

A young boy with dark skin and short hair is standing in a classroom. He is wearing a red long-sleeved sweater over a light-colored collared shirt and patterned shorts. He is pointing his right arm towards a chalkboard. On the chalkboard, there is a simple line drawing of a person's head and shoulders. The chalkboard is mounted on a light-colored wall. The floor is made of dirt or concrete.

Welcome to the Junior Kenya
Studio Critique

Nzuri Asubuhi!

Design in Kenya

Univerisity of the Arts
School of Design



Ndabibi, Kenya



Initiative #2: The Need to Sustain the Transformative Ndabibi Environmental Conservation Centre / University of the Arts Collaboration

When Josphat Macharia, Director, Ndabibi Environmental Conservation Centre (NECC), visited the U.S. in April 2011, the Gasts introduced him to key leaders at the University of the Arts (UArts), Philadelphia, especially within its Industrial Design (ID) Department. Thus began a multi-year collaboration of innovative thinking and entrepreneurship focused on solving two of sub-Saharan Africa's most pressing challenges:

- to explore an alternative, sustainable fuel source for cooking and heating
- to harvest and manage the perennially scarce supply of water

Starting in 2012, UArts' Junior Studio and Josphat began collaborating across their great distance, both geographically and culturally, by modifying traditional design methods. A video camera was shipped to Josphat to record daily life. Skype and cell phones were used for interviews. Summer travel to Kenya in 2013 allowed seven students and two professors to carry prototypes and conduct detailed research on site.

ID students at UArts learn to apply creativity to real world problems, innovating by focusing on people and their needs. In Junior Studio, they branch out to face the complexities of engaging real communities in a practical design process.

This project, rather than keying on a transfer of technology from one culture to another, demands a collaborative process to design solutions sensitive to local culture, materials, labor and know-how. With some five billion people globally populating under-served and emerging markets, traditional methods demand reinvention. At UArts, designers learn to integrate an entrepreneurial spirit, a social conscience and an environmental-cultural sensitivity in resolving real problems faced by real people. This project continues to be life changing both in Kenya and the U.S.



Josphat Macharia

NECC DESIRED PROGRAMMES

1. Animal Care
2. Horticulture
3. Beekeeping
4. Soil Conservation /cut of drains
5. Water Harvesting
6. Farming Techniques
7. Tree nursery
8. Farming God's way
9. Compost Making
10. Bolea Chai
11. Grafting
12. Crop rotation
14. Seed harvesting
15. Solar Cooking
16. Fireless Cookers
17. Food storage and Preservation
18. Cooking methods and Nutrition
19. Hygiene – Latrine management
20. Bio sand filter
21. Sack garden
22. Organic Farming
23. Bio gas.
24. Tree pruning
25. Hay harvesting “fodder”
26. Tree planting
27. How to make zero grazing units
28. Pesticide making using weeds.
29. Home made foliar feed
30. Solar driers
31. Introduction to mushroom growing
32. Tools storage and cleaning
33. Farm record keeping
34. Mud Jikos
35. HIV/Aids programme
36. General farm machines
Maintenance – bicycles
Wheelbarrows etc
37. Deflouridation filter
38. NECC fuel project
39. Zai holes
40. Terraces / cover crops

Design Challenges we focused on in 2012:

1. farm transportation
2. alternative fuels
3. moving water on the farm

In 2013 we looked at more design opportunities:

1. efficient stove use
2. sack gardening
3. education regarding menstruation
4. hand washing and sanitation
5. water collection
6. fruit drying and preservation
7. malaria prevention and education
8. bicycle battery charging & lighting for home

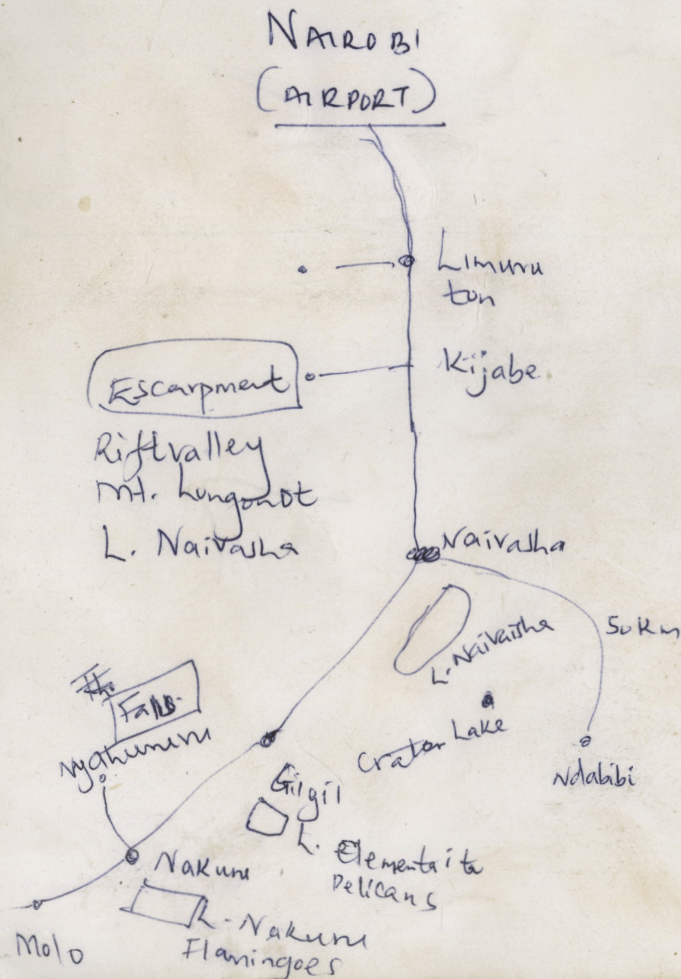




Camera 1 = NDABITHI

2 =

3 =



field journals

KENYA 2013

Field Research Journal

INDUSTRIAL DESIGN
THE UNIVERSITY OF THE ARTS



is separate
to me
: Kikuyu
and church
we that
like to make
some
total
income

Name <u>Duncan Muthingi</u>	
	Age <u>65</u>
	Date <u>10/11/2018</u>
	Married <u>YES</u>
	Children <u>5</u>
	Age <u>37-75</u>
Bank Name <u>KBS</u>	
Ref <u>201800047</u>	
Email	

Title <u>Executive</u> Address <u>Nairobi</u> Occupation	
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Electricity by your house? self and 4 others

Do you have a collector/collector team? 3 people

Location Nairobi central Date 9/11/18

[illegible][illegible][illegible]

JUNE 02
DAY 2: Sat June 1

JOURNAL - "A SAVING"

JORDEN'S CHURCH

VISIT WITH
2 CHURCHES -
AND THE GOV.
BEFORE MAG.
INTERVIEWS
(GETTING THE
ARREST INVOLVED)

NORRIS ON CENTRAL
ROAD (IN) CENTRAL

Sketches of buildings and a road labeled "SOUTH".

Name Duncan Mwangi



Age 65

Sex male

Married yes

Children 5

Ages 35-45

Speak English yes

Cell 07 21985297

Email _____

Tribe Kikuyu

Address / Village Ndabis

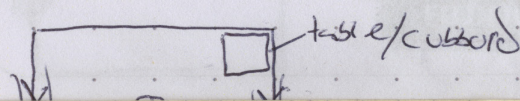
Occupation _____

Electricity in your House? solar panel w/ battery

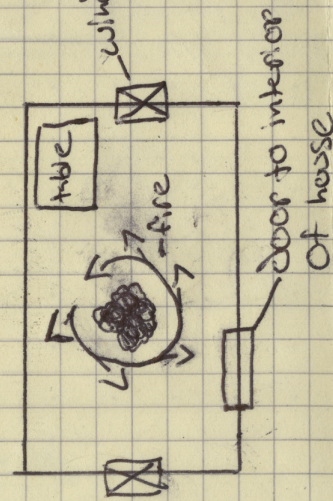
Do you have a rainwater collection tank? 2 metal 1 plastic

Location Ndabis center Date 5/2/13

- 3 stone fire / "rocket like" cooker
- only fire wood
- cuts down trees on his compound
- replants trees as he cuts them down
- uses maize cobs after harvest before using trees
- keeps a supply of cobs for extra fuel
- maize cobs last for year in his supply



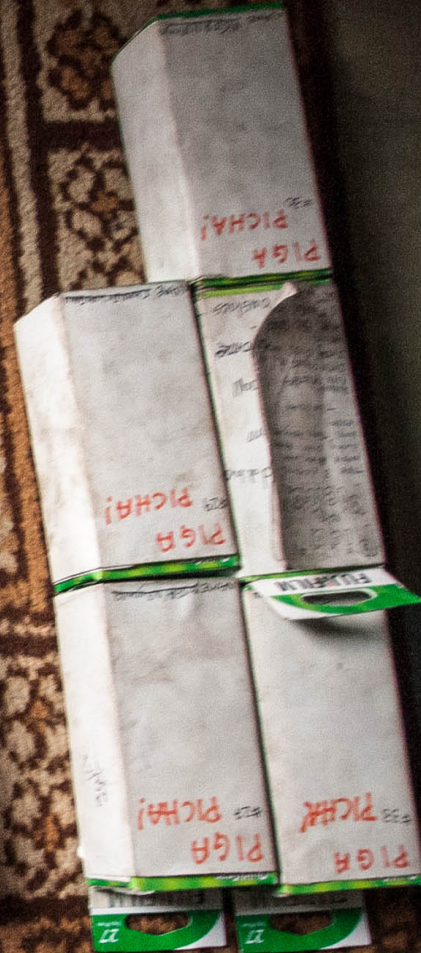
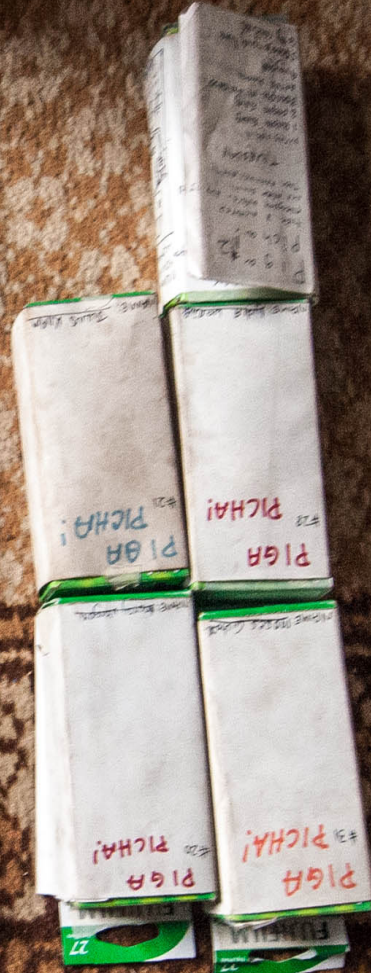
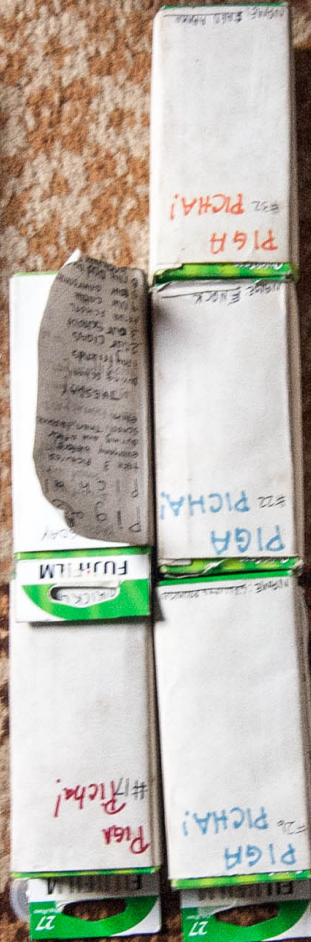
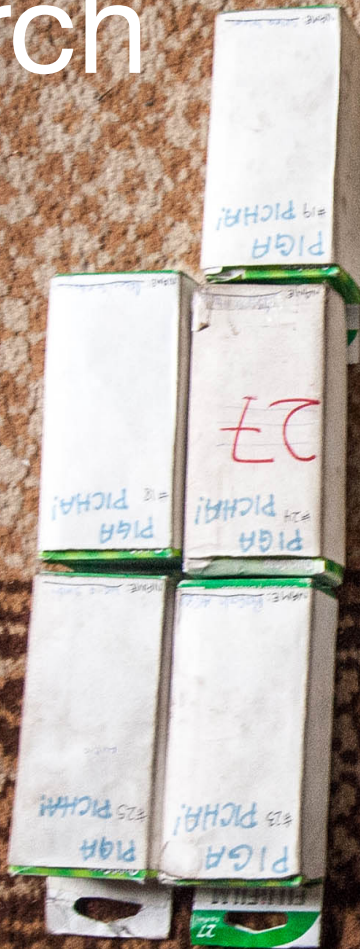
Duncan's Kitchen



- Three stone fire
- no chimney
- Center of the room
- Two windows facing opposite sides of the room for smoke ventilation
- Still a lot of smoke



disposable camera research



TAKE NINE PICTURES
OF WHATEVER YOU
WOULD LIKE.
DESCRIBE EACH BELOW.

1. My brother
2. My picture
3. My ~~Father~~
4. Our family friends
5. My neighbour
6. My classmates
7. My deskmate
8. School rabbits
9. Our environment

I would like you to help me
because I have One Parent and he
is Old he cannot manage to pay for
me school fees Please do something.

**PIGA
PICHA!**

#3

NAME: Peter Mwaura

I would like to visit your
Country
I would like to have your Country's
Photographs

TAKE NINE PICTURES
OF WHAT YOUR FAMILY
DOES WITH WATER.
DESCRIBE EACH
BELOW.

1. For Animals
2. For Cooking
3. For bathing
4. For washing utensils
5. for washing clothes
6. For drinking
7. For watering plants
8. For leisure
9. For building

THURSDAY

Before

- 16 my parents taking breakfast
- 17 my sister
- 18 my grandmother

during

- 19 my sister and her friend
- 20 my relative
- 21

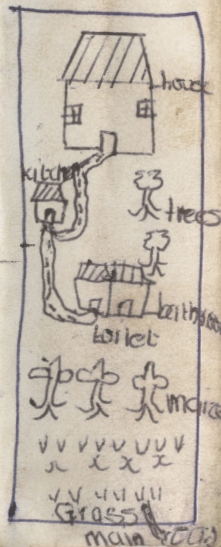
After

22

23

24

DRAW
YOUR
HOME



FRIDAY
BEFORE

25

26

27

Asante sana!

Margaret Wagitili

DRAW
YOURSELF



Piga #2
Picha!

take 3 pictures
everyday before, during
and after school.
Then, describe each

TUESDAY

during school

- 1 people Eating
- 2 people Eating
- 3 people in the class

AFTER SCHOOL

4 myself

- 5 people going home
- 6 my cousins









This year we reduced the scope of project work and re-focused on primary design challenges that we will continue to build on in the future:

1. **water:**

filtration

transportation

2. **energy:**

alternative fuel

stove efficiency



Our typical Junior Studio is based on working outside of the studio, directly with the community. This poses a challenge- with Josphat being over 5,000 miles away in Ndabibi, Kenya.

We believe the challenge of working in this context is worth the many challenges and offers a unique learning experience that elevates the conversation concerning human centered design.

Asante Sana
Enjoy the presentaions and conversation!