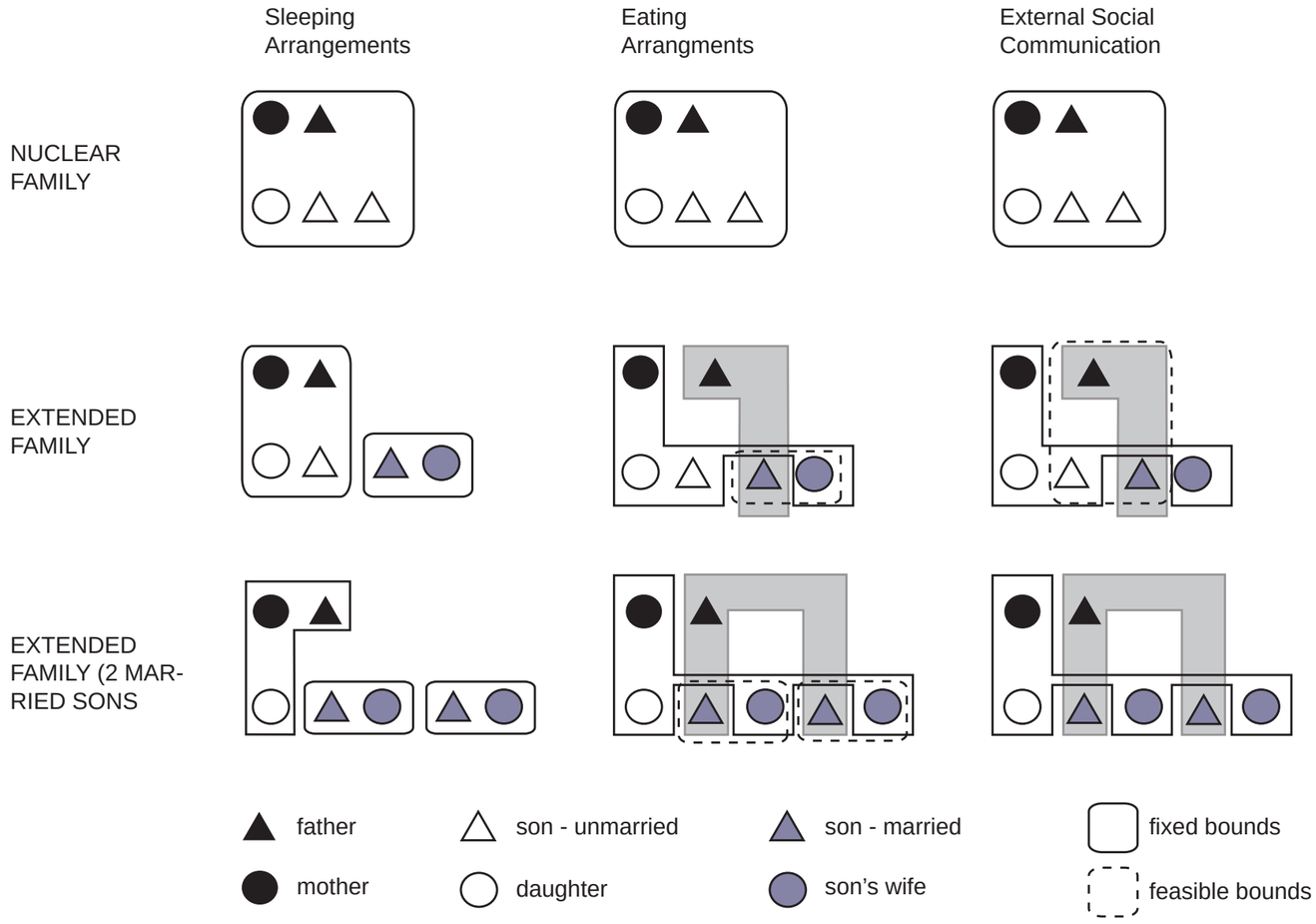


CONFIGURATION

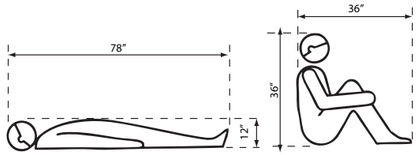
1280 FT²

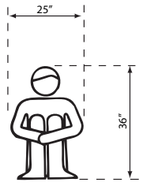


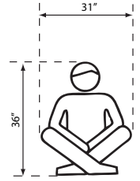
FAMILY KINSHIP RELATIONSHIPS
Typical Islamic Patrilinear Model

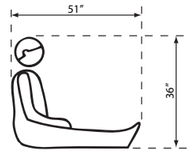


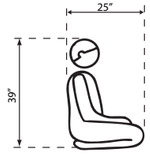
DARFUR POPULATION IS COMPOSED OF MORE THAN 75% MUSLIMS. IN ORDER TO RESPECT AND ADAPT DESIGN TO RELIGIOUS BACKGROUND, A STUDY OF SPATIAL ARRANGEMENTS AND FAMILY INTERACTION IN A TYPICAL ISLAMIC HOUSHOLD WAS CRUCIAL.

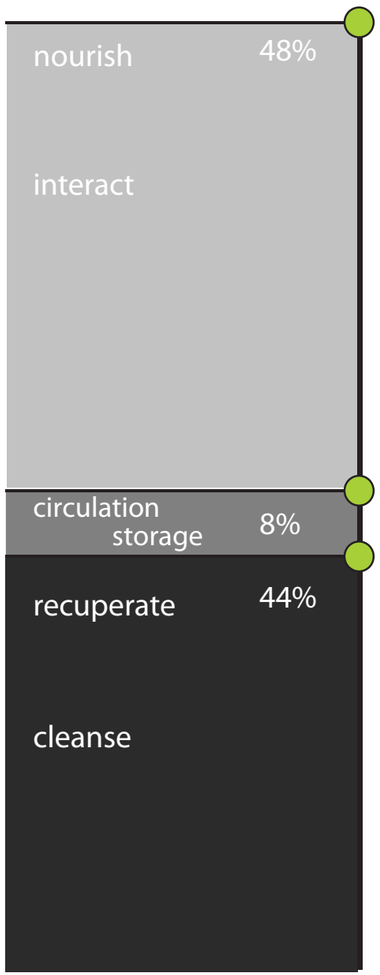










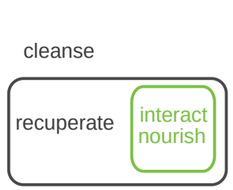


Public

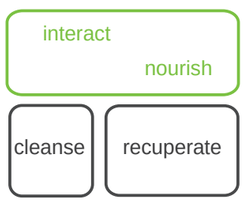
Transitional

Private

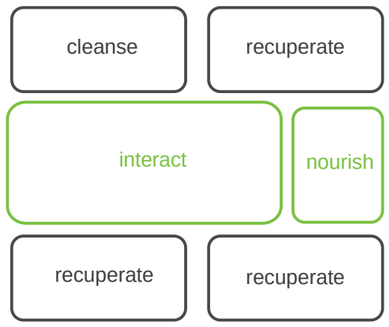
Space	# of Spaces	Privacy	Daylight	Adjacencies	Net Sq Ft	TL Sq Ft	Notes
Individual Pods							
1. Recuperate	1	H	H	2	100	100	all spaces are shared
2. Nourish	1	L	M	1, 4	80	50	
3. Interact	1	L	H	1, 4	80	50	
4. Cleanse	1	H	L	Detached	Fluctuates		
					Total Sq Ft	200	
Intermediate Pods							
1. Recuperate	1	H	H	2	100	150	
2. Nourish	1	L	M	2, 3	100	100	spaces 2 & 3 are share
3. Interact	1	L	H	2, 3	100	100	flexible spaces
4. Cleanse	1	H	L	Detached	50	50	
					Total Sq Ft	400	
Group/Family Pods							
1. Recuperate	2	H	H	2	100	200	
2. Store	1	H	L	1, 3, 4, 5	50	50	spaces 2,3,& 4 are sha
3. Nourish	1	L	M	2, 5	100	100	flexible spaces
4. Interact	2	L	H	1, 2, 3, 4	100	200	
5. Cleanse	1	H	L	4	75	75	attached/detached
					Total Sq ft	625	



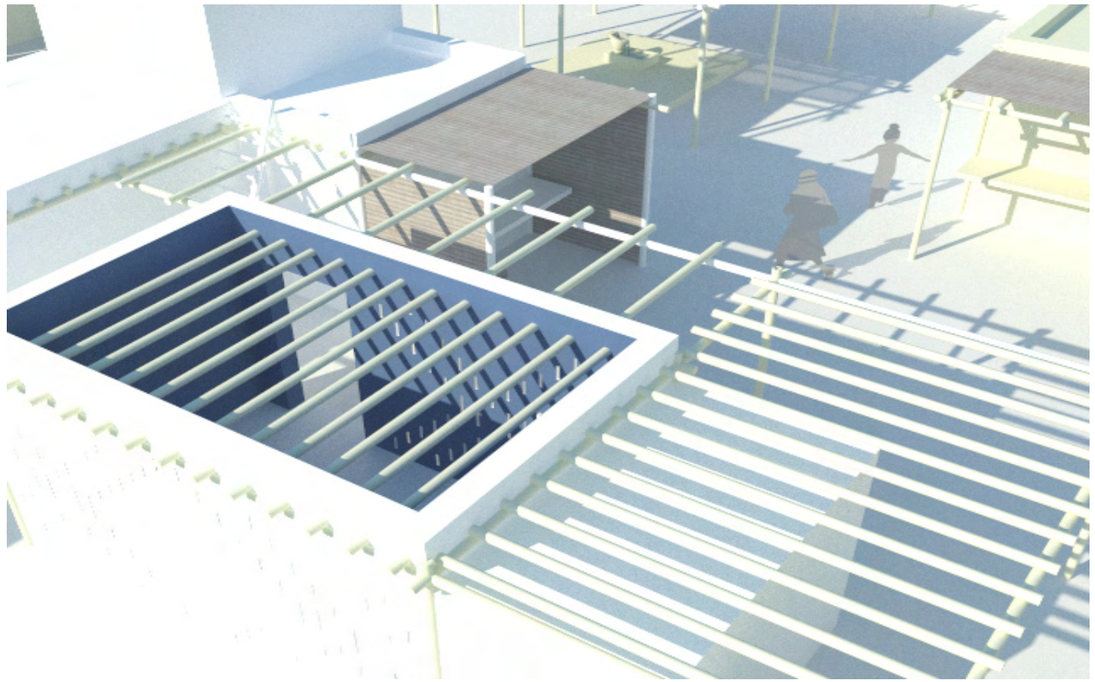
INDIVIDUAL MODULE



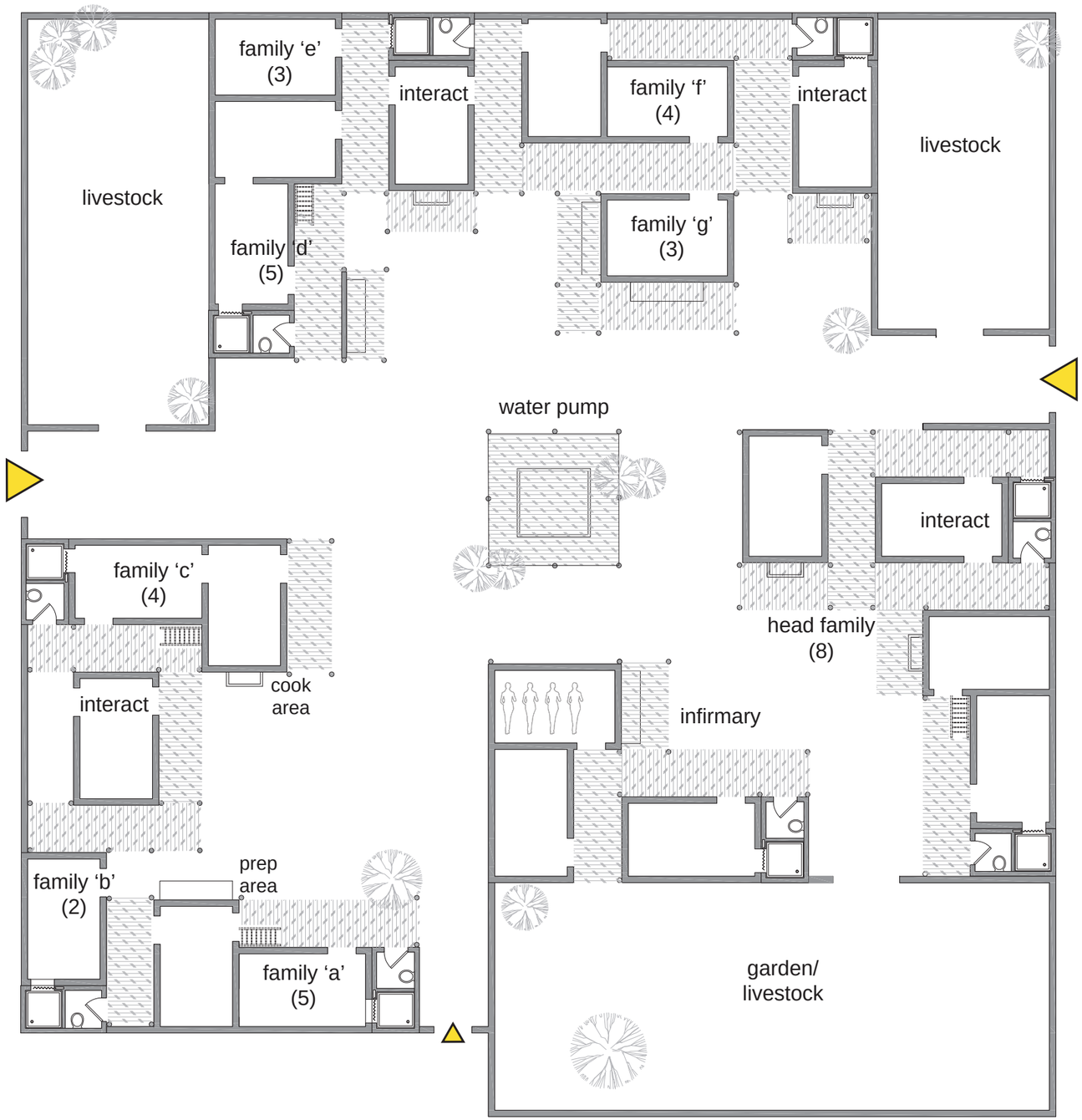
INTERMIDIATE /FAMILY MODULE



GROUP/ COMMUNITY MODULE



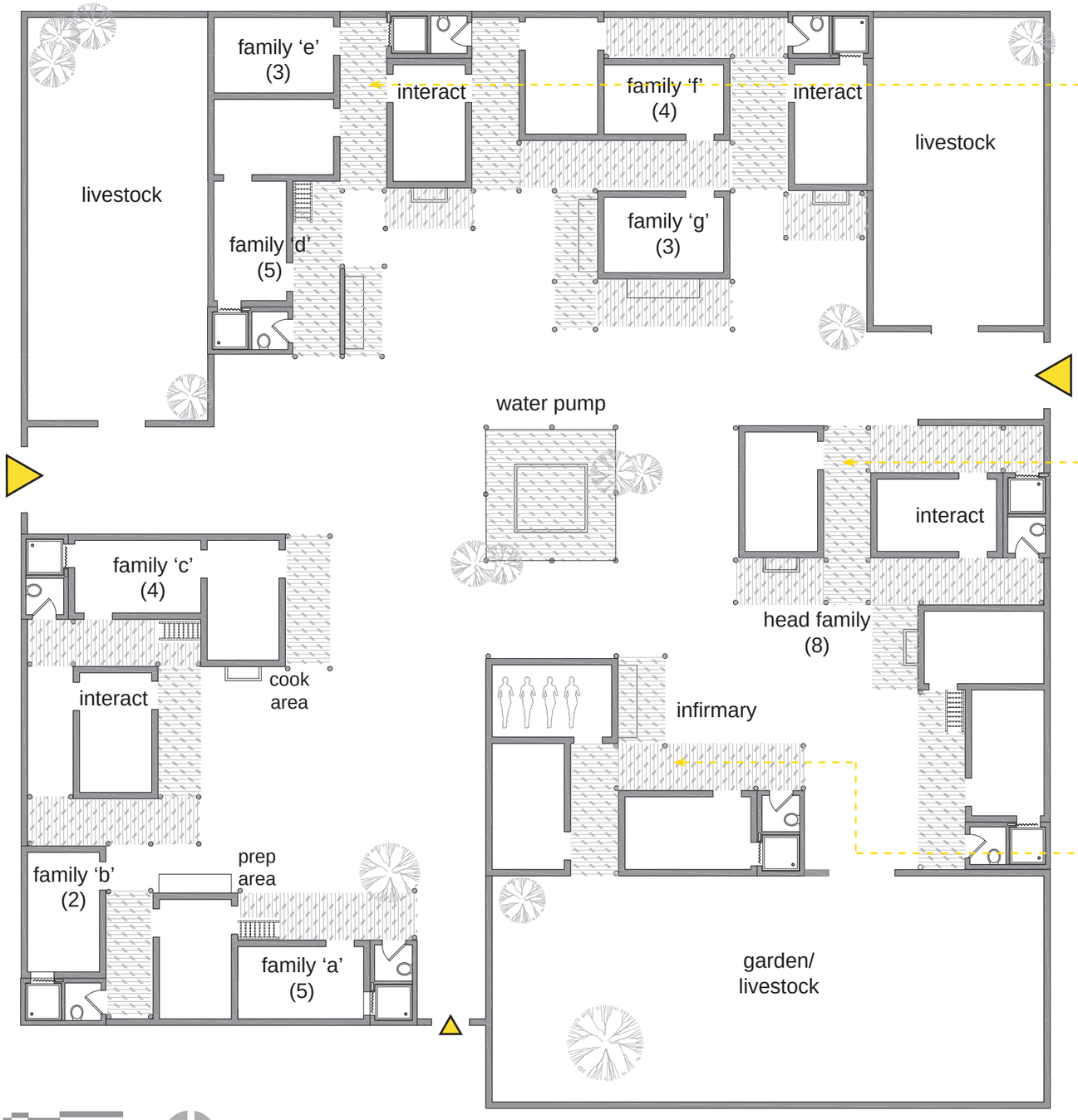
FINAL DESIGN

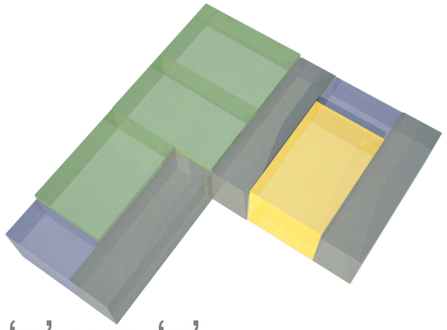


1/16” = 1’-0”

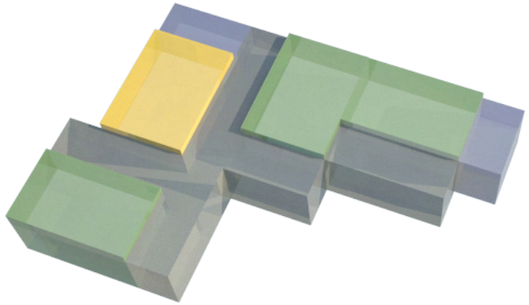
LOCATION: EL FASHER, NORTH DARFUR PROVINCE
CLIENT: DISPLACED POPULATIONS IN DARFUR
MATERIALS:
WOVEN GRASS MATS (SHADING)
BAMBOO (FRAMES)
RUBBER TIRES (BINDING)
EARTH BRICKS (STRUCTURE)
POPULATION: 30-50 PER COMMUNITY CLUSTER
AREA (PER MODULE): 140 SQ.FT
AREA (EACH COMMUNITY CLUSTER) : APPROX. 13,000 SQ.FT

PLAN

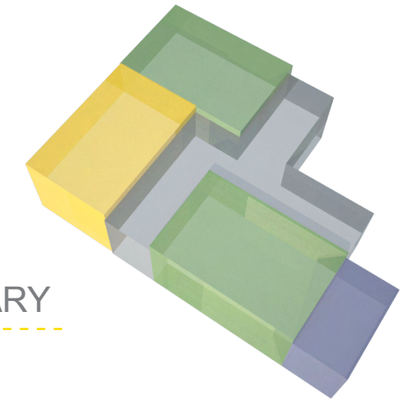




FAMILY ‘D’ AND ‘E’



HEAD FAMILY



INFIRMARY

CLEANSE

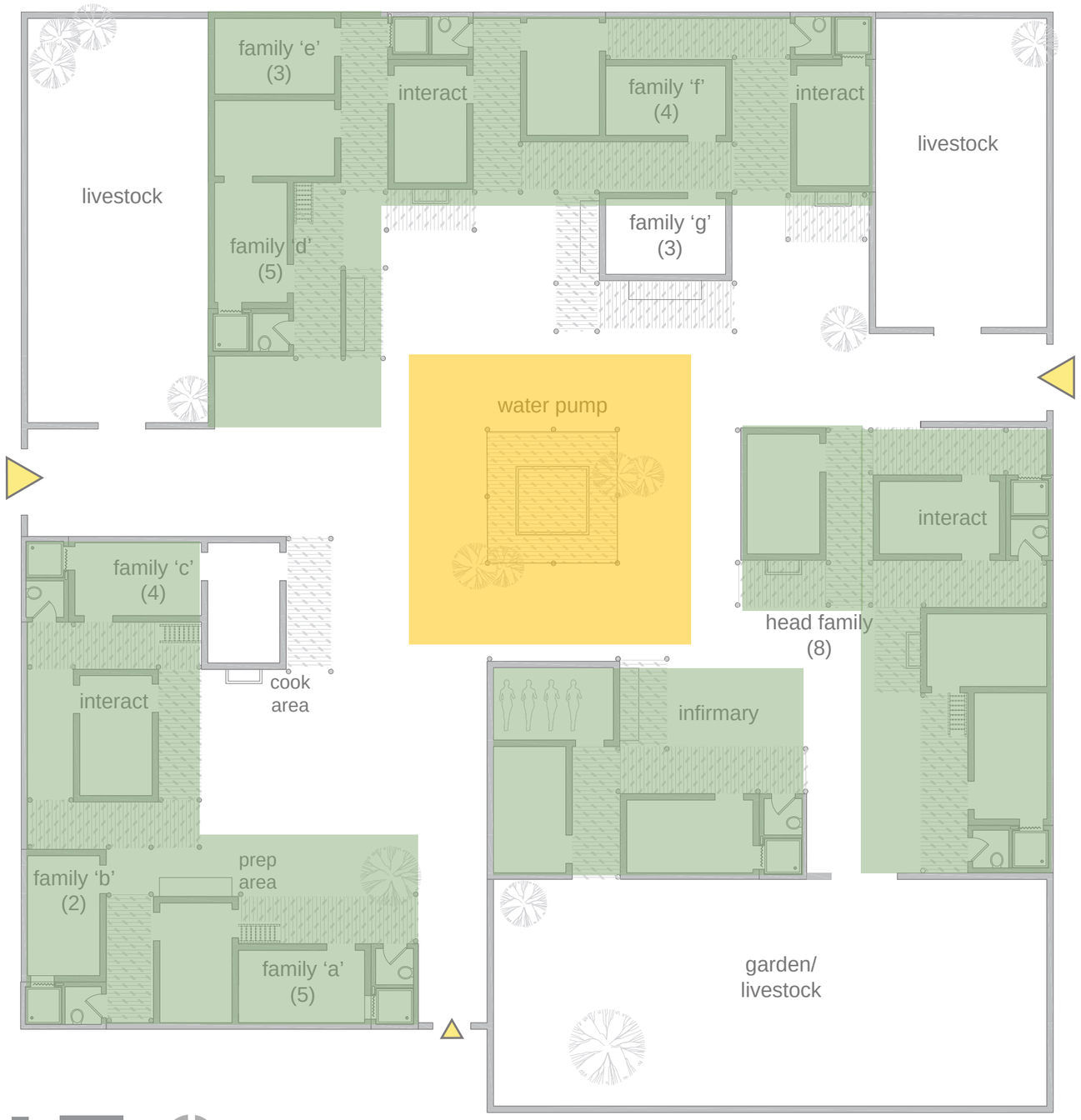
RECUPERATE

TRANSITIONAL/
SERVICE

INTERACT

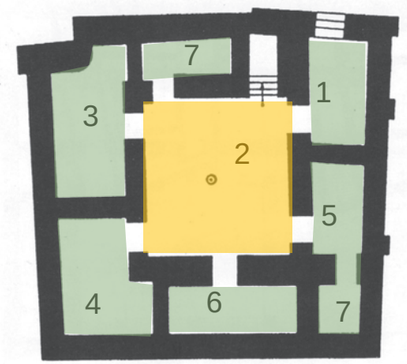
1/16” = 1’-0”

CLUSTER LAYOUT



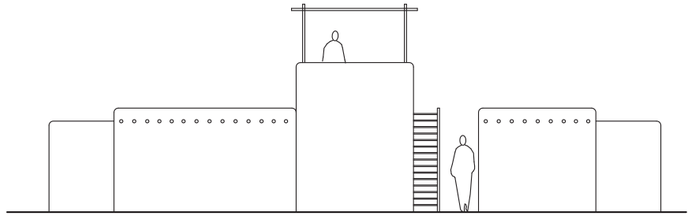
1/16” = 1’-0”

COURTYARD HOUSES



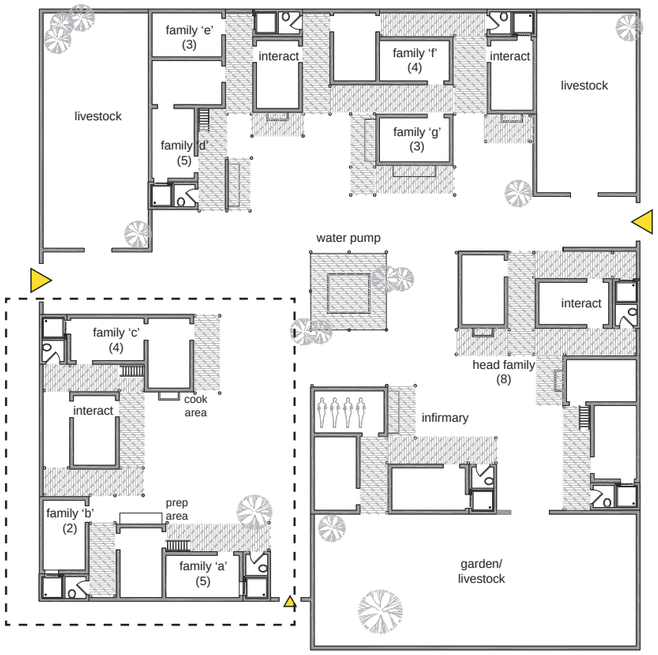
1. ENTRY
2. COURTYARD W/ FOUNTAIN
3. LIVING ROOM
4. KITCHEN
5. BATHROOM
6. GUEST
7. TOILET

DESIGN PARTI BASED ON THE COURTYARD HOUSE SYSTEM WITH A PUBLIC SPACE IN THE CENTER AND FAMILY MODULES OR “ROOMS” RADIATING AROUND THIS SPACE.



HIERARCHY/ STATUS

CLUSTER LAYOUT

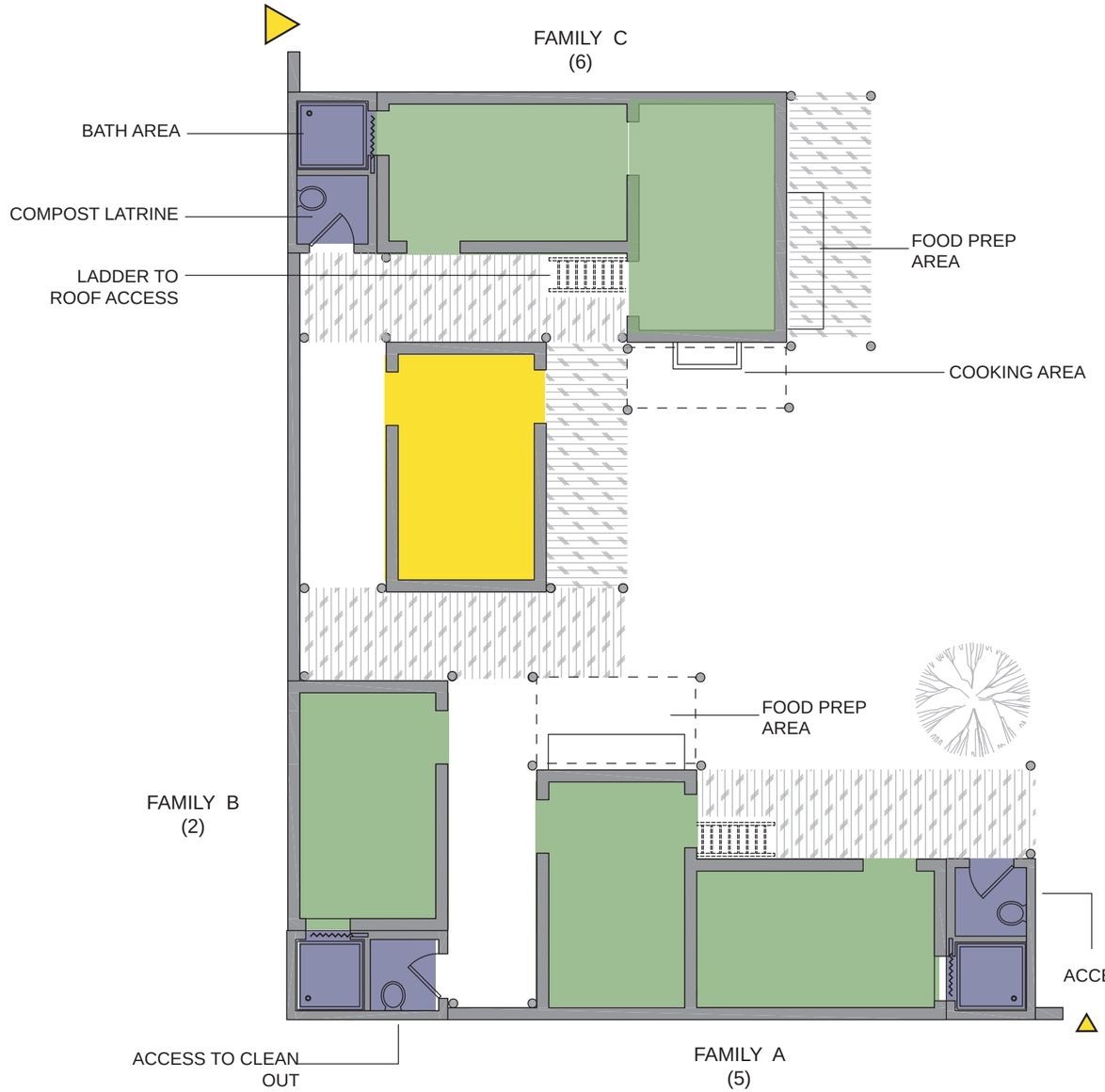


CLEANSE

RECUPERATE

TRANSITIONAL/
SERVICE

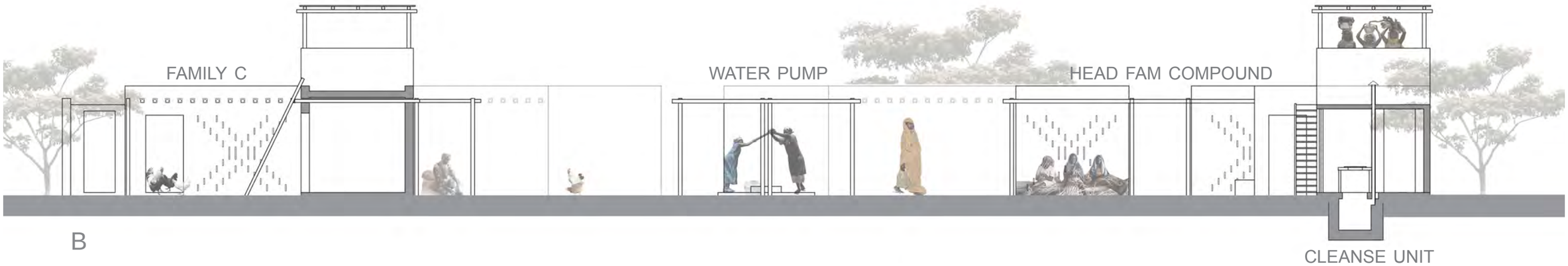
INTERACT



1/8" = 1'-0"

CLUSTER LAYOUT

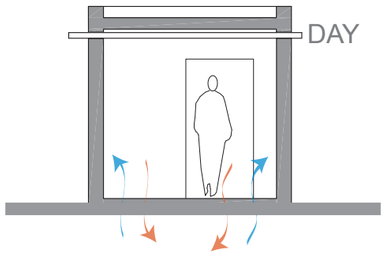
A

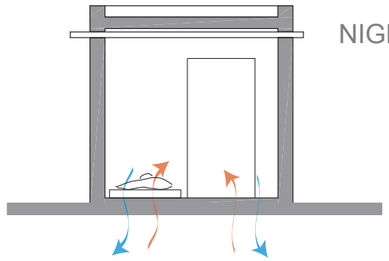


B

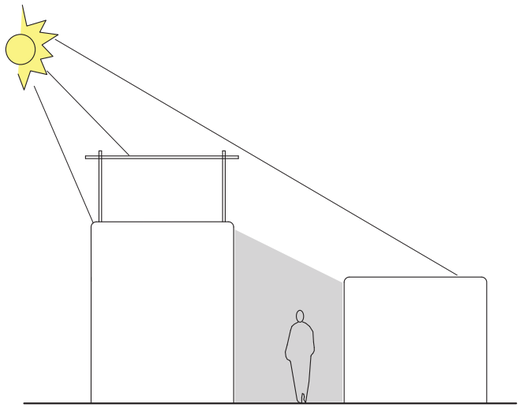
1/8” = 1’-0”

SITE SECTIONS

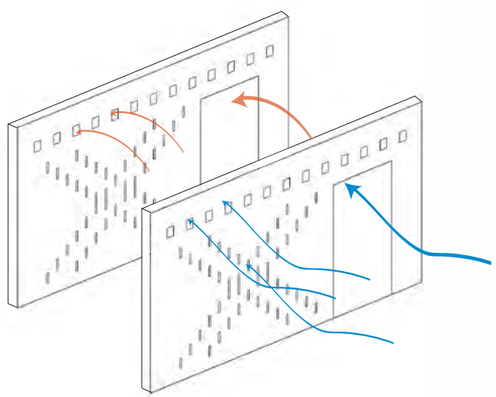


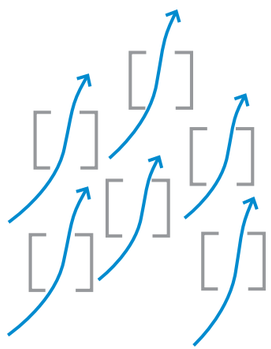


THERMAL INSULATION

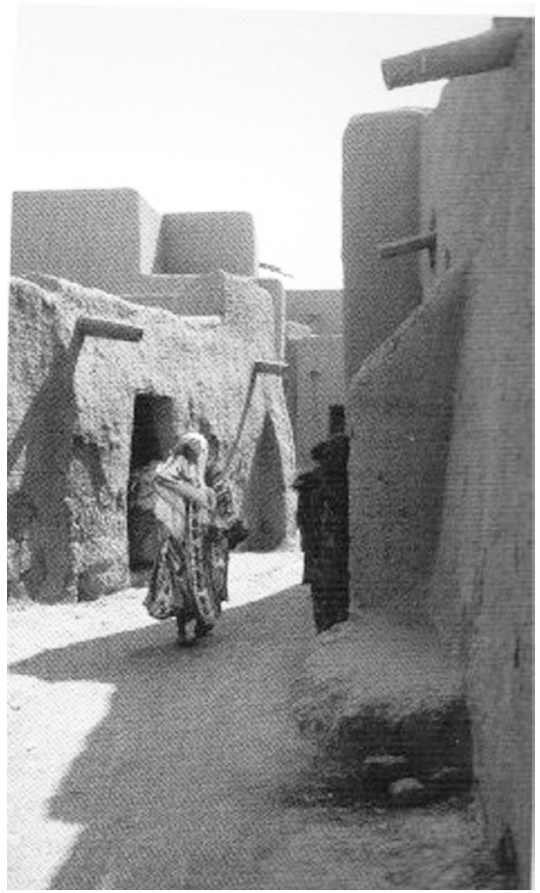


SOLAR SHADING

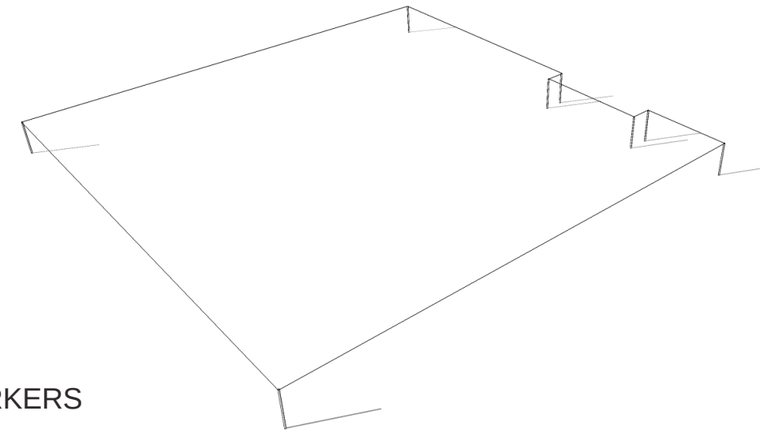




VENTILATION

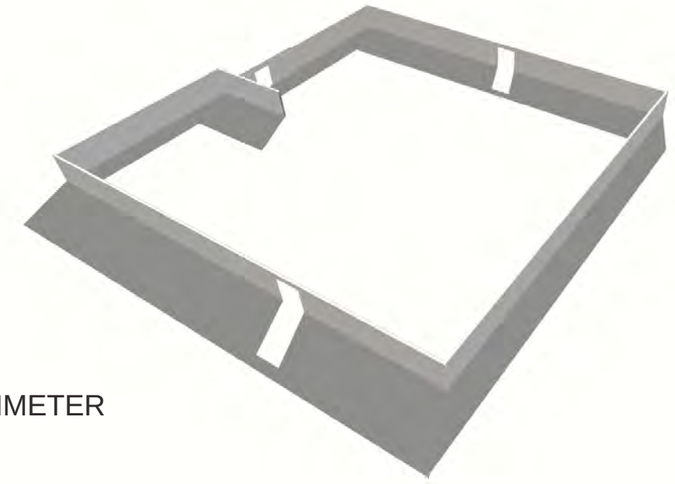


1



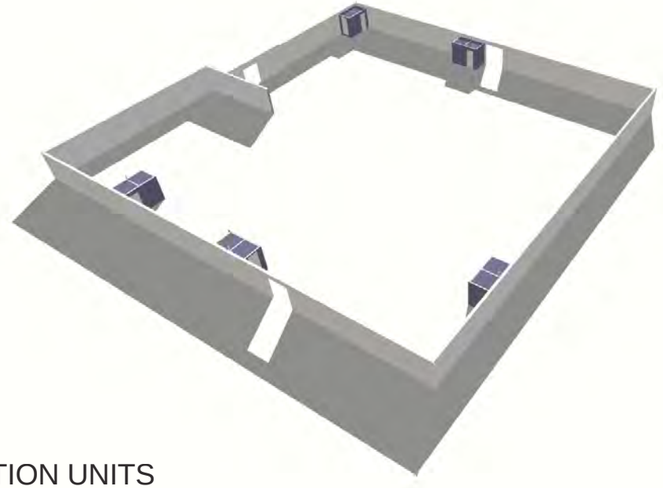
SITE MARKERS

2



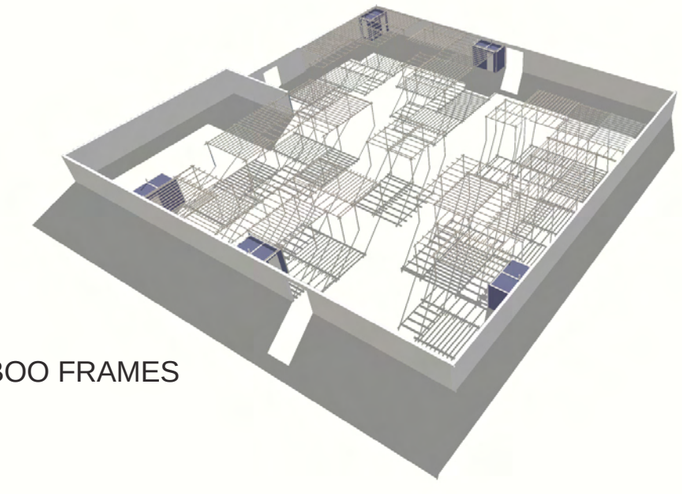
WALL PERIMETER

3



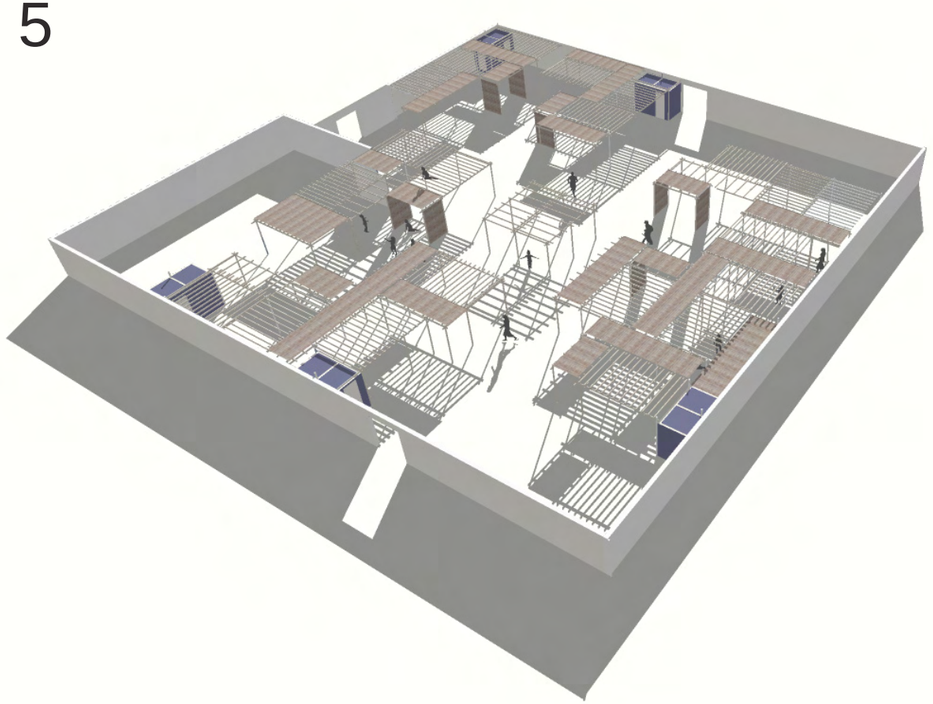
SANITATION UNITS

4



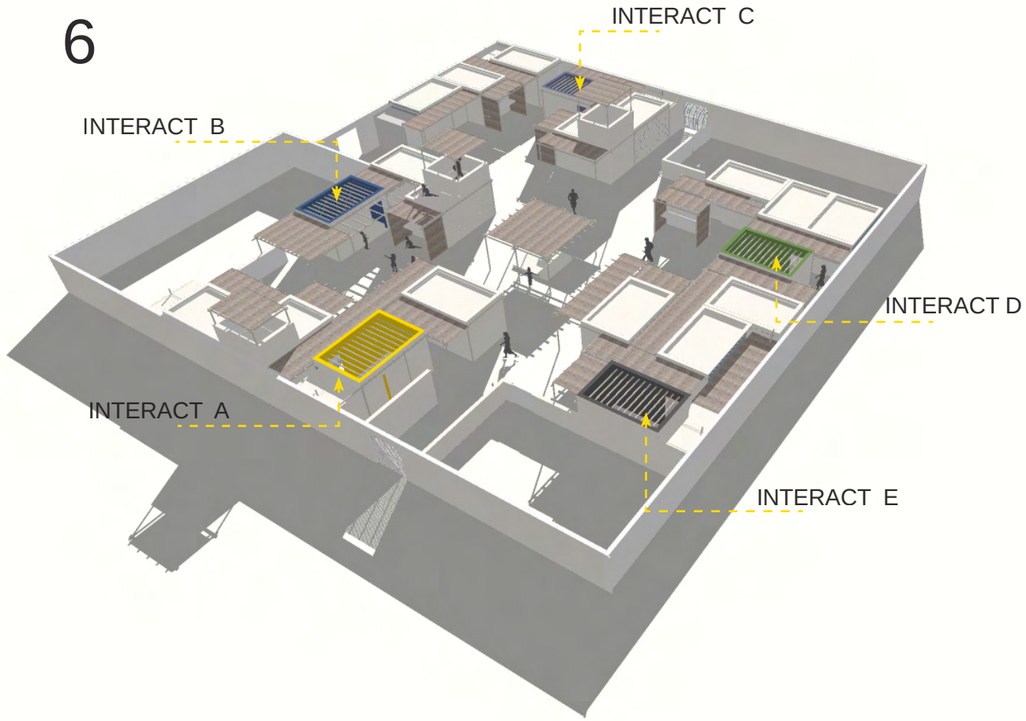
BAMBOO FRAMES

5

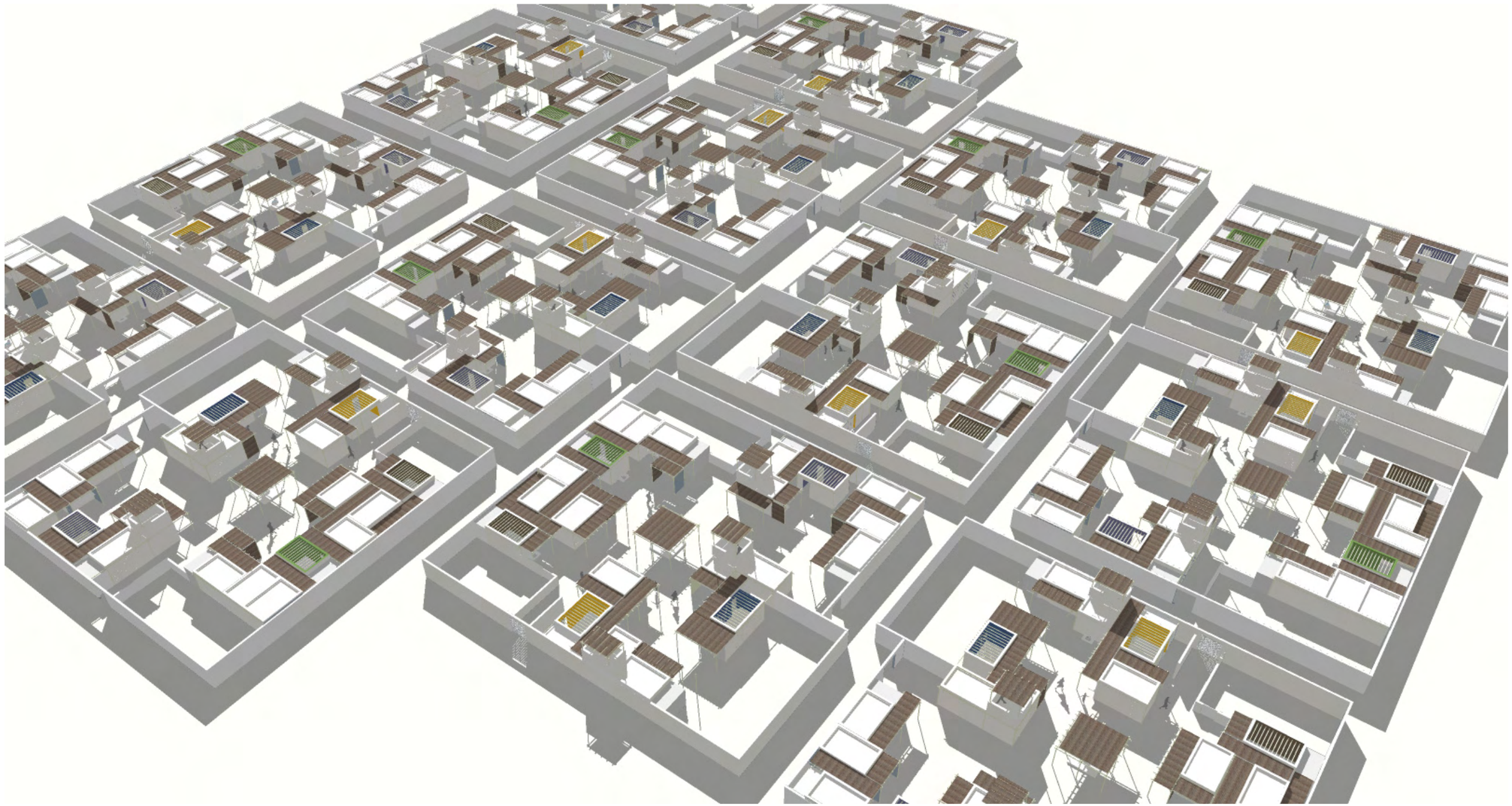


MATS AND SHADING

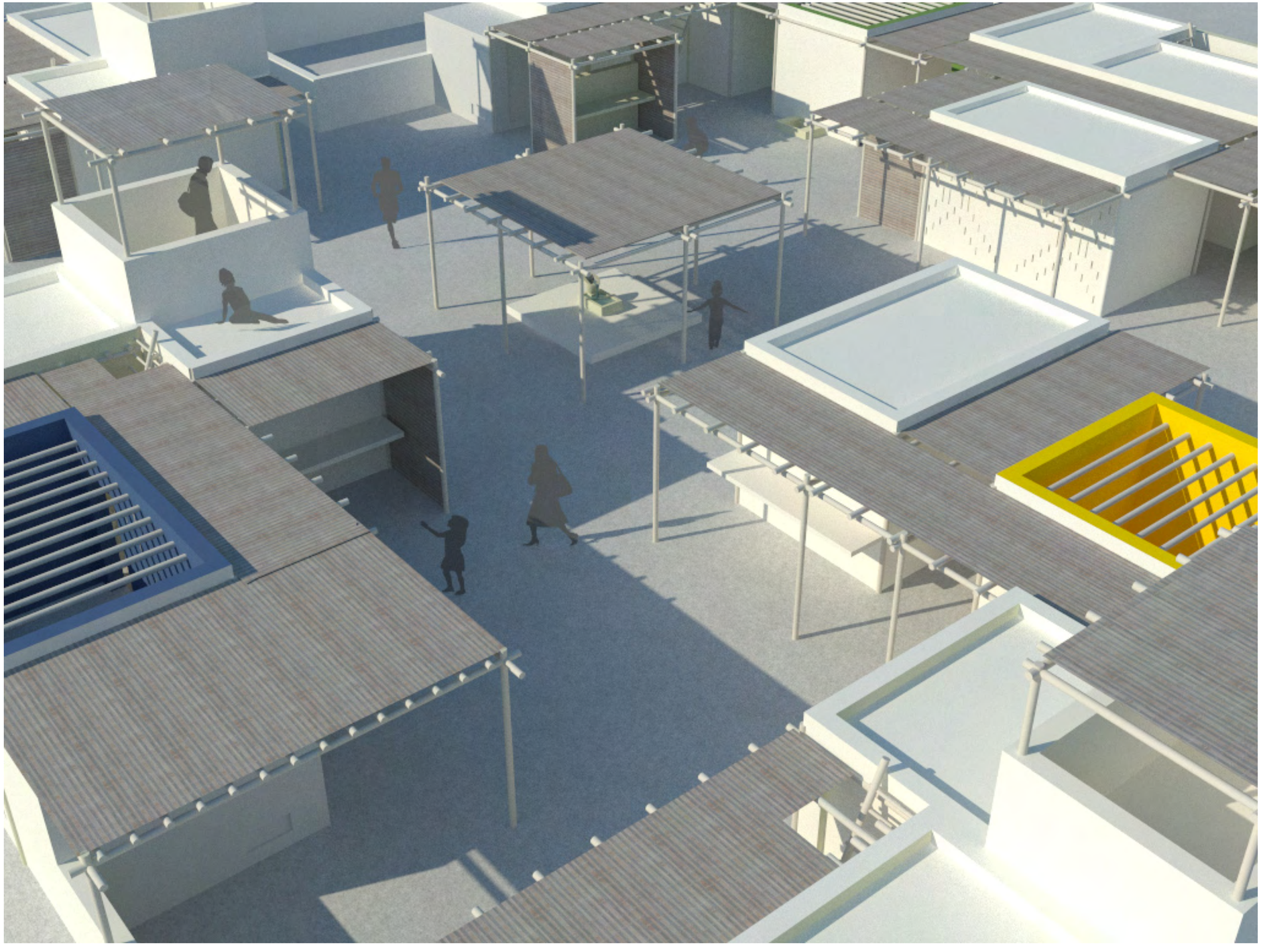
6



BRICK CONSTRUCTION

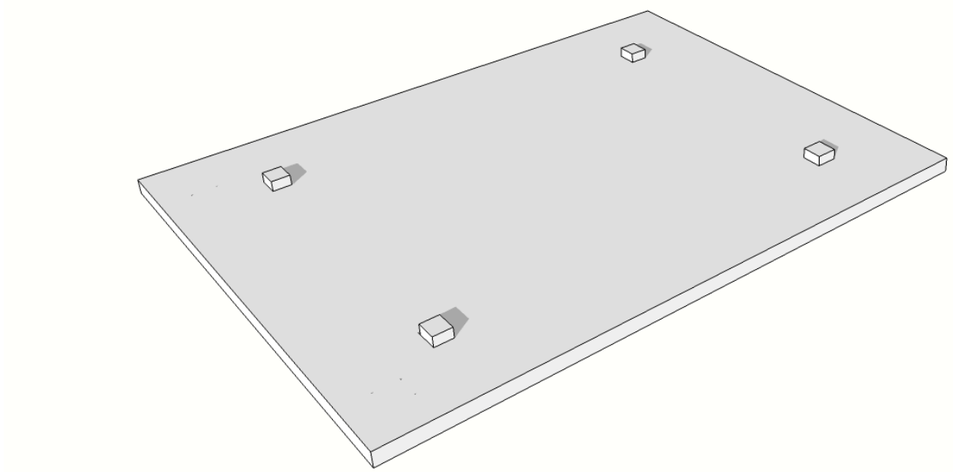


COMPLETED VILLAGE LAYOUT

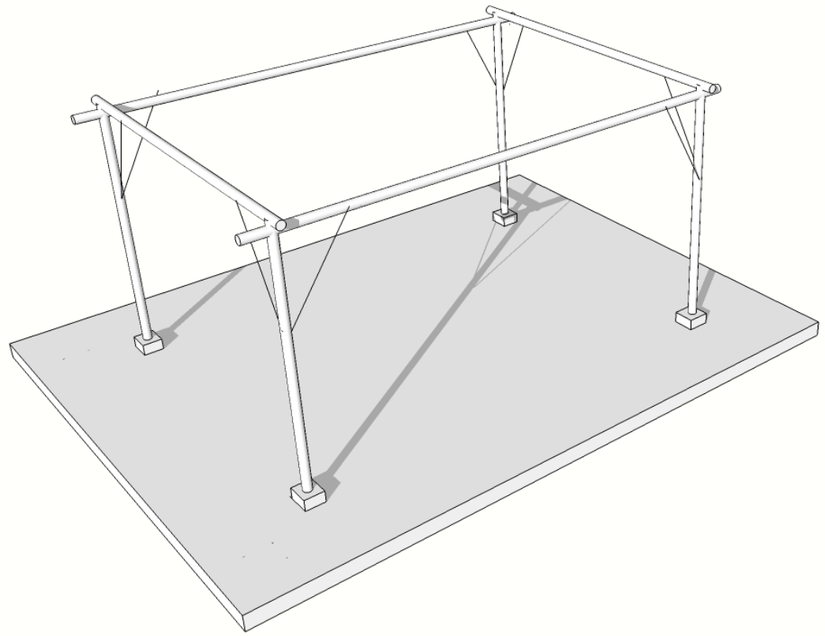


AERIAL VIEW OF
COMMUNITY COMPOUND

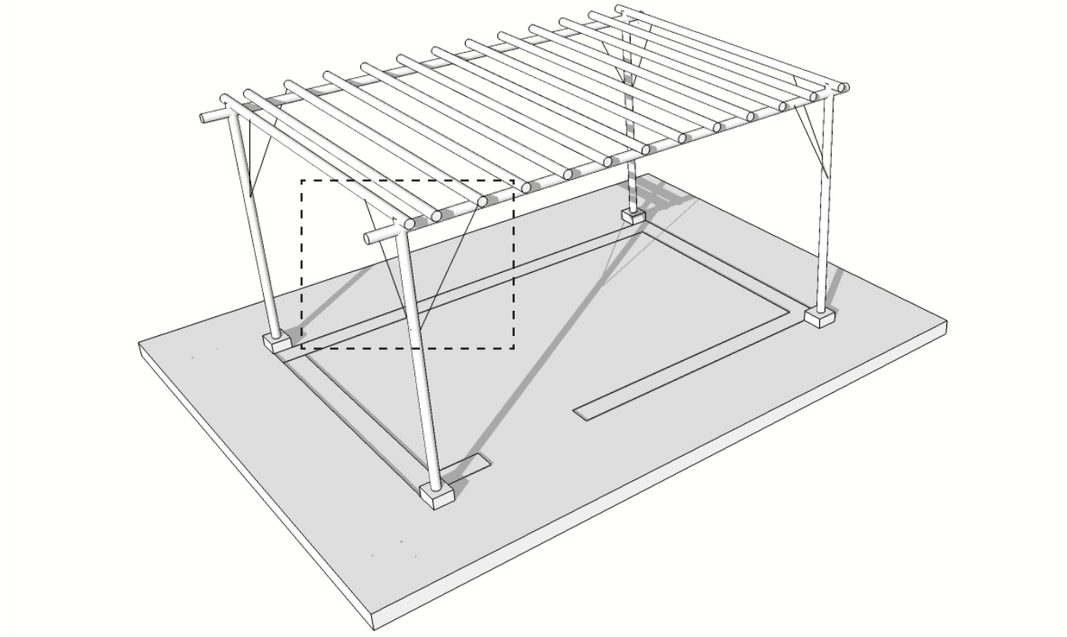
1 SITE MARKERS



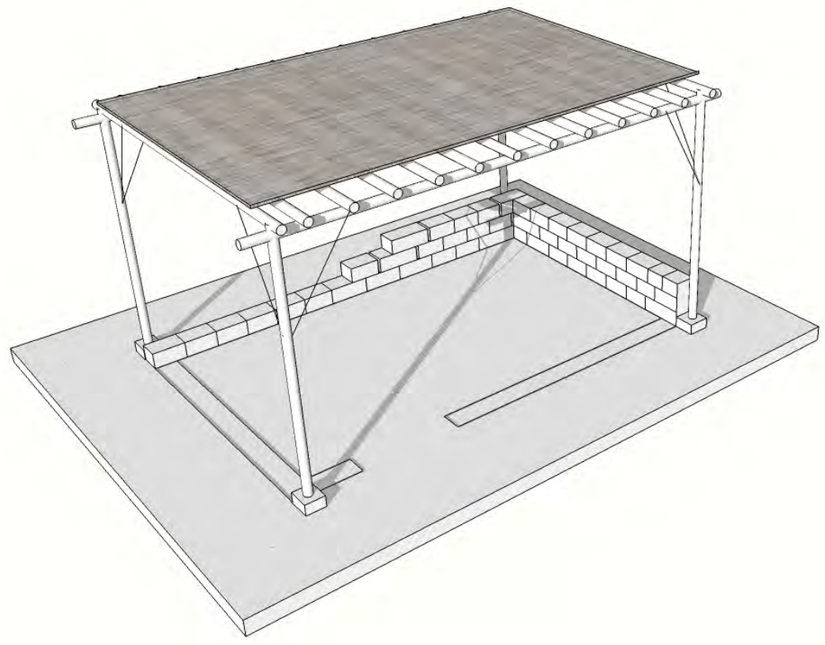
2 BAMBOO FRAME

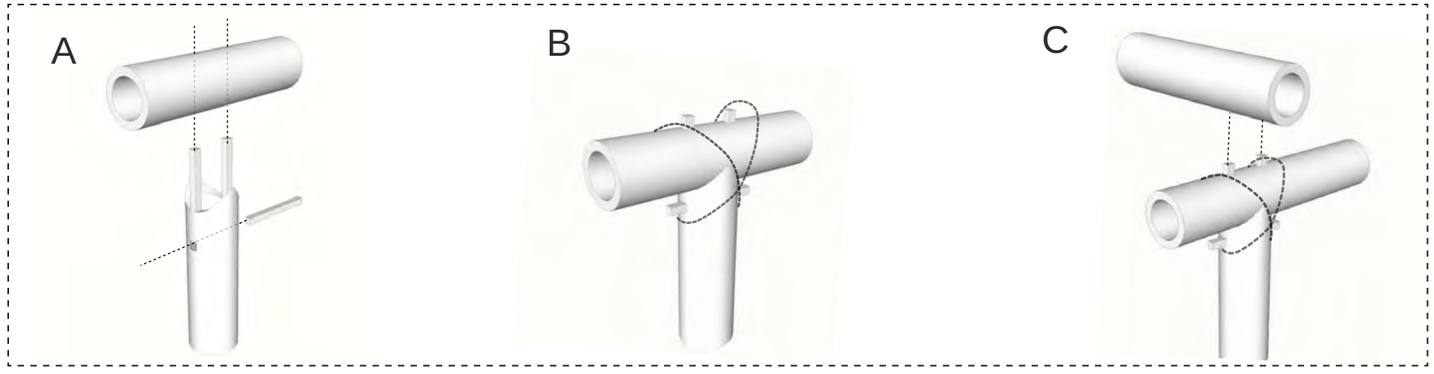


2 BAMBOO FRAME AND RAFTERS



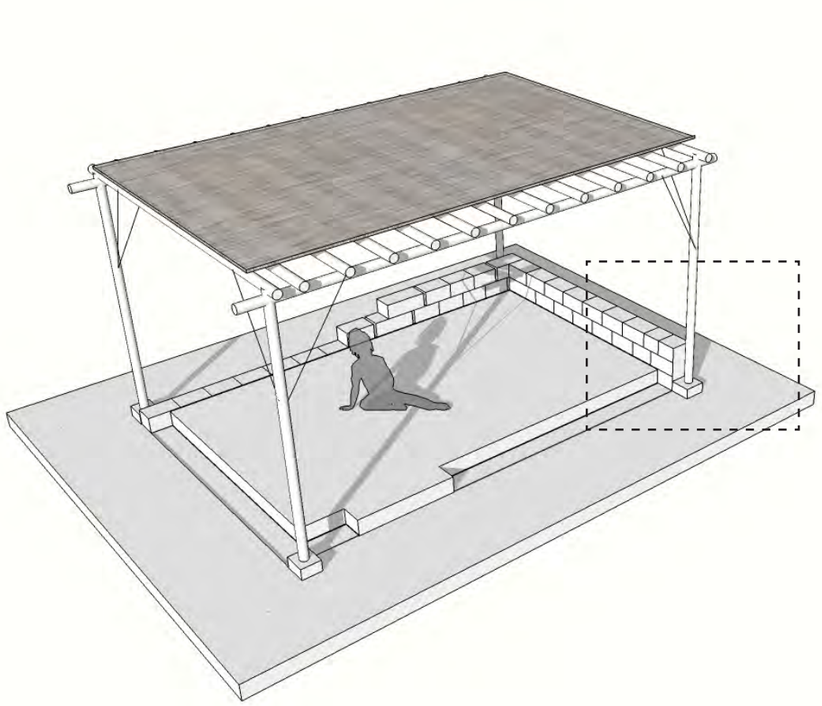
3 WOVEN MATS + BRICK LAYING



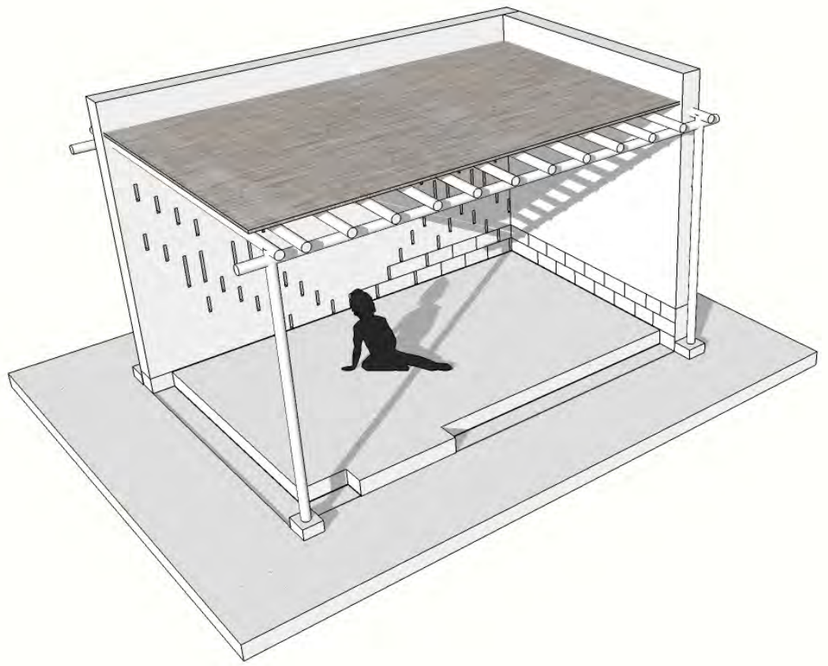


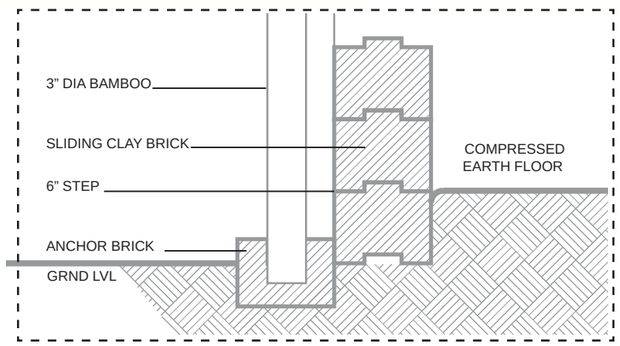
MODULE COMPONENTS

4 WOVEN MATS + BRICK LAYING + EARTH BASE



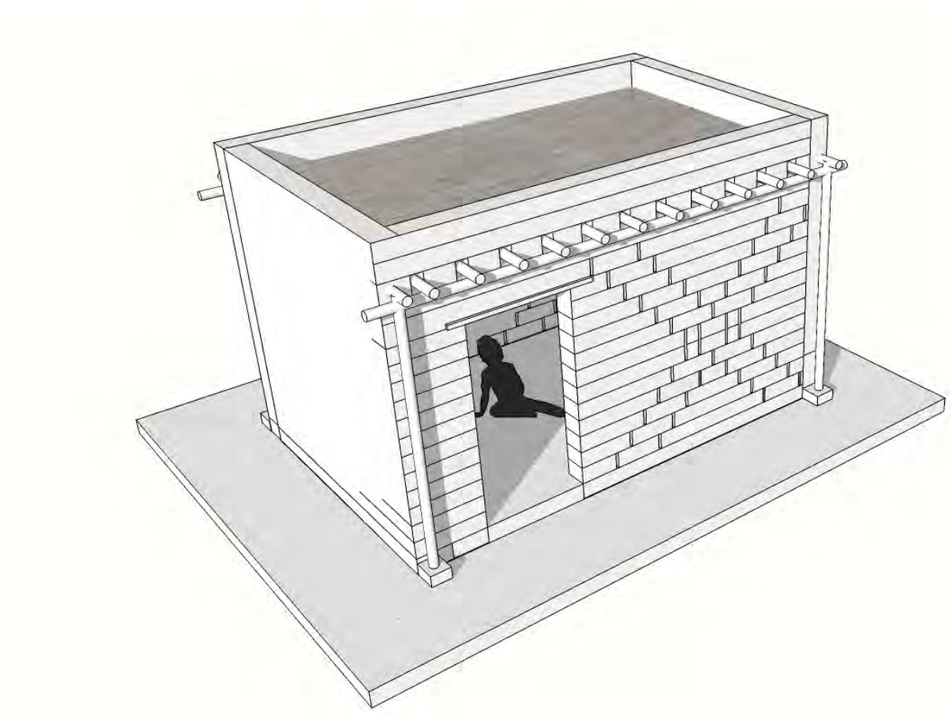
5 WOVEN MATS + BRICK LAYING + EARTH BASE + 1ST STRUCTURAL WALL



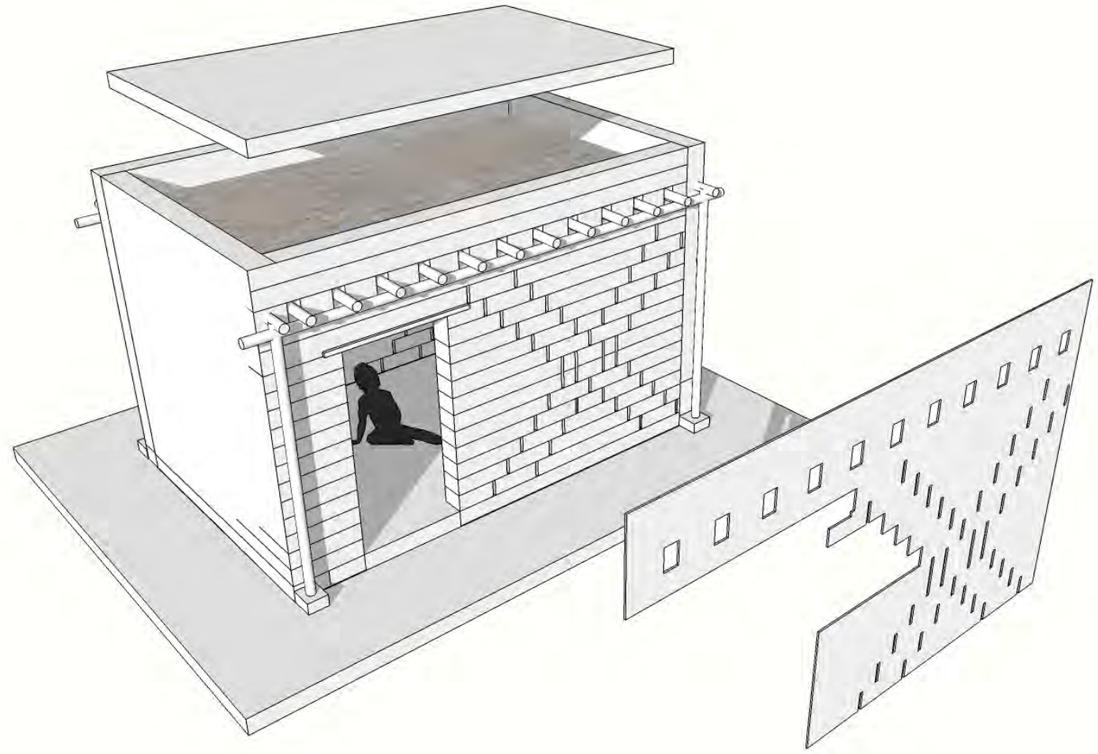


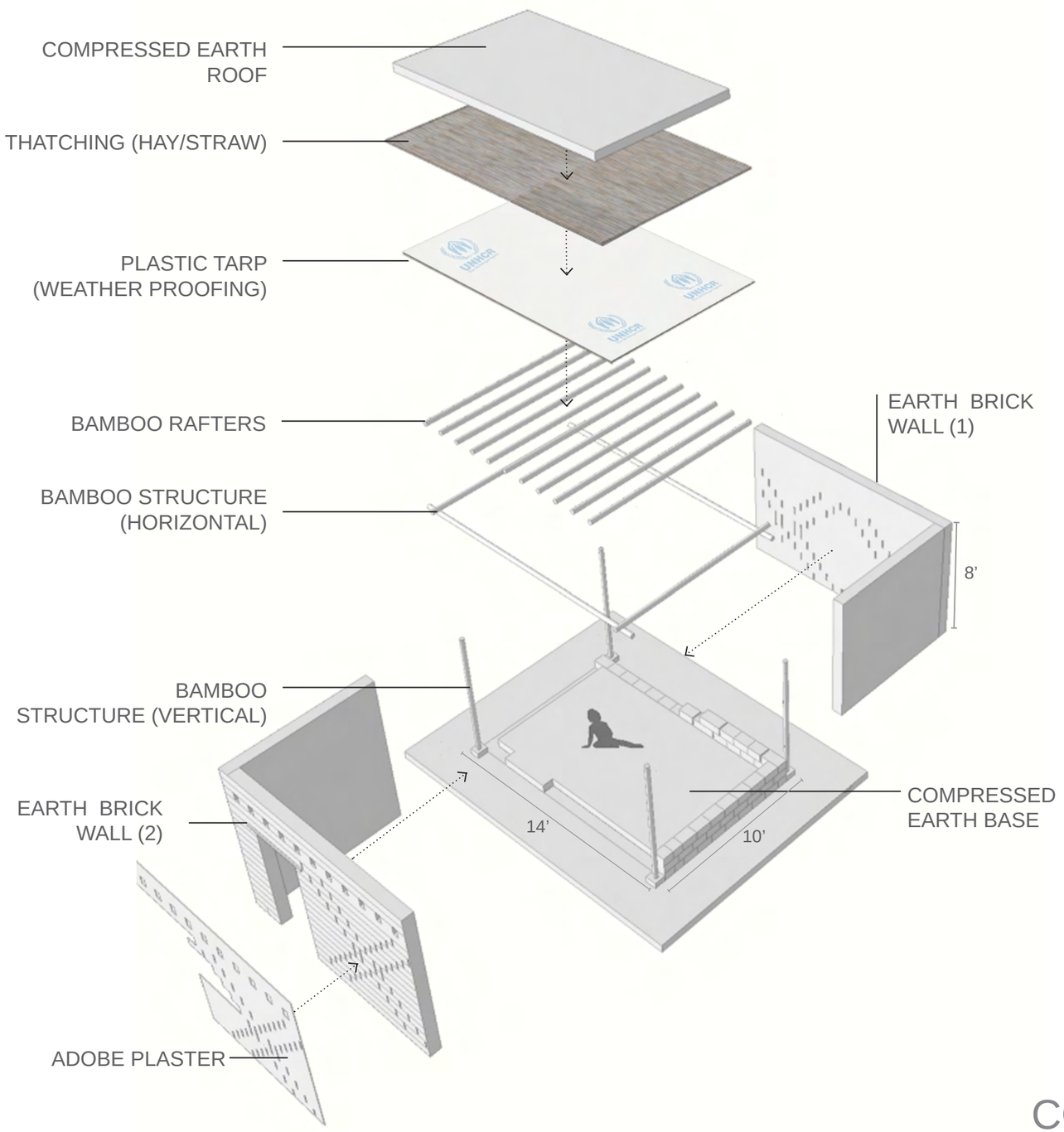
FOUNDATION DETAIL

6 WOVEN MATS + EARTH BASE + 1ST STRUCTURAL WALL + 2ND STRUCTURAL WALL = BASIC MODULE

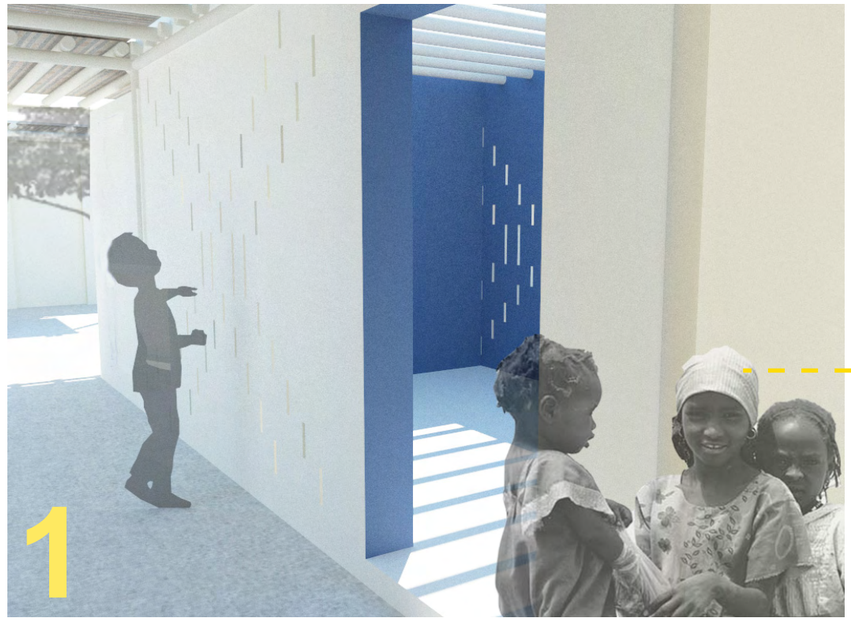


7 BASIC MODULE + THATCHED ROOF + COMPACT EARTH ROOF = COMPLETE MODULE
ADDITIONAL: PLASTER

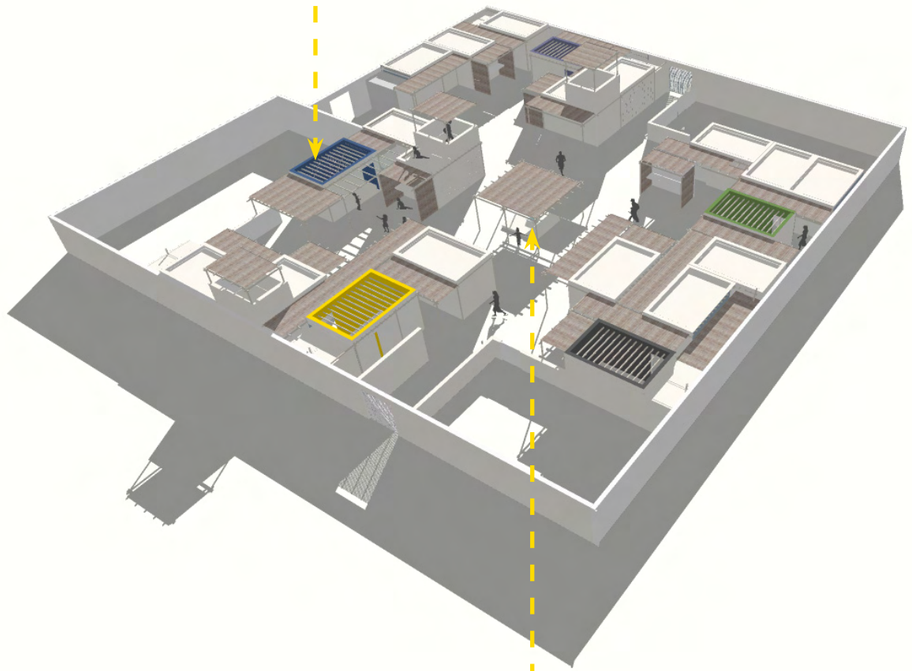




COMPONENTS ASSEMBLY



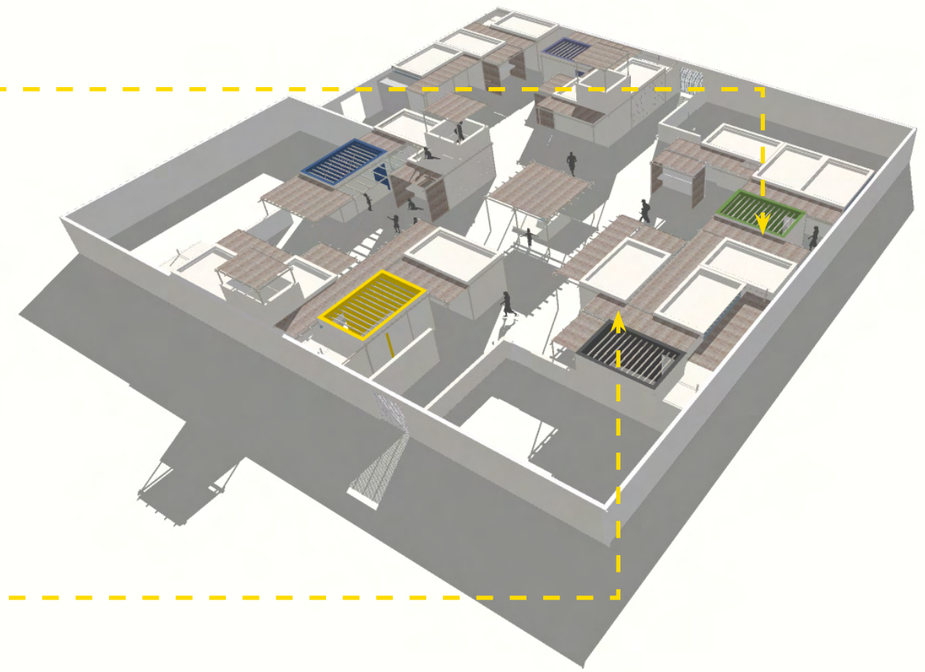
INFIRMARY/ NURSE QUARTERS

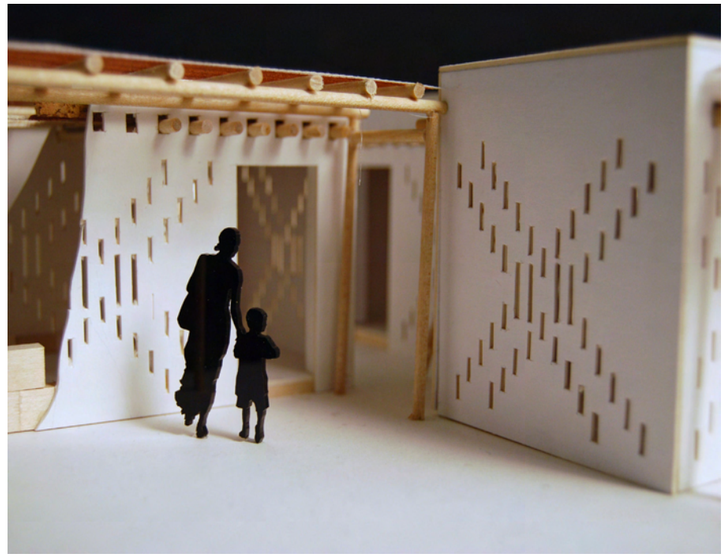


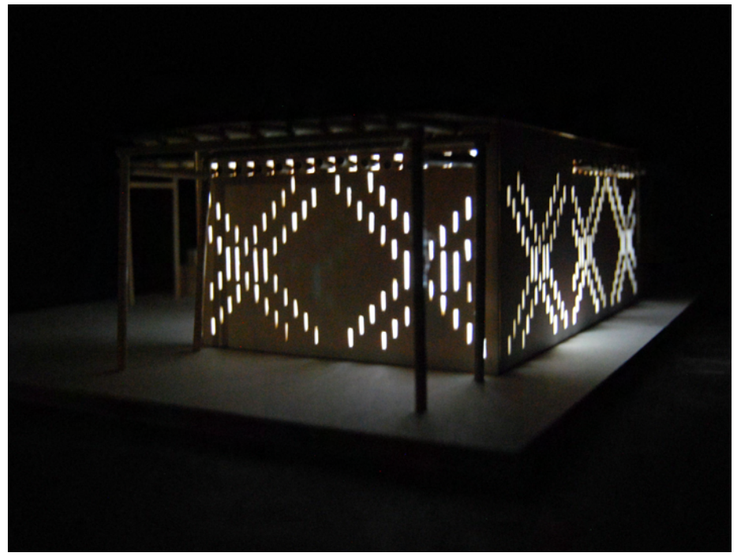
WATER PUMP STATION

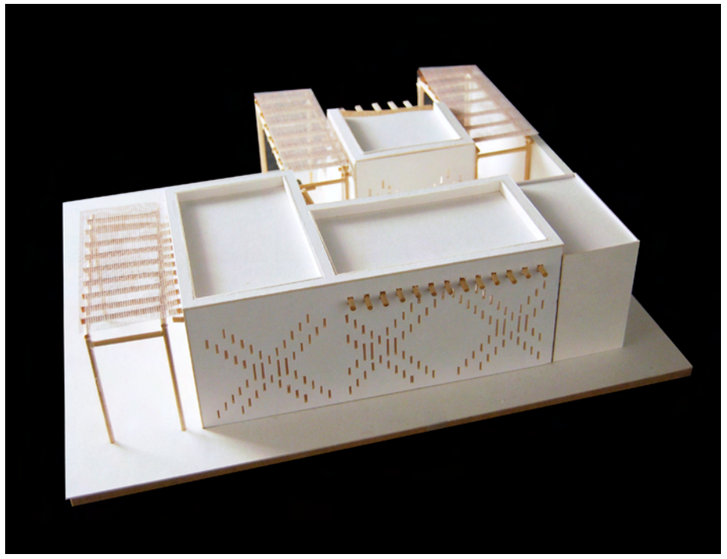
INTERACT/ SHARED SPACE

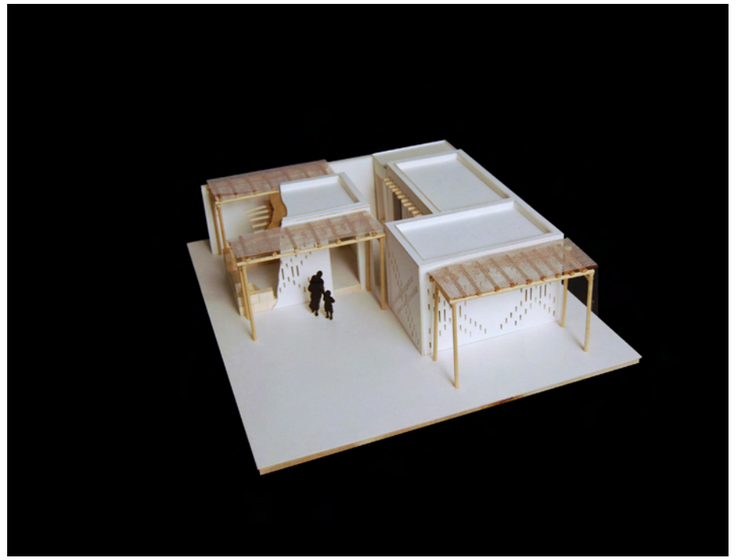
TRANSITION AREA

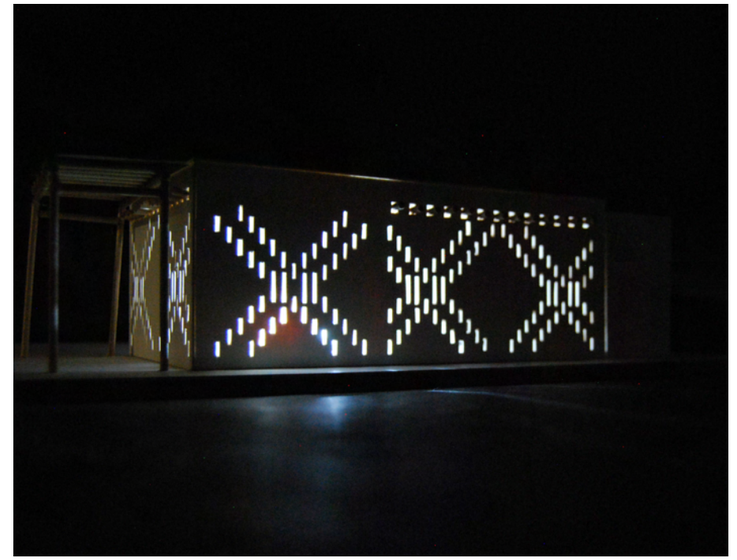








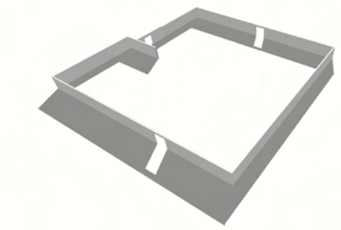




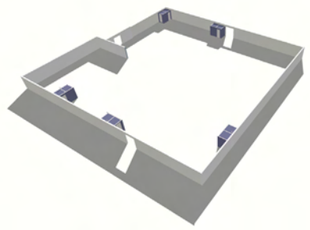
MODEL VIEWS

TRANSITIONAL REFUGEE COMMUNITY

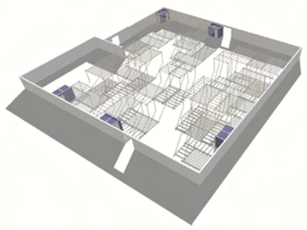
PHASE 1



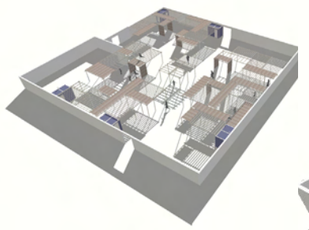
PHASE 2

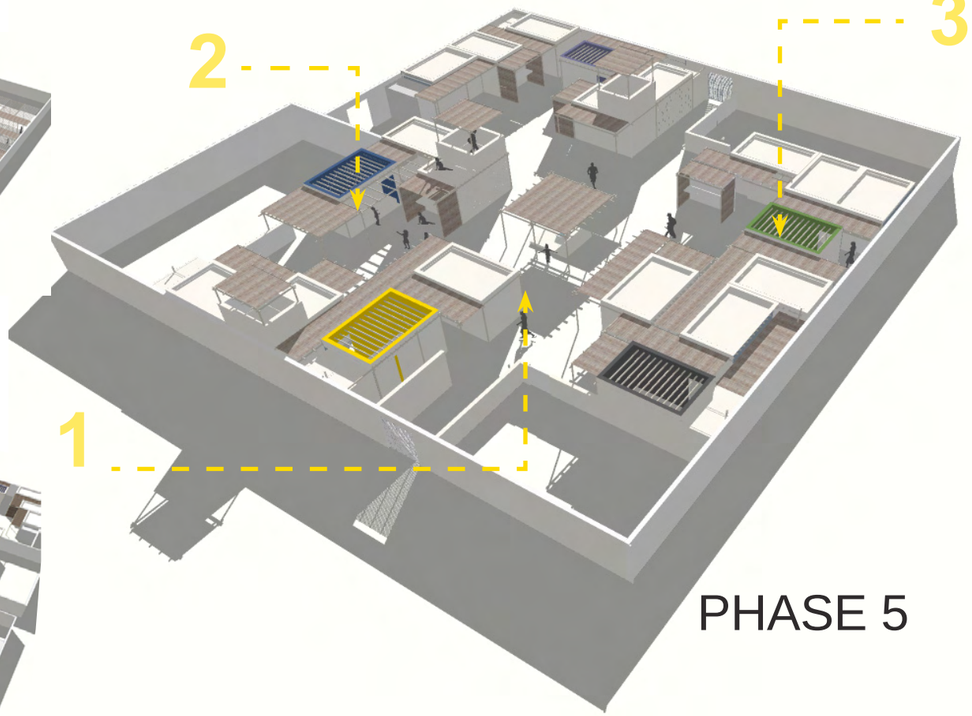


PHASE 3

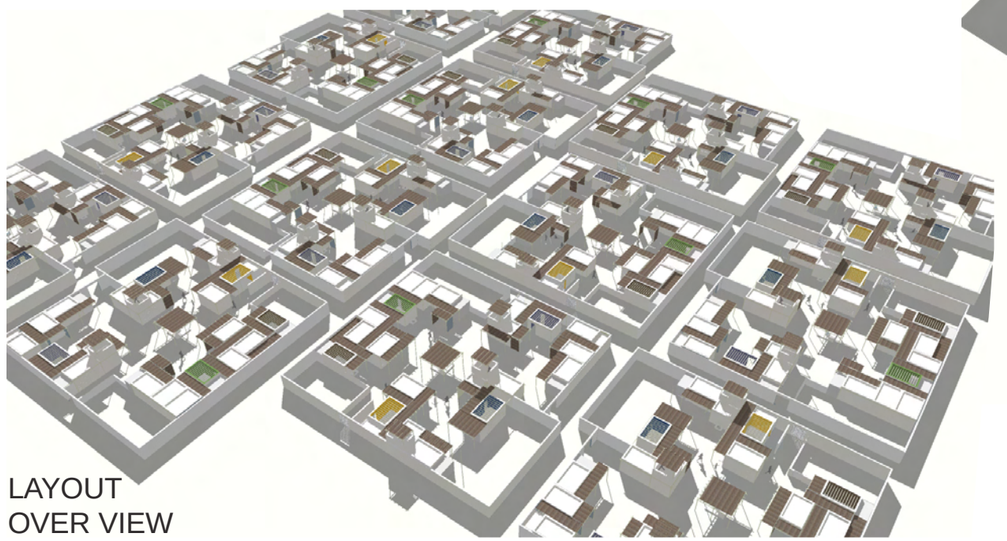


PHASE 4

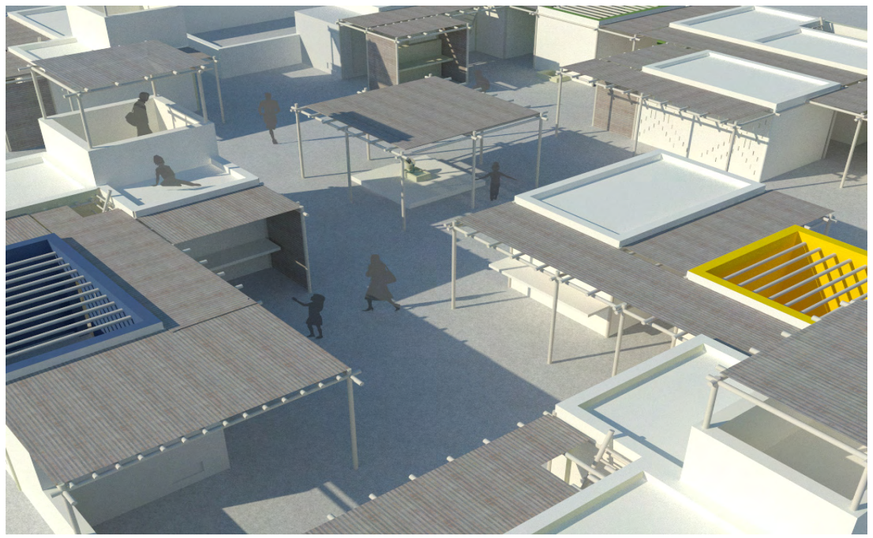


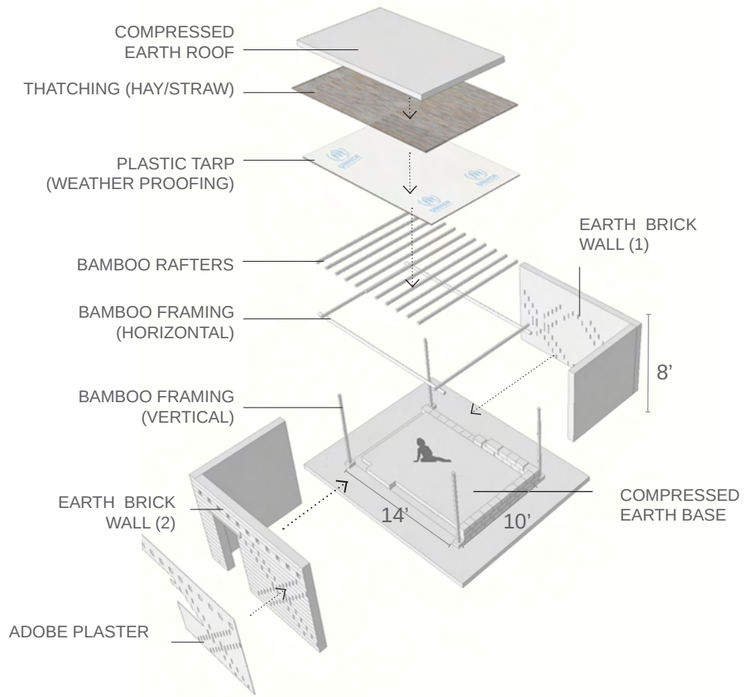


PHASE 5



LAYOUT
OVER VIEW

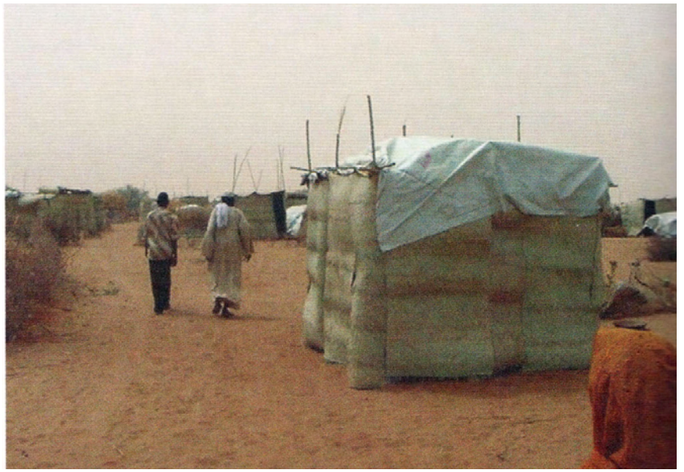




RESOURCES

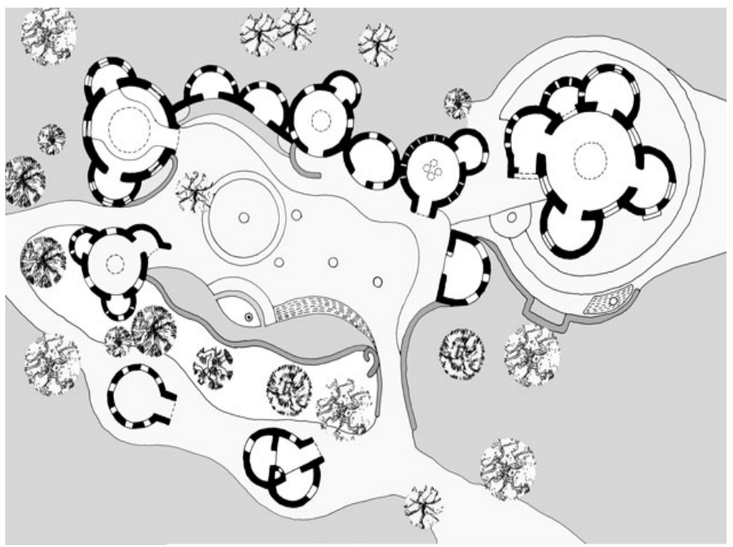
BOLD (Building Opportunities and Livelihoods in Darfur)

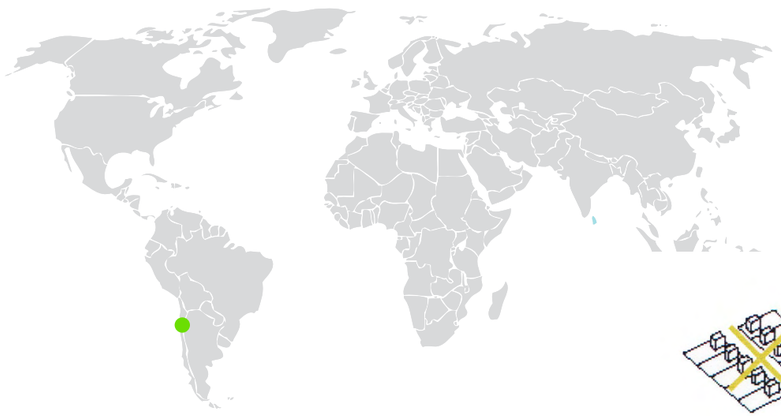
Location: Darfur Province, Sudan
Date: 2004 - 05
Client: Displaced populations in Darfur
Design Team: Scott Mulrooney, Isaac Boyd
Cost per unit: $90
Materials: woven grass mats, bamboo, rubber tires,
Occupancy: 4 - 5 people
Area: 67 sq.ft/6.25 sq.m



Super Adobe

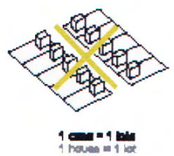
Location: Baninajar Refugee Camp, Iran
Date: 1995
Client: Iraqi refugees
Design Firm: California Institute of Earth Art and Architecture (Cal-Earth)
Cost per unit: $625
Materials: lime stabalized earth, sand, barbed wire (stabalization)
Area: 150 sq.ft/ 14.6 sq.m

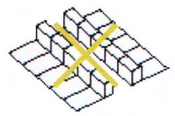


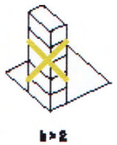


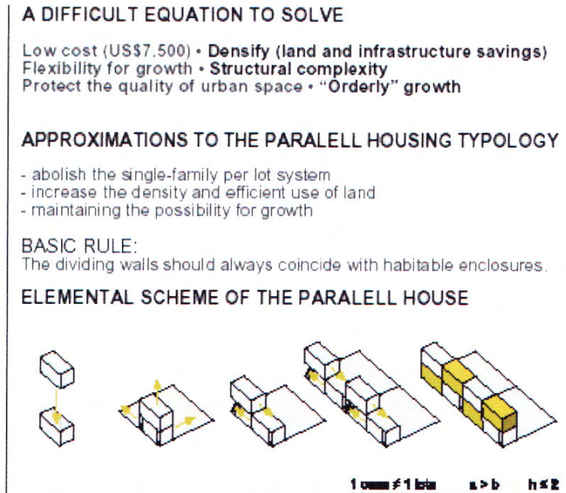
Quinta Monroy Housing Project

Location: Iquique, Chile
Date: 2002 - 05
Client: 93 illegal squatter households
Design Firm: Elemental Housing Initiative
Cost per unit: $7,500 (including land)
Area: 430 sq.ft/ 36 sq.m







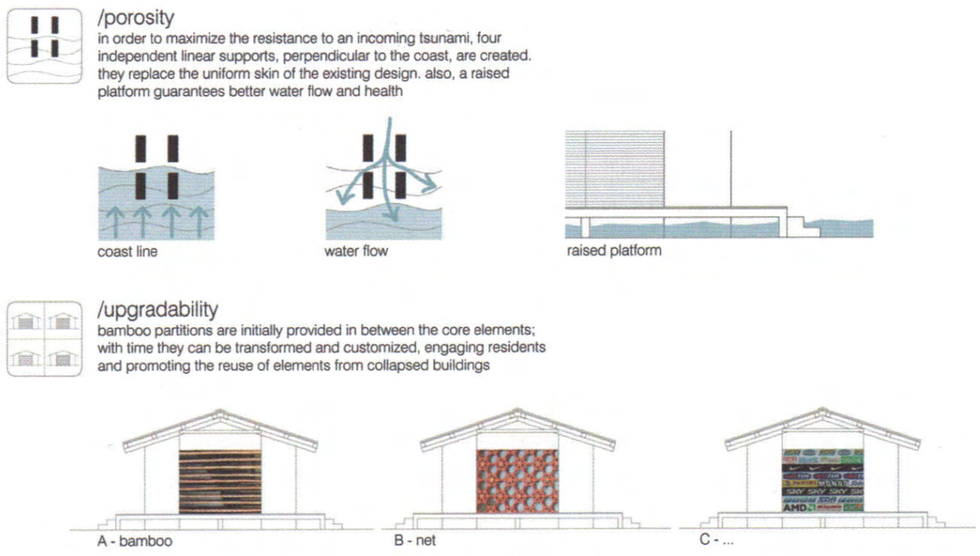


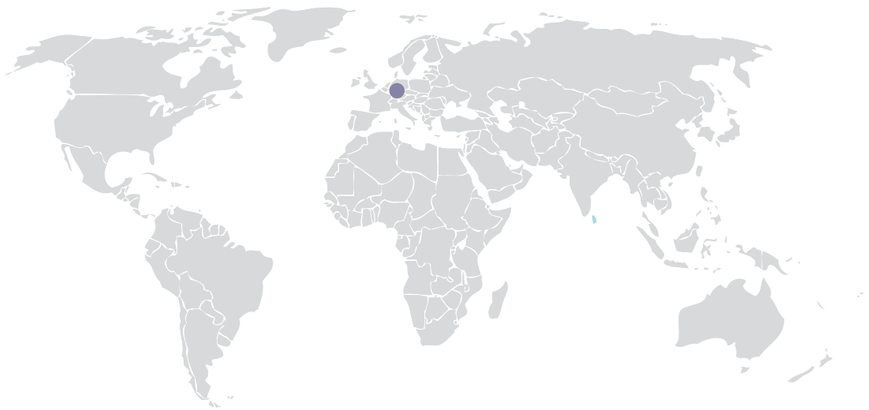
A Bridge Too Far

Location: Po River, Maosi, Gansu Province, China
Date: 2004 - 05
Client: Villagers of Maosi
Design Team: Chan Pui Ming, Mu Jun, volunteers from Maosi, students
Cost: $141,900 (including labor and materials)
Materials: bamboo, steel, rubble
Length: 328 ft/100 m

Safe(r) House

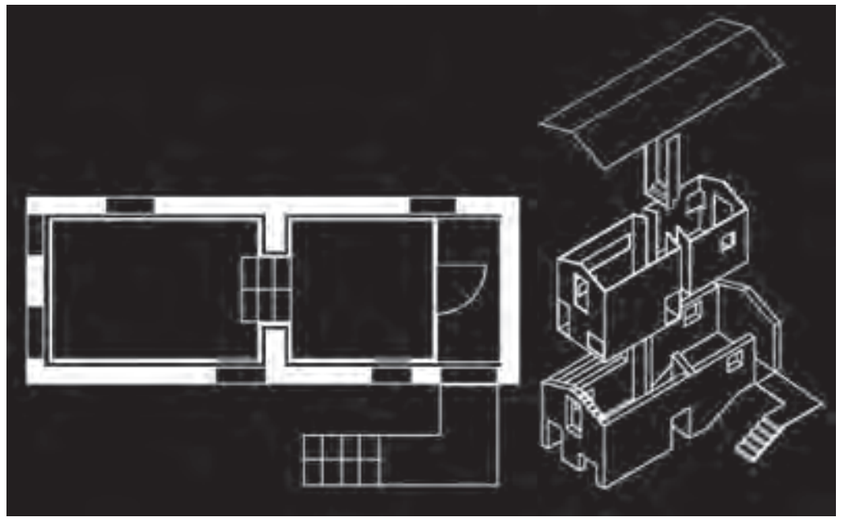
Location: Sri Lanka
Date: 2005
Client: displaced residents of Dodanduwa, Sri Lanka
Design Team: Havard Graduate School of Design SENSEable city laboratory
Cost: $1,500
Materials: concrete block, bamboo, tin roofing
Length: 400 sq. ft/ 37 sq. m





Saving the Bacon

Location: Germany
Date: 2000
Design Team:FNP Architekten
Materials:wood, existing concrete brick structure



American, The. *Architectural Graphic Standards.* New York: Wiley, 2007.
Ballesteros, Mario. *Verb Crisis:Architectural Responses to Unprecedented Conditions.* Barcelona: Actar, 2008.
Ban, Shigeru. *Paper Tube Architecture From Kobe to Rwanda.* Tokyo: Chikuma Shobo, 1998.
Corsellis, Tom, and Antonella Vitale. *Transitional Settlement: Displaced Populations.* Oxford: Oxfam, 2005.
Corsellis, Tom, and Antonella Vitale. "Transitional Settlement: Displaced Populations." Shelterproject.com :: This Domain Is for Sale. Web. 28 Feb. 2010. <http://www.shelterproject.com>.
Crouch, Dora P., and June G. Johnson. *Traditions in Architecture: Africa, America, Asia, and Oceania*. New York: Oxford UP, USA, 2000.
Dean, Andrea O. *Rural Studio Samuel Mockbee and an Architecture of Decency.* New York: Princeton Architectural, 2002.
Fathy, Hassan. *Architecture for the Poor: An Experiment in Rural Egypt* (Phoenix Books). New York: University Of Chicago, 2000.
Feireiss, Lukas. *Space Craft: Fleeting Architecture and Hideouts.* Ed. Robert Klanten. Die Gestalten Verlag, 2007.
Fuller, R. Buckminster. Critical Path. New York, N.Y: St. Martin's, 1981. Print.
Guallart, Vicente. *GeoLogics Geography, Bits and Architecture.* Barcelona: Actar, 2007.
Haydn, Florian, and Robert Temel, eds. *Temporary Urban Spaces: Concepts for the Use of City Spaces.* Boston: Birkhäuser Basel, 2006.
Humanity, Architecture For. *Design Like You Give a Damn: Architectural Responses to Humanitarian Crises*. Ed. Kate Stohr. New York: Metropolis, 2006.
Karlen, Mark. *Space Planning Basics*. Hoboken, N.J: J. Wiley & Sons, 2004.
Kronenburg, R. "Chapter 8: Shelter after Disaster." *Houses in Motion: the Genesis, History and Development of the Portable Building.* Chichester: Wiley-Academy, 2002.
Labelle, Prussin. *African Nomadic Architecture: Space, Place and Gender.* Washington: Smithsonian, 1997.
Lauber, Wolfgang, Peter Cheret, Klaus Ferstl, and Eckhart Ribbeck. *Tropical Architecture Sustainable and Humane Building in Africa, Latin America and South-East Asia.* Grand Rapids: Prestel, 2005.
Lischer, Sarah Kenyon. Dangerous Sanctuaries: *Refugee Camps, Civil War, and the Dilemmas of Humanitarian Aid.* New York: Cornell UP, 2006.
Mau, Bruce, and Jennifer Leonard. *Massive Change.* New York: Phaidon, 2004.
McDonough, William, and Michael Braungart. *Cradle to Cradle: Remaking the Way We Make Things*. New York: North Point, 2002.
McMorrough, Julia. *Materials, Structures, and Standards: All the Details Architects Need to Know but Can Never Find.* Gloucester, Mass: Rockport, 2006.
Neutra, Richard. Survival Through Design. New York: Oxford UP, 1969.
Paul, Oliver,. *Built to Meet Needs: Cultural Issues in Vernacular Architecture.* Amsterdam: Architectural, 2006.
Ragette, Friedrich. *Traditional Domestic Architecture of the Arab Region.* New York: Edition Axel Menges, 2003.
Siegal, Jennifer, and Robert Kronenburg. *Mobile: The Art of Portable Architecture.* New York: Princeton Architectural, 2002.
Sinel, Elizabeth. "Refugees: The Effects of Displacement." University of Massachusettes. Web. 11 Nov. 2009. <http://www.comcol.umass.edu/dbc/s07_dr/literature_review.pdf>.
Smith, Courtenay, and Sean Topham. Xtreme Houses. Munich: Prestel, 2002.
Smith, Cynthia E. *Design for the Other 90%.* Minneapolis: Editions Assouline, 2007.
Thomson, Sarah L., Greg Mortenson, and David Oliver. Relin. *Three Cups of Tea.* New York: Puffin, 2009.
UNHCR, Office. *The State of the World's Refugees Human Displacement in the New Millennium*. New York: Oxford UP, USA, 2006. Print.
Valle, Cristina Del. *Compact Houses: Architecture for the Environment.* New York: Universe, 2005.
Vélez, Simón, Alexander Von. Vegesack, Mateo Kries, and Jean Dethier. *Grow Your Own House: Simón Vélez Und Die Bambusarchitektur.* Weil Am Rhein, Germany: Vitra Design Museum, 2000.
William, Karen Lynn, and Khadra Mohammad. *Four Feet, Two Sandals.* New York: Eerdmans for Young Readers, 2007.

BIBLIOGRAPHY