



SCHOOL DESIGN

Ugandan addendum

Peter Clegg and Meg Collin of the Feilden Foundation



SCHOOL DESIGN IN UGANDA

Education in Uganda is structured into three main levels: primary, secondary, and tertiary. The government introduced Universal Primary Education (UPE) in 1997 and Universal Secondary Education (USE) in 2007, making education more accessible to children across the country. Primary education lasts for seven years, after which students take the Primary Leaving Examinations (PLE). Secondary education is divided into two stages: the Ordinary Level (O-Level), which lasts four years, and the Advanced Level (A-Level), which lasts two years. Many schools offer vocational courses at an equivalent level to secondary.

Uganda faces challenges in education, such as overcrowded classrooms, a lack of resources, and disparities in access between urban and rural areas. Despite these challenges, the government, through the Ministry of Education and Sports, continues to work on improving educational quality and equity. Private schools also play a significant role in supplementing public education, especially in urban areas.

References:

- » Uganda Vision 2040 (npa.go.ug/uganda-vision-2040/)

UGANDA'S VISION 2040

With almost half the population under 16, Uganda faces significant challenges to providing education to growing numbers of children. To address this, it launched a secondary school construction programme and is introducing a new curriculum based on active teaching and learning.

In 2013, Uganda released its vision 2040 including to 'accelerate government reforms in the education system and the curriculum to obtain a globally competitive human resource with skills relevant to the development paradigm.' The document recognises that barriers to Uganda's development include low competitiveness on the global stage and inadequate human resources due to low standards of education. At the same time, the population is very young (nearly half under 16) and the birth rate remains high at 6.7 children per woman, putting pressure on the education system. It is estimated that population growth will slow down, but that the population may have doubled by 2040.

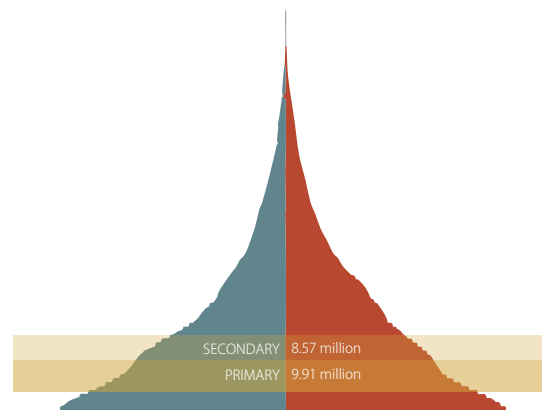
Educational targets laid out include:

- » Government-built centres of excellence in education, including workshops, science and IT labs.
- » ICT being main streamed in education, taking advantage of ICT-enabled learning and to ensure future generations are skilled in ICT.
- » Improve the retention rate of girls in education.

- » Government investment into the education sector, especially in science, technology, engineering and innovation (STEI) and research and development.
- » Increase the primary completion rate (from 53% boys and 46% girls in 2006).

Alongside this, a new secondary curriculum for the first four years of senior school began to be rolled out in 2020, co-developed by the Belgian Development Agency Enabel. These updates are the first significant changes since the colonial education system was introduced and aims to produce graduates with skills useful for the labour market. The curriculum focusses on 'active teaching and learning' with more emphasis on group work, personal research projects and practical skills.

This will shape the design of schools to include ICT provision, science labs, group and personal study areas and practical workshops. Schools will need to have adaptability and flexibility in their facilities to ensure that they can meet the needs of teachers and students.



Uganda maintains a high birth-rate, meaning that it's school age population is growing each year, increasing the demand for learning spaces.



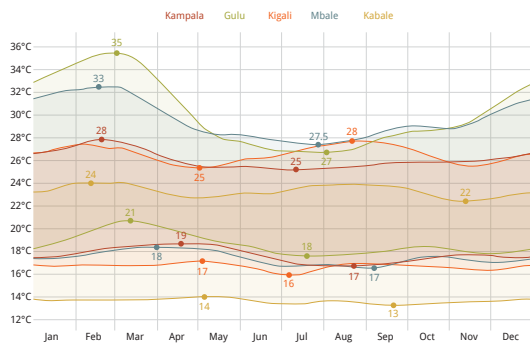
Uganda spans many biomes, from savannah to tropical rainforest. It borders the Democratic Republic of Congo, Rwanda, Tanzania, Kenya and South Sudan.

CLIMATE

Uganda has a tropical climate, characterised by warm temperatures and two distinct rainy seasons.

Located near the equator, the country experiences minimal variation in temperature throughout the year, with average temperatures ranging from 16°C to 28°C (60°F to 82°F). The warmest regions are in the north, while higher-altitude areas, such as the Rwenzori Mountains, are cooler. Rainfall patterns are influenced by altitude and geography, with the central and southern regions, including Kampala, receiving more rain than the northern areas. The main rainy seasons occur from March to May and September to November, with April being the wettest month. Dry seasons, from December to February and June to August, experience reduced rainfall but remain relatively humid.

Uganda's proximity to large water bodies like Lake Victoria and the Nile River moderates its climate, contributing to the lush, green landscapes seen in many parts of the country. However, climate change has begun to affect weather patterns in Uganda, with increasing variability in rainfall and more frequent extreme weather events such as floods and droughts, posing challenges to agriculture and water availability.



Typical temperature ranges for cities in Uganda. Further regional climate data can be found at weatherspark.com

BARRIERS TO EDUCATION

With only half of Ugandan children completing primary school, there are many barriers to education.

These barriers may be financial, social or geographical.

Unfortunately, no school in Uganda is free to attend. Due to limited government funding, students generally pay a fee to primary education to cover maintenance, equipment, support staff, uniform and food. As such, some families cannot afford to send all their children to school and some may stay at home and work. The cost of secondary education is typically much higher, with many students aspiring to go to boarding school.

Social situations, such as early pregnancy or family pressure, may make it hard for children, especially girls, to stay in schools. For those in rural areas, the distance to travel to school may make it impractical or dangerous for students to attend.

The Ministry of Education and Sports (MOES) alongside NGOs is seeking to remove and mitigate these barriers through policies and programmes, but there is a long way to go.



School buildings in rural areas may be very rudimentary, due to lack of resources.

REGULATION

There are various regulatory bodies with jurisdiction over construction and education in Uganda. The appropriate permissions must be sought from them.

Ministry of Education and Sports (MoES): MoES is responsible for formulating policies, setting standards, and overseeing the overall education system in Uganda for both public and private schools.

Uganda National Examinations Board (UNEB): UNEB is responsible for regulating and conducting national examinations in Uganda,
National Curriculum Development Centre (NCDC): NCDC develops and reviews the national curriculum for primary, secondary, and tertiary education.

Education Standards Agency (ESA): A department within the MoES, the ESA is responsible for inspecting schools, ensuring they meet the required standards for teaching, infrastructure, and overall educational quality.

National Building Review Board (NBRB): The NBRB oversees the enforcement of building regulations and standards across the country, including: reviewing building plans, issuing permits, and ensuring adherence to safety standards.

Ministry of Works and Transport (MoWT): This ministry is responsible for setting policies and regulations for construction, particularly in infrastructure projects such as roads, bridges, and public buildings.

Uganda National Bureau of Standards (UNBS): UNBS ensures that construction materials and products used in Uganda meet set standards for quality and safety.

Local Government Authorities: Local district and municipal councils are responsible for approving building plans, issuing construction permits, and inspecting buildings to ensure compliance with national and local regulations.

NATIONAL STANDARDS - UGANDA

The following pages outline and collate the key national design standards for schools design. The requirements given are not exhaustive, and the original guidance documents should be used for detail design and permit drawings. The following list aims to show the minimum government standards for spatial measures, as they relate to the guidance in the main document.

Where national standards differ, the most conservative figures have been used.

XX denotes page reference to the guide

DOCUMENT REFERENCES:

Basic Requirements and Minimum Standards Indicators for Education Institutions (2009)

National Building Code (2019)
referred to as NBC (2019)

National Physical Planning Standards and Guidelines (2011)
referred to as NPPSG (2011)

Uganda National Action on Physical Disability (UNAPD) Accessibility Standards (2010)

Uganda National Examinations Board (UNEB), Minimum criteria to be fulfilled by institutions applying for a new examination centre

SITE AREAS

These areas are taken from the NPPSG and may vary depending on if a schools is urban or rural.

NPPSG (2011) Primary school areas.

	Single-stream (day)	Single-stream (boarding)	Double-stream (day)	Double-stream (boarding)
CLASSROOMS, HALL, ADMIN ETC.	1.0 ha	1.0 ha	2.0 ha	2.0 ha
PLAYING FIELDS, EXTERNAL AREA	1.5 ha	1.5 ha	1.5 ha	1.5 ha
DORMITORIES		0.4 ha		0.4 ha
STAFF ACCOM.		0.8 ha		0.8 ha
TOTAL PLOT AREA	2.5 ha	3.7 ha	3.5 ha	4.7 ha

Add 0.4-0.5ha for a school garden

NPPSG (2011) Secondary school areas.

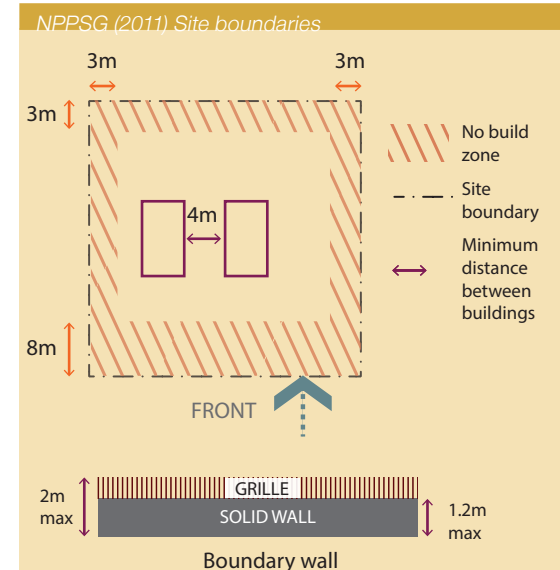
NO. OF PUPILS	Double-stream (day)	Double-stream (boarding)	Triple-stream (day)	Triple-stream (boarding)
CLASSROOMS, HALL, ADMIN ETC.	2.0 ha	1.0 ha	3.0 ha	2.0 ha
PLAYING FIELDS, EXTERNAL AREA	1.5 ha	1.5 ha	1.5 ha	1.5 ha
DORMITORIES		0.8 ha		1.2 ha
STAFF ACCOM.		1 ha		1 ha
TOTAL PLOT AREA	3.5 ha	3.7 ha	4.5 ha	4.7 ha

Add 10% for agricultural land, where the school teaches agriculture.

If there is not enough land (due to space or topography) for sports facilities, these can be shared between schools.

SITE REQUIREMENTS

Schools must be a safe and secure environment, located where students can safely access them.



Security:

Schools should have controlled access to the premises and should ensure security within.

Fire safety:

All buildings must be fitted with a lightning conductor

Accessibility:

School campuses should be designed to meet the UNAPD accessible design standards.

Play:

There should be an open space adjacent to the school of sufficient size for all learners to play.

See 20 - 27 for guidance on site planning

See 35 for guidance on security and 32 for accessibility

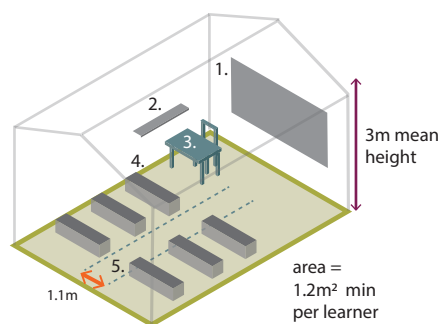
CLASSROOMS

Classrooms should provide a comfortable environment conducive to learning.

Standard classroom sizes:

$$5.8 \times 8.8\text{m} = 51.04\text{m}^2$$

$$5.8 \times 7.8\text{m} = 45.24\text{m}^2$$



1. Chalk board
2. Storage shelf
3. Teacher's desk and chair
4. Seat/bench for students
5. Aisle

UNEB requirements

- » A lockable hall that can seat at least 50 students at individual desks 1.2m apart.
- » OR a classroom that can seat 35 students at desks 1.2m apart.
- » Two science laboratories minimum 52m² that can seat at least 40 students.
- » A computer room with at least 5 computers and 2 printers.

See [46](#) for guidance on classrooms
[62](#) for science laboratories

REQUIRED SPACES

A school requires many ancillary spaces in order to function well.

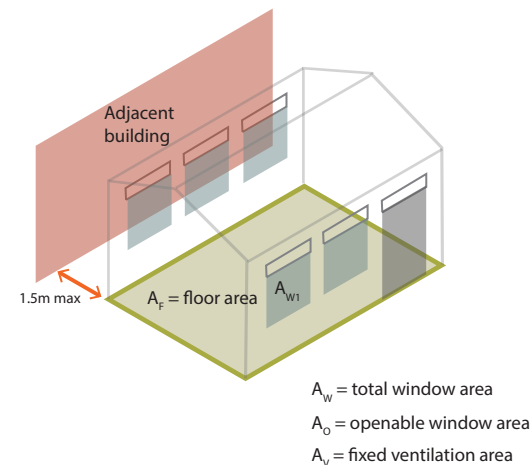
The following spaces should be included in a school (where appropriate to type):

- » A head of institution's office
- » A staffroom
- » A general store
- » A kitchen (where necessary)
- » Ramps for easy access
- » A class/lecture room for every group taught
- » A library (a reading corner for primary)
- » A laboratory/ multi-purpose science room (not for primary)
- » A workshop for each business, technical and vocational course (business, technical and vocational institutions)
- » A typing/computer room (business institutions)
- » A book store
- » A head of institution's house within the compound
- » Resting place for pupils (pre-primary and primary)
- » A provision for the storage of instructional materials

See [26](#) for guidance on space planning for primary and secondary schools

WINDOWS AND VENTILATION

Natural lighting and ventilation reduce energy usage and improve internal conditions for staff and students.



$$A_w = 0.1 \times A_f$$

$$A_o + A_v = 0.05 \times A_f$$

A_v reduces by 10% if protected by rods and grilles

General principles

- » Every room should be well-ventilated

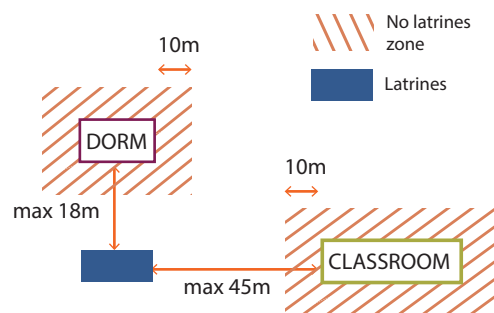
See [33](#) for guidance on natural lighting

WASH FACILITIES

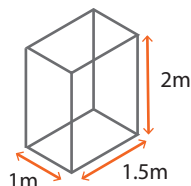
NBC specifies that latrines should adhere to the NBC Mechanical installations in buildings guidance.

General principles

- » Separate latrines are required for each gender of pupils and for each gender of staff
- » Latrines must ensure privacy, entrances to female latrines should be screened from males
- » Accessible latrines should also be provided.



Minimum size for a standard latrine



RATIO TO NUMBER USERS			
	Ratio	Urinals	Notes
BOARDING STUDENTS			
GIRLS	1:15	-	
BOYS	1:15	1:25	1
DAY STUDENTS			
GIRLS	1:25	-	2
BOYS	1:25	1:25	1, 2
STAFF			
FEMALE	1:15	-	
MALE	1:15	1:25	1
TOTAL			

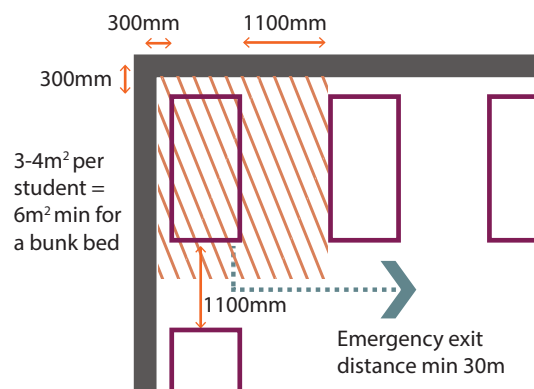
See 128 for guidance on latrines

DORMITORIES

Boarding facilities must provide a safe, secure and sanitary place for students to sleep, wash and eat.

General principles:

- » Separate accommodation for each sex and age group
- » Only single and double decker (bunk) beds to be used. Children must not sleep on the floor.
- » Beds and dormitory materials should allow for easy disinfection.
- » Floors are to be impervious and able to be regularly cleaned.
- » Two emergency exits for each dormitory and a fire protection system are required.
- » Dorms must have secure fencing and adequate lighting.



Minimum spatial standards for dormitories.

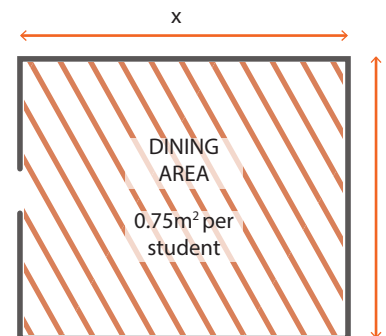
See 68 for guidance on dormitories

ANCILLARY DORMITORY FACILITIES

Intro text

General principles:

- » Each dormitory should have secure, sufficient and accessible routes to latrines and bathing.
- » Laundry and drying areas are required.
- » Dining space should be provided, as per spatial requirements below. This should not be adjacent to the dorm (unless well-ventilated)
- » The kitchen should be of 'suitable size, type and construction' with utensils drying rack and food storage



$$\text{Total area} = a \times b$$

$$\text{Max students} = \frac{\text{area (in m)}}{0.75}$$

Water supply:

- » There should be enough water for all users to wash, bathe and clean.
- » There should be a sufficient supply of safe drinking water. If this is not piped. It should be stored in an accessible, clean and uncontaminated tank.

See 56 for guidance on dining areas