

# Article

Humanitarian Architecture

25

IMPROVING RESILIENCE TO DISASTERS



# Article 25

Universal Declaration of Human Rights

*“Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, medical care and necessary social services . . . ”*



Article 25 designed Bethel School in Gourcy, Burkina Faso.





# SUSTAINABLE DEVELOPMENT GOALS

17 GOALS TO TRANSFORM OUR WORLD



# HEALTHCARE

More than half the world lacks access to essential health services.

3 GOOD HEALTH



HIV patient Yangon, photo: David Maurice Smith



3 GOOD  
HEALTH



We design hospitals and clinics so that health professionals can deliver quality services to patients.





# EDUCATION

4 QUALITY  
EDUCATION



**1 in 5 children worldwide  
are out of school.**



Displaced Nigerian children, photo: TIME, Jerome Delay





4 QUALITY  
EDUCATION



We build schools in the world's most vulnerable communities, and create inclusive educational environments.



# DISASTER RISK REDUCTION

11 SUSTAINABLE CITIES  
AND COMMUNITIES



Poorly built buildings  
endanger people's lives.



The new school in Petionville designed by Article 25



11 SUSTAINABLE CITIES  
AND COMMUNITIES



We create buildings and infrastructure that provide protection for people living in hazard-prone regions.



# Post-Earthquake Housing Reconstruction

Northern Pakistan



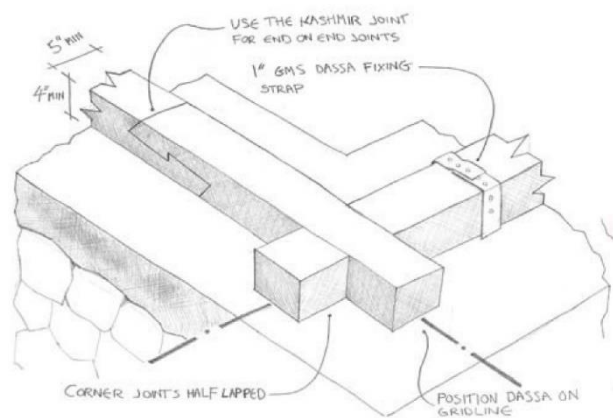
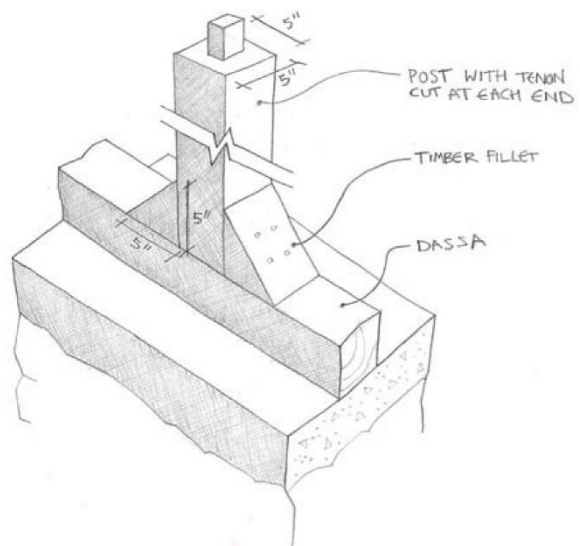


What is appropriate?

Disaster response can lead to wasteful use of resources that are not fit for purpose











Local workforce





# Boisrond Tonnere School

Petionville, Haiti







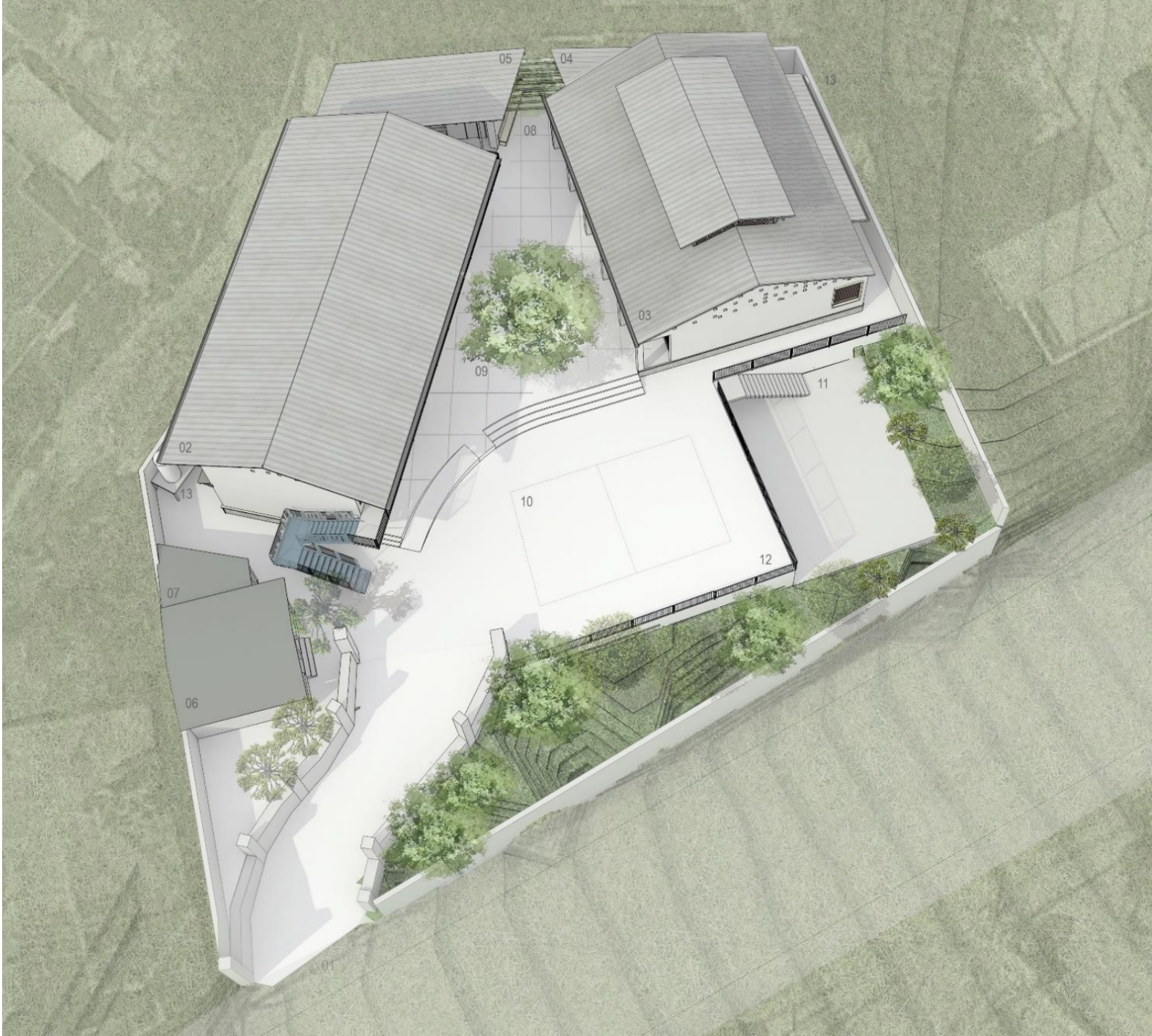






## Article 25's Design

- Redevelopment of original site
- Seismically sensitive design
- Local construction professionals





## Natural light & ventilation

- comfortable temperature
- reduced energy costs
- less maintenance

## Locally sourced materials

- Environmentally friendly
- Boosts economy
- Suits local workforce
- Ease of replacement
- Lower maintenance costs



Opening ceremony, Summer 2018







Vendredi 05 octobre 2019  
Celui qui aime apprendre est bien prêt du savoir

2- Cela me regarde

6- Le perroquet a bien parlé

9- Vous m'écoutez tout à l'heure

$$5 \times 9 = 45 \quad 4 \times 8 =$$

mette à la forme négative

1- Cette montre a été perdue  
 cette montre n'a pas été perdue

2- Elle arrivera demain  
 Elle n'arrivera pas demain

3- le vent a renversé des arbres

4- Il est de travailler en classe

5- les foules glorieuses sont arrivées

6- les fleurs

	5 <sup>ème</sup> CLASSE		6 <sup>ème</sup> CLASSE	
	F	G	F	G
E/C	7	2	3	1
Pr	6	2	3	1
Abs	1	0	0	0
Total	4	4	4	4





# Bethel School

Gourcy, Burkina Faso





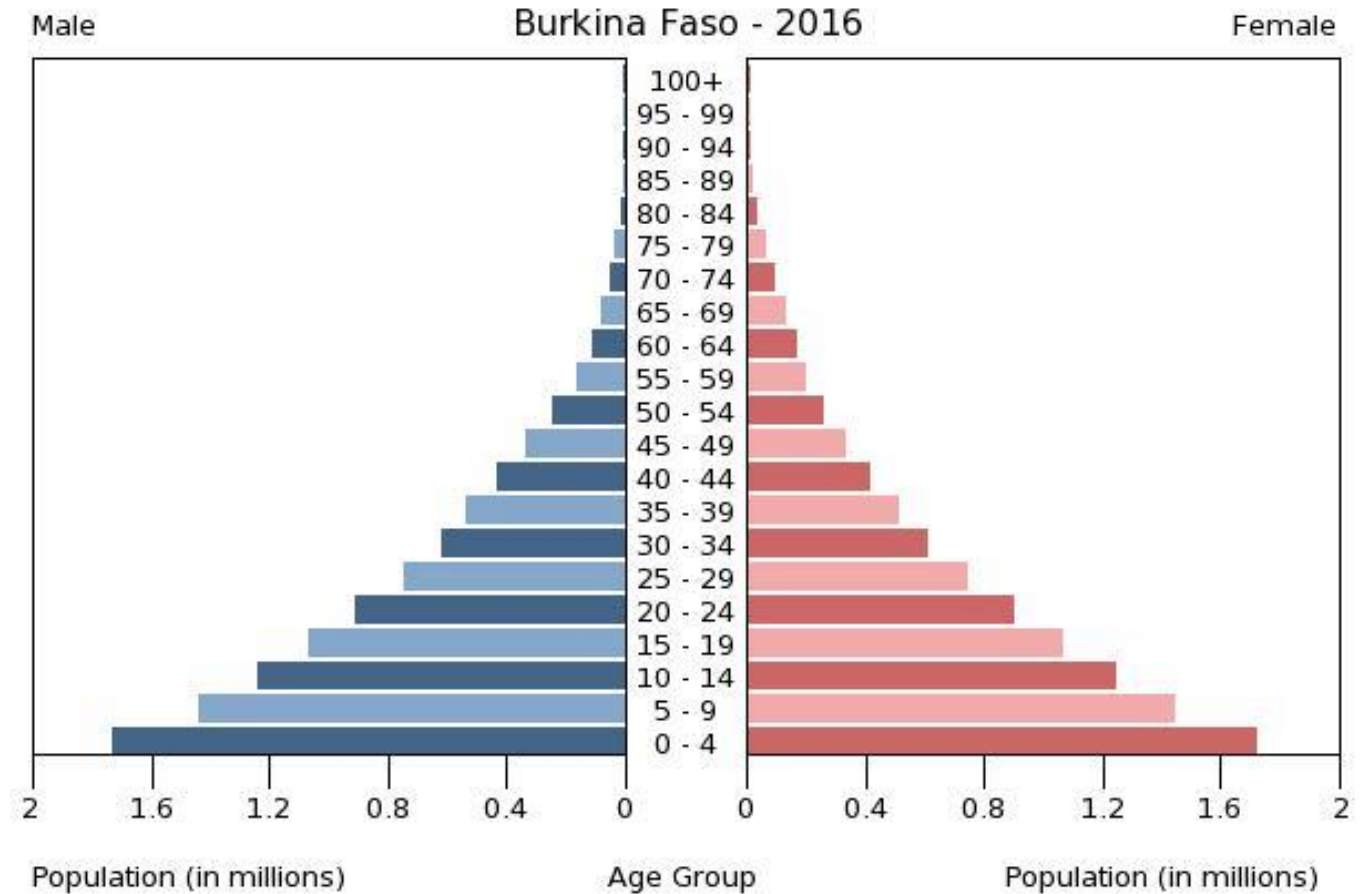
# Burkina Faso

'The Land of Upright People'

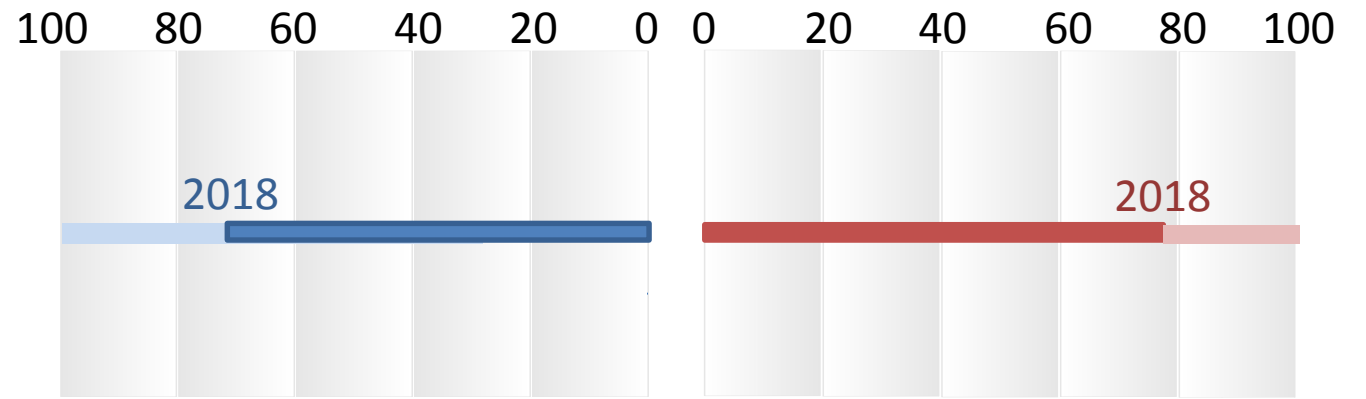




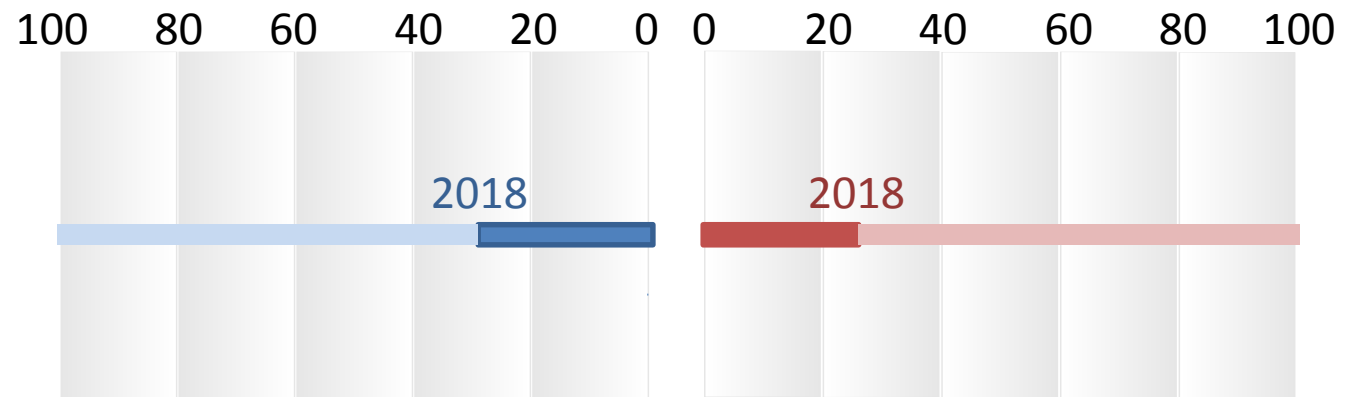
- Population: 20 million
- 64 people/ km<sup>2</sup>
- nominal per capita income \$790
- 80% working subsistence agriculture
- 43% live below poverty line
- Ave. number of years in school: 1.5







Primary School Enrolment

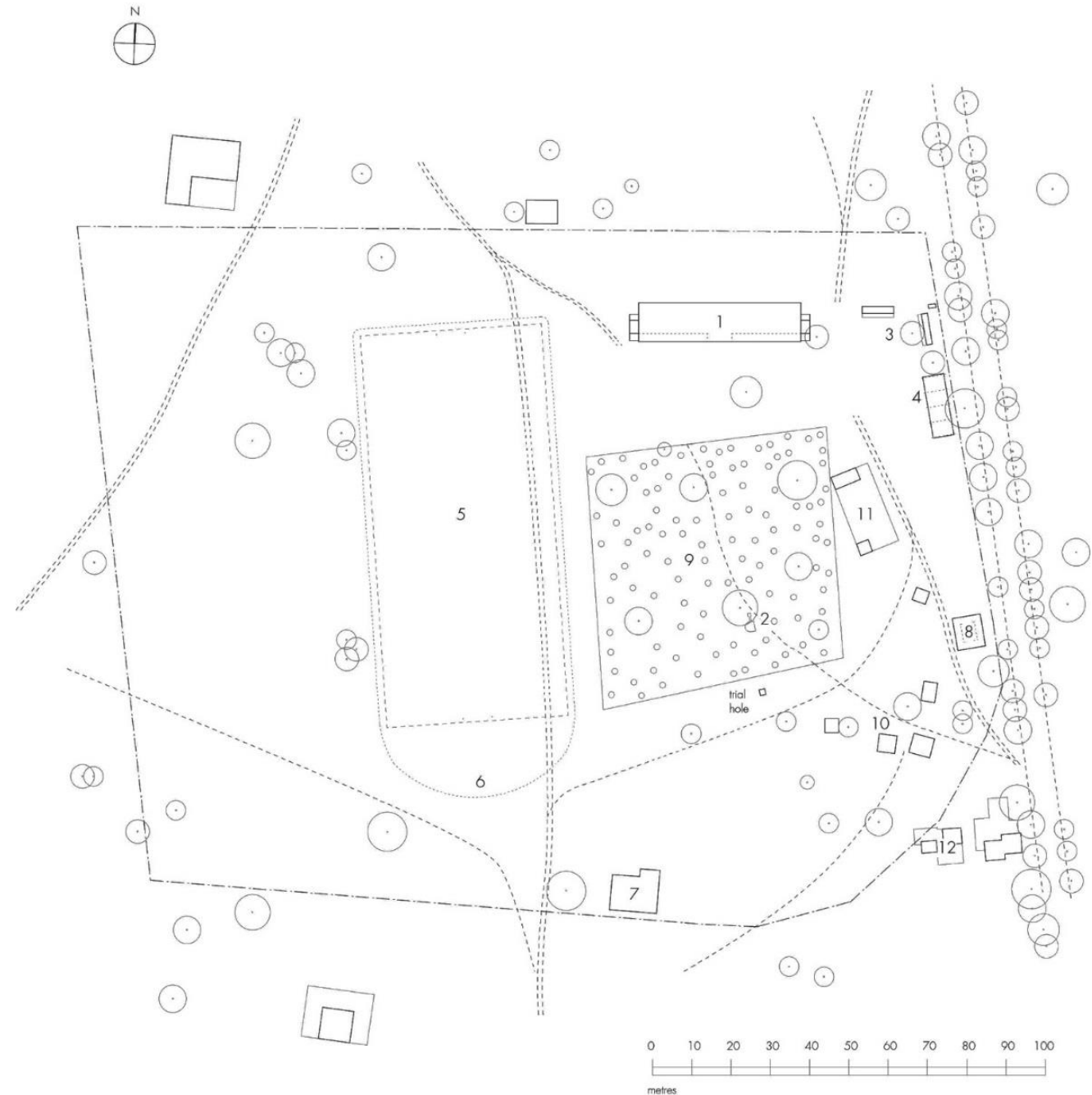


Secondary School Enrolment



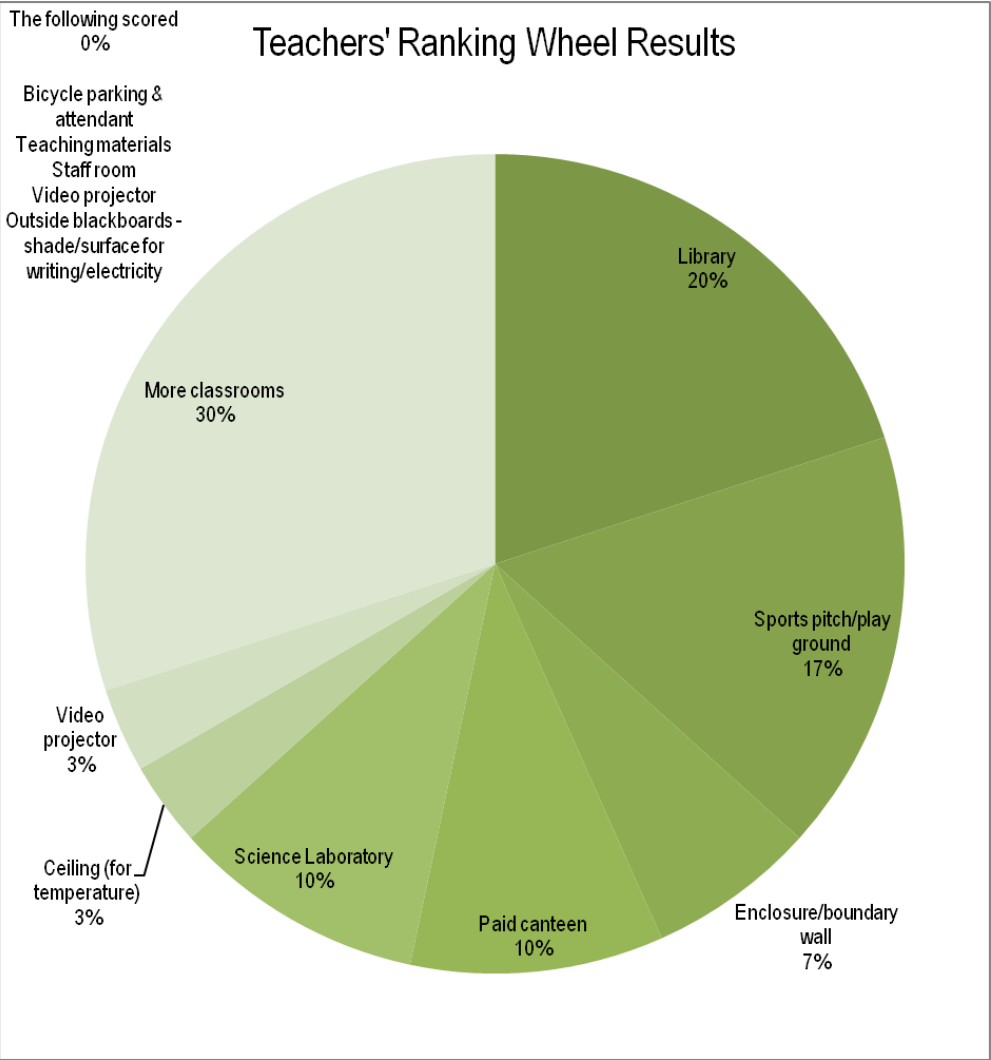
# Existing School and Site

- Not enough classrooms
- 150 children turned away in 2010
- No space for vocational teaching
- No rooms for the final two years of secondary school





# Community Workshops





# Site Analysis







Materials





Skills Audit









# Post-Occupancy Evaluation

## Zero Carbon Comfort

- What are the actual temperatures and air movement in teaching spaces?
- How do they compare to other buildings?
- How do they compare to outdoor conditions?

## Building Fabric Evaluation

- How well is are the buildings holding up?
- Does anything require repairs?
- Are there any issues for the building users or maintenance staff?





# Post-Occupancy Evaluation

## Economic and Social Impact

- Do the construction workers now have better jobs?
- Has access to higher education increased?
- Are more graduates in paid work than before the school was built?
- What types of jobs do they have?
- Has family income increased?
- Has attendance of girls increased?





# Collège Hampaté Bâ

Niamey, Niger





# Education in Niger

- Niger is 187<sup>th</sup> (out of 187) in the UN Development Index
- Fewer than 10% of students enroll in secondary education
- Literacy rate = 15%
- Birth rate = 7.24 children







A model school for the Sahel





October 2019 – Kollo laterite quarry, Niger



# Embodied Energy of Masonry

Earth  
Block



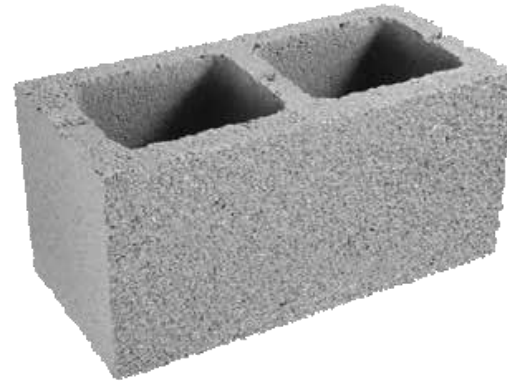
0.42  
MJ/kg

Fired  
Brick



2.5  
MJ/kg

Concrete  
Block



0.94  
MJ/kg

Laterite  
Block



0.0  
MJ/kg















# Vocational Training







THANK YOU!

[www.article-25.org](http://www.article-25.org)

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