UN HABITAT
FOR A BETTER URBAN FUTURE

Turkana Houses

SOUTH SUDAN MAJOR TRIBES.

- DINKA TRIBE HOUSING:
  WALLS MADE OF CLAY.
  DRY GRASS USED TO CREATE CONICAL THATCHING ROOFS.
  THE DINKA SPEAK: NILO-SAHARAN LANGUAGES.
- NUER TRIBE HOUSING:
  ROUGH MUD WALLS
  CONICAL GRASS WOVEN ROOFS.

DINKA CULTURE. (AND NUER).

- BELONG TO A GROUP OF CULTURES KNOWN AS THE NILOTIC PEOPLE.
- POLYGAMS.
- CATTLE BARNS. 12 M ACROSS. [COMPACTED CLAY + STRAW] AS FOUNDATIONS. ROOF STRUCTURE: BRANCHES OF ACCACIA OR OTHER HARD WOODS.

FOR ITS CONSTRUCTION: A WALL ABOUT 3M HIGH, BUILT OF CLOSELY SPACED STAKES. + 2 OR 3 SUBSTANTIAL ROPES WRAP AROUND THIS WALL AS COMPRESSION RINGS TO COUNTERACT THE FORCES FROM THE ROOF THAT IT IS DESIGN TO CARRY. THIS WALL IS USED AS A TYPE OF BRACE FOR NUMEROUS SLENDER POLES THAT RISE INTO THE SKY AND THAT ARE BOUND TOGETHER EVERY METER OR SO BY A RISING SEQUENCE OF COMPRESSION RINGS, EACH ONE SERVING, LIKE THE RUNGS OF A LADDER, AS A PLATFORM FOR BUILDERS. BY MAKING RINGS EVER SMALLERS, THE CONICAL-SHAPED DOME GRADUALLY COMES INTO SHAPE. ONCE THE STRUCTURE IS FINISHED, IT IS COVERED WITH LAYERS OF CUT STRAW.

PHOTOGRAPHER: GEORGE STEINMETZ/ASA.

BUILDING AND REPAIRS USUALLY TAKES PLACE IN THE DRY SEASON WHEN THERE IS PLENTY OF STRAW AND ENOUGH MILLET TO PROVIDE BEER FOR THOSE WHO ASSIST IN THE WORK.

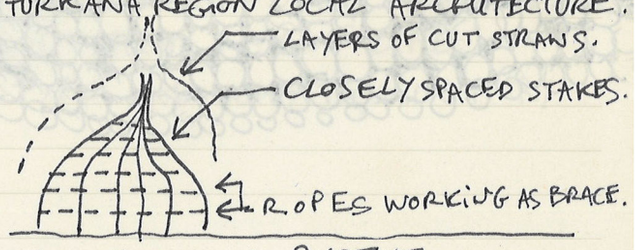
NUER CULTURE. (AND DINKA).

PITO DINKA.

TOPOSA TRIBE

- HOUSES CALLED "TUKUL". CLOSE TO TURKANA REGION LOCAL ARCHITECTURE.

. AZANDE .	. KUKU .	. MURLE
. MUNDARI .	. ACHOLI .	. LATUKA
. POJULU .	. SHILLUK	. LOKOYA
. MADI .	. KACHIPO	. LANGO .
. LOPIT .	. NUBA .	. BOYA .



CATTLE BARN SYSTEM.

Turkana Houses

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Turkana Houses

Housing Prototypes in Kalobeyei New Settlement
by Shigeru Ban and Philippe Monteil, with UN-Habitat support

United Nations Human Settlements Programme

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Foreword

In 1994, I saw photographs of poor shelters for Rwandan refugees and visited the headquarters of UNHCR in Geneva. There, I heard about their challenges in providing shelters as they did not want to encourage refugees to cut down all the local forests to make wooden frames. At the same time, when they provided metal tubes for the frames they were sold and replaced by wood.

Therefore, UNHCR was interested in my idea of using recycled paper tubes for shelter construction. As the budget was 50 USD for each shelter, I designed simple shelters using paper tubes and plastic sheeting.

Shelters made of PT and tarpaulin under construction. Byumba Refugee Camp, Rwanda. Feb.1999. © VAN

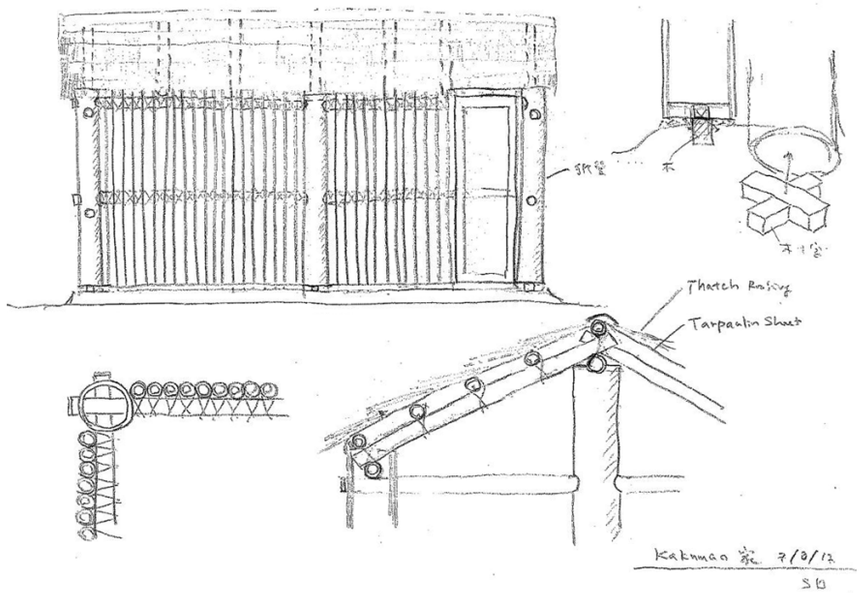
The project featured in this publication focuses on our experience developing houses for South Sudanese and other refugees living in Northern Kenya who were unable to go back to their original villages due to endless civil wars and conflicts. It was commissioned by UN-Habitat. Therefore, the meaning of 'refugee shelters' totally changed from my previous experience in Rwanda, as we sought to build 'refugee houses' that are not temporary but that could be used for many years.

When I visited Kalobeyei Town, I found houses of the nomadic tribe, the Turkana people. I learned about the locally available resources and building techniques of this nomadic tribe.

Turkana woman showing her building technique to Shigeru Ban. Kalobeyei Town. July 2017. © VAN

We also started investigating different building materials and vernacular housing techniques used amongst different tribes and refugee hosting areas. Our aim was to hire refugees and Turkana people to build their own houses using their traditional methods so they could maintain their houses by themselves.

Thus, I designed four prototypes with different materials and technologies, including structures made of paper tubes, which were available in Kenya.



Shigeru Ban's sketch for Kalobeyei Settlement. Structure and cladding made of paper tubes. August 2017

Type A. Paper tube structure covered with paper tubes.
Type B. Timber frame filled with burnt bricks. This structural system was developed for victims of the 2015 earthquake in Nepal.
Type C. House made of Compressed Earth Blocks.
Type D. Paper tube structure covered by branches of local trees used for nomadic houses.
In comparing the cost and durability of the 4 types, the timber frame filled with burnt bricks was chosen for the mass construction.

Philippe Monteil was our chief architect for La Seine Musicale, the music concert hall complex near Paris completed in 2017. After La Seine Musicale was completed, he moved to Nairobi with his children, and his wife who works for UNESCO. Therefore, he kindly accepted to manage this project, developed it further and enriched it with his leadership and ideas.

Shigeru Ban. July 2020

Foreword

I am delighted to present this publication on the work of UN-Habitat and Shigeru Ban Architects' Shelter Typology Design and Implementation project, as part of UN-Habitat's support towards the Kalobeyei Integrated Socio-Economic Development Program (KISEDP), in Turkana County, Kenya.

With these crises increasing in magnitude and frequency, and with the displacement of people becoming increasingly protracted, the responses by local governments and authorities, stakeholders and partners must be equally sustainable and long-term. Kenya, which has hosted refugees and asylum seekers since 1992 in the Kakuma Refugee Camp, established the Kalobeyei Settlement in 2015, aiming to pilot a new approach promoting the self-reliance of refugees and host populations by enhancing livelihood opportunities and service delivery. Subsequently, a 15-year comprehensive multi-sectoral and multi stakeholder initiative, the Kalobeyei Integrated Socio-Economic Development Programme (KISEDP) was launched, to create an enabling environment for inclusive housing, service delivery, investment and job creation, and build communities' resilience, skills and capabilities to enhance the overall local economy.

Aligned with the Advisory Development Plan for Kalobeyei Settlement developed by UN-Habitat, the collaboration with Shigeru Ban Architects since 2017 has seen the creation of unique Shelter Typology Designs using a highly participative process involving host and refugee communities. These prototypes have been constructed in a pilot neighborhood in Kalobeyei Settlement, not only demonstrating culturally sustainable housing solutions, but also serving to build a community.

I would like to express my gratitude to UN-Habitat and Shigeru Ban Architect colleagues for their commitment to the project, and for very thorough processes of design and experimenting to arrive at effective shelter solutions. A sustainability-oriented approach to refugee programming is necessary to ensure that the needs of both hosts and refugees are adequately met. I hope that this publication will support practitioners in this vital work, and can contribute to the body of examples that can inspire future programming.

Maimunah Mohd Sharif
Executive Director, UN-Habitat