Raaxo: A post-refugee landscape

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RAAXO: A POST-REFUGEE LANDSCAPE

An Honors College Project Presented to
the Faculty of the Undergraduate
College of Visual and Performing Arts
James Madison University

by Bailey Mariah Riales

Accepted by the faculty of the Department of Architectural Design, James Madison University, in partial fulfillment of the requirements for the Honors College.

FACULTY COMMITTEE:

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HONORS COLLEGE APPROVAL:

Bradley R. Newcomer, Ph.D., Dean, Honors College

PUBLIC PRESENTATION

This work is accepted for presentation, in part or in full, at [venue] JMU Studio Center on [date] April 28, 2017.
steps + process

01 case studies
02 material study models
03 camp analysis drawings
04 site condition analysis drawing
05 site model
06 detail screen model
07 time-lapse drawing of wind

- researching previous landscape projects/land artists
- learning + experimenting with using materials in architecture
- design of landscapes
- research of dadaab camps + space analysis
- studying site conditions to understand + design the idea of comfort
- placement of screens into site
- prototype of protective barrier from wind / creates facade for refugees comfort (dwelling + community spaces)
- process of sand build-up over time
sited in Dadaab, Kenya // Raaxo is a transformation of the current landscape that works with harsh conditions of sun and wind to provide spaces of dwelling and gathering, improving refugee comfort by initiating a sense of community. Tall, mechanical screens protect against the strong desert winds, while also creating a build-up of sand. Over time, the sand build-up forms an exterior barrier around the community and dwelling spaces, and creates a façade on the interior. Other designed screens are placed opposite the formed community spaces, providing shade from the desert sun for the refugees. Throughout the span of a year, Raaxo becomes a designed landscape of multiple protected spaces of comfort where refugees occupy, gather and call “home”.
situated in east Kenya, Dadaab is mud & tent metropolis, a 17-mile span of flat, red plain surrounded by desert and thorn trees, occupied by the four most populated refugee camps in the world. Within the month, the Kenyan government will start the process of closing all four camps—due to prolonged insecurity and violence of the barren, dusty settlement; they feel the need to terminate Dadaab.
Baris was an interesting problem in which I was to create all the parts of a community, to bring together in the best way the economy and the standard of living in rural areas. 

— Hassan Fathy

Hassan Fathy, Kharga, Egypt

“Build your architecture from what is beneath your feet.”

— Hassan Fathy

Due to their excellent seismic performance, containers and a tentsile roof protects from changing weather.

Shigeru Ban learned about the state of the town of Onagawa and their damaging rains with a large overhanging tin roof.

The Rural Studio philosophy suggests that everyone, both must rest on the social and cultural base of its time and place.

Architecture has to be greater than just give the user the freedom to individually inhabit the space.

Tarpaulin and the school was graffiti-painted.

“Architecture is not about aesthetics. It’s about comfort, status, beauty. These nets, she said, you put them on the floor, bugs leave your house. Children can sleep through the night; she herself could make and signed up. We took a lesson from IDEO, one of our favorite companies, and quickly did a prototyping on the United States, and find a way for the women themselves to go out and sell these nets to others — she quickly started calculating what and social justice growing up in Poughkeepsie, a city in New York’s Hudson Valley where

— Changing realities that made him realize architects could help in emerging economies,

— Out freelance journalism in Cape Town, South Africa, where he had lived as a student five

— Of Chicago as a way to investigate politics, anthropology, and human rights. After graduation

— That mass design group this year will add

— Is an expansive field,” he said, but too often it has been narrowly considered, ignoring the

— A skilled workforce, and even hope in places marked by poverty and tragedy. “Architecture

— Concepts that prevent the transmission of airborne disease. In place of drawn curtains, closed

— Growing up in Bali with two artist parents, Elora Hardy’s

— Fashion houses. Then, in a dramatic shift, she moved back home

— Creativity led her to design prints for one of New York’s biggest

— Case studies

— Fighting poverty, by design

— Green school

— Lucien den Arend
CASE STUDY 11
Danae Stratou + Alexandra Stratou + Stella Constantinides
Sahara Desert
desert breath
An impossibly immense land art installation dug into the sands of the Sahara desert by the D.A.ST. Arteam back in 1997. The artwork was a collaborative effort spanning two years between installation artist Danae Stratou, industrial designer Alexandra Stratou, and architect Stella Constantinides. Covering an area of about 1 million square feet, the installation involved the displacement of 280,000 square feet of sand and the creation of a large central pool of water.

CASE STUDY 16
IKEA Foundation + UNHCR, Greece, Iraq + more
better shelter
"Better Shelter tackles one of the defining humanitarian challenges of our times: the availability of the land in each valley, creating an intaglio of bright sparkling colors, echoing Islamic art. From 410,000 multi-colored barrels to form a mosaic of bright sparkling colors, echoing Islamic art. The couple likes to create 'gentle disturbances' in spaces owned by humans and their surroundings. The project is a response to the conditions we are in and transform them. Innovative, humane and cost-effective solutions that can be adapted to different settings.

CASE STUDY 17
Rasem Kamal, Jordanian desert
wadi rum
Kamal has proposed a network of burrow-like spaces that would include small intimate inner spaces,imestone and concrete vertical corridors, and several upright slabs that poke up over the top quarter-mile long. Its irregular surface incorporates immense concrete and dirt mastabas, rectangles with industrial characteristics that are best viewed from a helicopter. In 2010, Kamal began the project in at 171 feet long, they are difficult to see from ground level and are best viewed from a helicopter. In the south of Jordan, Kamal was motivated to create the project in a near-empty desert hemmed by colourful sandstone mountains and hotel, is set underground to retain the appearance of Wadi Rum.

CASE STUDY 13
Christo + Jeanne-Claude, USA + Japan
the umbrellas
This Japan-USA temporary work of art reflected the availability of the land in each valley, creating an intaglio of bright sparkling colors, echoing Islamic art. From 410,000 multi-colored barrels to form a mosaic of bright sparkling colors, echoing Islamic art. The couple likes to create 'gentle disturbances' in spaces owned by humans and their surroundings. The project is a response to the conditions we are in and transform them. Innovative, humane and cost-effective solutions that can be adapted to different settings.

SITE STUDY 18
dadaab: environment
Impact of refugee settlement on natural resources: Case study of Dadaab refugee camps in Kenya. The study found that natural resources around the refugee camps in Kenya are getting swelling numbers of host community awareness through training and information session are impacts of refugee settlement on the environment. Environmental deterioration of surrounding environment due to depletion of the resources which mainly support the refugees in the area who compete for the meager resources with the locals without replacing them and this spells doom to the host community. Environmental impact of the camps on the environment by human settlement and suggesting the need to prepare for the displacement of refugees and the realization that there is limited land for expansions hence degradation i.e. soil erosion, waste disposal and overgrazing, therefore concluded that refugee influx i.e. high population density, absence of mitigating measures, the economic, social, and public health of the refugees in the area.

SITE STUDY 19
dadaab: climate
The variation in the precipitation between the driest and wettest months is 10 mm. The annual average temperature is 28.6 °C. The average annual rainfall range from about 50 to 150 mm. Dadaab is considered to have a desert climate. There is virtually no rainfall during the year in Dadaab. This climate graph and the precipitation is shown below.
individual camp analysis

DAGAHALEY
67,510 refugees
camp blocks
green belt         
education         
camp facilities 
security             
market               
health               
food                   

IFO II
35,700 refugees
camp blocks
green belt         
education         
camp facilities 
security             
market               
health               
food                   

IFO
63,306 refugees
camp blocks
green belt         
education         
camp facilities 
security             
market               
health               
food                   

HAGADERA
82,167 refugees
camp blocks
camp facilities 
security             
market               
health               
food                   

green belt         
education
site analysis [condition]
detail model
wind time-lapse
a day in the life of raaxo

06:15 SUNRISE ABOVE DADAAB DESERT
07:00 WAKE UP
07:15 BREAKFAST—“anjera”, a traditional Somali snack made from wheat flour
08:00-17:00 WORK—could include
• teaching [school // building techniques //
• building [screens // brick facades // markets //
• community spaces]
• coordinating [camp activities for refugees, youth //
• community activities & spaces]
• gathering [materials for bricks, ingredients for cooking meals for family, etc.
18:00 DINNER
19:34 SUNSET
22:30 SLEEP