DRAFT BASIC ASSESSMENT REPORT FOR THE PROPOSED CONSTRUCTION OF MUSA SPECIAL SCHOOL ON REMAINDER OF PORTION 13 OF THE FARM RESERVE NO. 12 OF 15832, NONGOMA LOCAL MUNICIPALITY, KWAZULU-NATAL

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Prepared by VUKANIH CONSULTANTS AND CONTRACTORS CONSULTANTS

	**THE PROPOSED CONSTRUCTION OF MUSA SPECIAL SCHOOL ON REMAINDER OF PORTION 13 OF THE FARM RESERVE NO. 12 OF 15832, NONGOMA LOCAL MUNICIPALITY, KWAZULU-NATAL**
Date:	
Report Status:	DRAFT BAR
Author:	Vukani Ngwabi

KEY DETAILS

Name and Contact Details of the EAP

Name of EAP	SA SHEQ CONSULTANTS
Physical Address	27 Ngcobo Street, Klaarwater
Postal Code	3609
EAP Representative Contact	Vukani Ngwabi
Telephone	073 3685 731
Email	vukani@vukanih.co.za
Qualifications of EAP representative	BSocSci (Honours) Geography and Environmental Management (10 years experience)

Name and Contact Details of the Applicant

Name of Applicant	**Department of Education**
Physical Address	**15 Scott street, Bowden House, Pietermaritzburg**
Postal Code	**3201**
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SECTION 1: INTRODUCTION

SA SHEQ Consultants have been appointed by **Econocom Consulting Engineers & Project Managers** on behalf of department of Education, to undertake the Basic Assessment process for the proposed construction of Musa Special School, Nongoma municipality, KwaZulu-Natal

As per GNR 982 of the Environmental Impact Assessment (EIA) Regulations (2014, as amended), a Basic Assessment (BA) process must be undertaken in such a manner that the environmental outcomes, impacts and residual risks of the proposed Listed Activities being applied for are noted in the BA report and assessed accordingly by the Environmental Assessment Practitioner (EAP). **In this regard, the requirements of the BA process are noted in the EIA Regulations, 2014 (as amended), Listing Notice 1.**

SECTION 2: DETAILS OF THE EAP AND APPLICANT

2.1 DETAILS OF THE ENVIRONMENTAL ASSESSMENT PRACTITIONER (EAP)

The following table **(Table 2)** contains details of the qualified EAPs from Vukanih Consultants and Contractors involved in undertaking the BA process. The Curriculum Vitae (CV) of the relevant EAPs is attached as Appendix H of this report.

Table 1: Name and Contact Details of EAP

Name of EAP	SA SHEQ CONSULTANTS
Postal Address	P.O Box 52143 Berea Road Durban
Postal Code	4007
EAP Representative Contact	Vukani Ngwabi
Telephone	073 3685 731
Email	vukani@vukanih.co.za

Table 2: Names and Expertise of the EAP who prepared this Report

EAP	Qualifications	Experience (Yrs.)
Mr Vukani Ngwabi	-**BSocSci (Honours) Geography and Environmental Management** **EAPASA- 2019/1111**	10

The Curriculum Vitae (CV) of the relevant EAP is attached as Appendix H of this report. The signed Declaration by the EAP is attached in Appendix H.

1.2 DETAILS OF APPLICANT

Table 3: Name and Contact Details of the Applicant

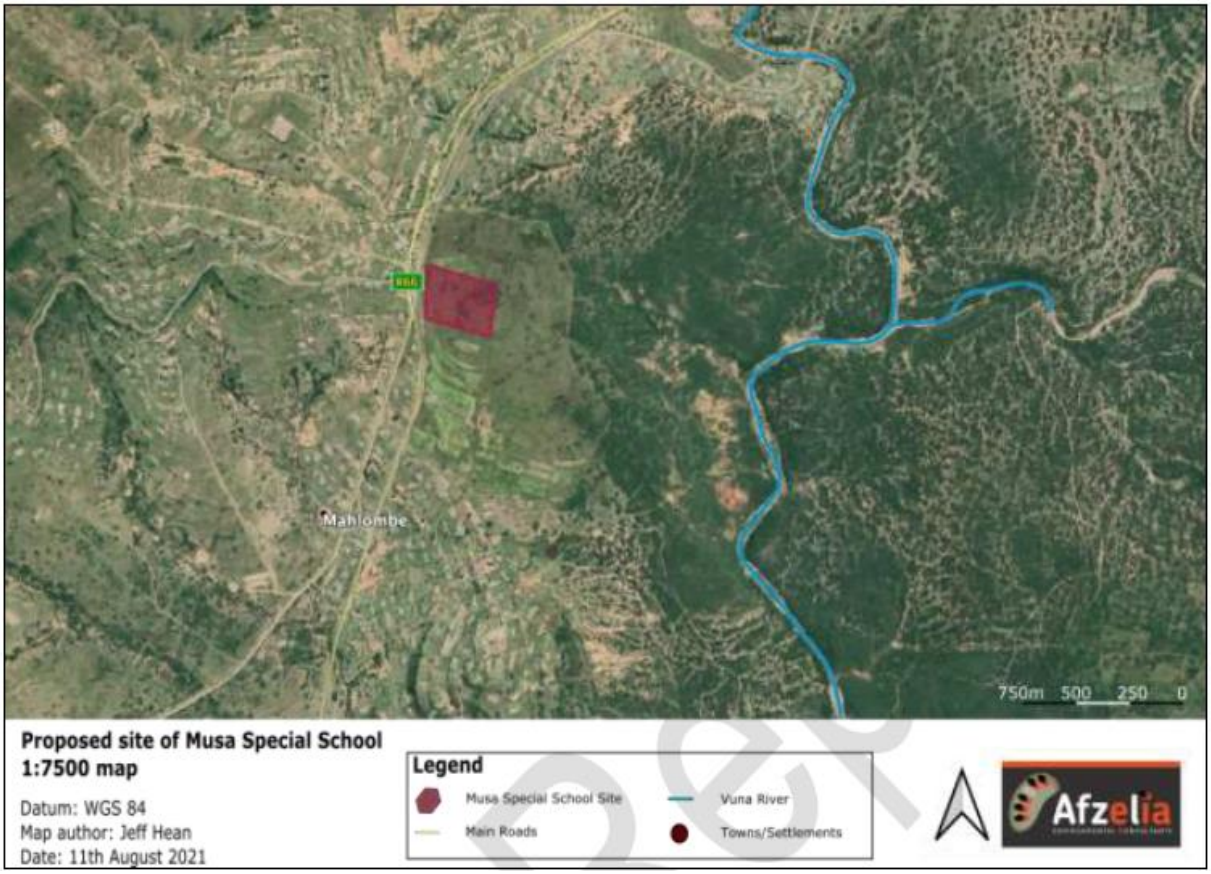
Name of Applicant	**Department of Education**
Physical Address	**15 Scott Street, Bowden House, Pietermaritzburg**
Postal Code	**3201**
Contact	
Telephone	
Fax	
Email	

SECTION 3: LOCATION OF THE ACTIVITY

3.1 LOCATION

The proposed site of the Musa Special School is located adjacent to the R66 road near the settlement of Mahlombe in ward 14, approximately 15km South from the town of Nongoma, in Northern KwaZulu-Natal. The total size of the site allocated for the project is approximately 5ha in extent.

Figure 1: Locality (refer to appendix A for maps)



3.2 PROPERTY DETAILS

The property details (physical addresses, cadastral details and farm names), as well as the 21-digit Surveyor-General codes for the properties are listed in the table below:

Table 4: Property Details

No	Farm Name	Farm/ Erf No	Portion	Latitude	Longitude	Property Type
1	RESERVE NO 12	15832	0	27°54'16.14S	31°44'51.22E	Farm
2	RESERVE NO 12	15832	13	27°55'35.44S	31°34'14.06E	Farm Portion

Farm Name	21-digit Surveyor-General
EDENDALE CC	N0FT04920000221800000

3.3 COORDINATES

Coordinates of centre points of the project locations are found in **Table 8** below:

Table 5: Coordinates

Latitude /Longitude	Degrees	Minutes	Seconds
South	28	00	17.80
East	31	35	42.40

SECTION 4: ACTIVITY DESCRIPTION

This construction project will involve the clearance of indigenous vegetation of 4.9 hectares.

4.1 Project description

The scope of work for this project is to build a New School for leaners with disabilities. Sustainable design to be adopted in the material selection and embracing the natural environment to minimise maintenance.

The sequence of site planning and layout is:

- Administration block & School Reception
- Learner Areas
- Feeding Hall and Services
- Outdoor Amphitheatre
- Common Ablutions
- Grounds
- Dormitories and Services
- Visitor and staff parking bays

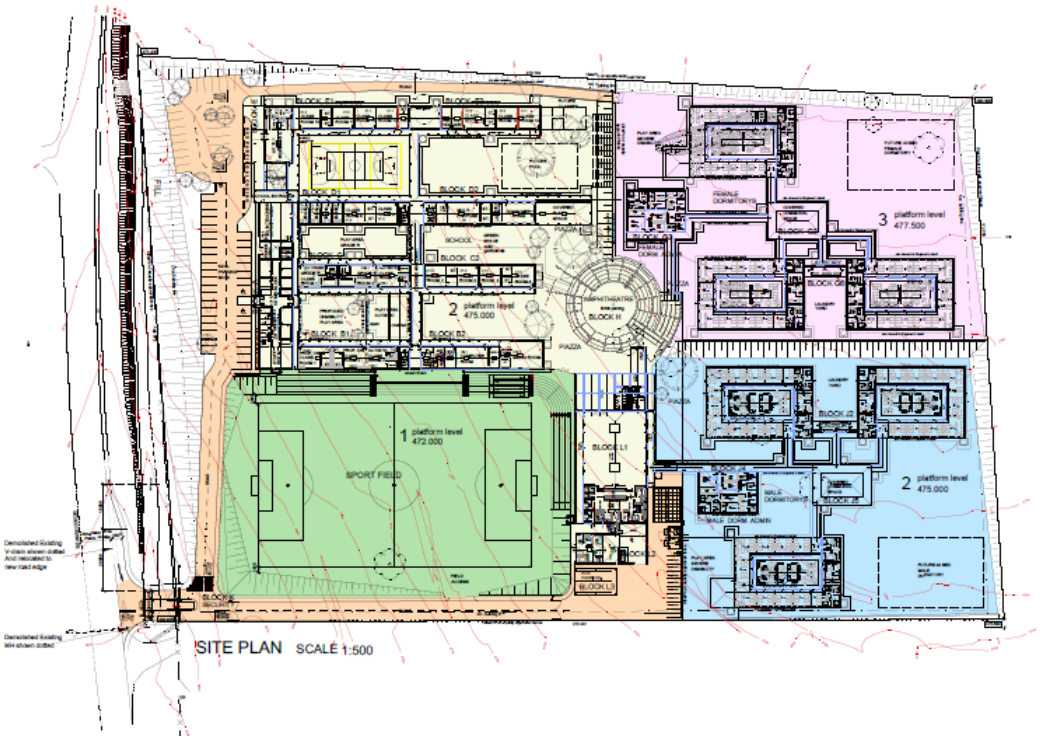


Figure 2: Layout Plan

DESCRIPTION		INITIAL TOTAL	Notes	FINAL TOTAL
LEARNERS AREAS	Classrooms = 14 Grade R = 2 Autistic = 2 Prof. Disable = 2	20	20 classrooms as per the Brief. 1 classroom converted to 2 x Therapy Suites.	19
	3 x Multipurpose + Storerooms	3	Consumer/Multipurpose (Woodwork)	2
	Workshops + Storerooms	0	Woodwork (in lieu of 1 x Multipurpose)	1
	Therapy Suite	2	Revised to 4 no. as per DOE	4
	Media Centre	1		
	Computer Rooms + Storerooms	1		1
	Activity Room	1	Team Teaching	1
	Add Medical	2	Add Stoma Rooms (as per DOE)	2

DESCRIPTION	INITIAL TOTAL	Notes	FINAL TOTAL

ADMINISTRATION & SUPPORT SPACES				
ADMINISTRATION BLOCK	Principals' Office	1	Y	1
	Deputy Principals Office	1	y	1
	Consulting Room	1	y	1
	General Office	1	y	1
	Staffroom & Kitchenette	1	y	1
	Strongroom	1	& Stock	1
	Stationary / General Store	1	y	1
	Printing Room	1	& Records	1
	Sick Room (Male & Female)	1	2 x 5.1m² + Nurses Station	1
	Entrance Hall	1	& Waiting	1
	Office		Added as per Standard Admin Block	1
	Office outside Admin Block (HOD)	3		3
	Small Storerooms outside Admin	3		3
	Large Storerooms outside Admin	1		1
	Garden Stores & Changerooms	1		1
	Guardhouse	1		1
SCHOOL NUTRITION PROGRAMME				
	Tuckshop	1		1
SANITATION				
	Girls Toilets	1+4	Small + Normal	SANS 10400
	Girls Disabled Toilet & Washroom	1		
	Boys Toilets	1+2+2	Small + normal + Urinal	
	Boys Disabled Toilet & Washroom	1		
	Teacher Seat	6	Admin block	

DESCRIPTION		**BRIEF SCOPE**	**DESIGN SCOPE**	**NOTES**
BOYS' DORMITORY	No. Of Boys' Bed spaces	100	120	3 Dorms (40x3)
	TV Room	1	3	3 Dorms x3
	Games Room	1	3	3 Dorms x3
	Boys Daily Duty Room	1	3	3 Dorms x3
	Boys Duty Room Cubicle	2	3	3 Dorms x3
	Boys' Sickbay - Bed spaces	3	3	Separate Admin Block
	Boys' Sickbay - Toilet & Shower	1	1	Separate Admin Block
	Boys Dispensary (DOE – Add Consulting /Examination & Waiting)	1	1	Separate Admin Block
	Boys Baths	4	2	SANS 10400 (x 3 Dorms)
	Boys' Showers	4	5 (+D)	SANS 10400 (x 3 Dorms)
	Boys' WC	4	4 (+D)	SANS 10400 (x 3 Dorms)

	Boys' Urinal	8	6	SANS 10400 (x 3 Dorms)
	Boys' Washbasins	6	5	SANS 10400 (x 3 Dorms)
	Baggage Store	1	1	Separate Admin Block
	Tuck Store	1	1	Separate Admin Block
	Linen Store	1	1	Separate Admin Block
	Cleaning Room	1	1	Separate Admin Block
	Matrons Flat (1 x Bedroom)	1	1	Separate Admin Block
	House Fathers Flat (2bed/liv/kitchen)	1	1	Separate Admin Block
	Duty Teachers Bedsitter	4	2bedx3	3 Dorms x3
	Common Room with Kitchenette	1	1	For Duty Teachers Rm

DESCRIPTION		**BRIEF SCOPE**	**DESIGN SCOPE**	**NOTES**
GIRLS' DORMITORY	No. Of Girls Bed spaces	100	120	3 Dorms (40x3)
	TV Room	1	3	3 Dorms x3
	Games Room	1	3	3 Dorms x3
	Girls' Daily Duty Room	1	3	3 Dorms x3
	Girls' Duty Room Cubicle	2	3	3 Dorms x3
	Girls' Sickbay - Bed spaces	3	3	Separate Admin Block
	Girls' Sickbay Toilet & Shower	1	1	Separate Admin Block
	Girls 'Dispensary (DOE – Add Consulting /Examination & Waiting)	1	1	Separate Admin Block
	Girls' Baths	2	2	SANS 10400 (x 3 Dorms)
	Girls' Showers	8		SANS 10400 (x 3 Dorms)
	Girls' WC	14		SANS 10400 (x 3 Dorms)
	Girls' Washbasins	10		SANS 10400 (x 3 Dorms)
	Baggage Store	1	1	Separate Admin Block
	Tuck Store	1	1	Separate Admin Block
	Linen Store	1	1	Separate Admin Block
	Cleaning Room	1	1	Separate Admin Block
	Matrons Flat (1 x Bedroom)	1	1	Separate Admin Block
	House Mothers Flat (2bed/liv/kitchen)	1	1	Separate Admin Block
	Duty Teachers Bedsitter	4	2bedx3	3 Dorms x3
	Common Room with Kitchenette	1	1	For Duty Teachers Rm

DESCRIPTION		**Rooms**	**No. off**	**Notes**
KITCHEN AND	**Admin**	Office	1	Yes
	Cooking Area	Oven	1	Yes
		Steamer	1	Yes

		Large Pot	1	Yes
		Small Pot	1	Yes
	Prep Area	Meat	1	Yes
		Fish	1	Yes
		Vegetable	1	Yes
		Dry/Mixing	1	Yes
	Storage	Utensils	1	Yes (Equipment Store)
		Equipment	1	Yes
		Meat	1	Yes
		Dairy	1	Yes
		Vegetable	1	Yes
		General	1	Yes
		Cleaning	1	Yes
	Scullery	Crockery	1	Yes
		Pots	1	Yes
	Refuse		1	Yes (9 bins in a drained bunded area)
	Dining Area	Serving Area	1	Yes
		Seating	300	Yes
		Cubicles	3	Food Service Aid Cubicles
LAUNDRY	Sorting (dirty)			Yes
	Sluice			Yes
	Washing			Yes
	Drying			Yes
	Ironing			Yes
	Sorting (clean)			Combined
	Storage			Yes. Clean Laundry Added

No significant or controlled emissions to the atmosphere are expected for this project. However, dust entrainment will occur during windy conditions and from vehicles travelling along the adjacent gravel road and is expected to be low to moderate.

The existing informal access is expected to be used to access the site.

No waste other than normal sewage will be generated by the project. Waste will be disposed at a legal land fill authorised to accept such waste.

No hazardous waste is expected on site, apart from chemicals and hydrocarbons. Waste will be disposed at a legal land fill authorised to accept such hazardous waste.

Solid waste generated on site will include refuse, concrete chunks and excess spoil. Where such waste cannot be re-used or recycled, these will be disposed of at a registered landfill site authorised to accept such waste.

No waste permits will be required for the proposed project.

Low-moderate noise levels arising from construction related activity is expected, which will be temporary.

The activity will require water for cement mixing and consumption during construction. The contractor must obtain water from a municipal or private source.

Construction will be confined to daylight hours and generators will be used where feasible as an alternative energy source.

4.2 Phases of Development

4.2.1 The Planning and Design Phase

This EIA phase comprises the planning and design phase, together with all investigative and preliminary studies.

Overall Goal for Planning and Design is to undertake the planning and design phase of the development in a way that:

• Ensures that the design of the plant responds to the identified environmental constraints and opportunities.

• Ensures that the best environmental options are selected for all components of the project and provides mitigation and contingency plans.

4.4.1.2 The Construction Phase

The construction phase involves actual construction of the project. The EMPr is to be implemented during this phase. The bulk of the impacts during this phase will have immediate effect (e.g. noise and dust). If the site is monitored on a continual basis during the construction phase, it is possible to identify these impacts as they occur. These impacts will then be mitigated through the contingency plans identified in the planning phase, together with a commitment to sound environmental management from the Applicant.

4.2.3 The Post Construction and Rehabilitation Phase

This phase will involve restoring the land impacted during the construction phase back to its original state, if not possible to a state that conforms to the principles of sustainable development. This process will mainly on rectifying the negative impacts that have been caused during construction by the removing pollution or contaminants and other dangerous substances, removal of contaminating waste material, removal of alien plant species and improvement of the soil and reestablishment of basic groundcover.

4.2.4 The Operation and Maintenance Phase

The proposed development will require maintenance work when needed throughout the operation phase. By taking pro-active measures during the planning and construction phases, potential

environmental impacts emanating during the operational phase will be minimised. This, in turn, will minimise the risk and reduce the monitoring effort, but it does not make monitoring obsolete.

SECTION 5: APPLICABLE LEGISLATION

5.1 ENVIRONMENTAL IMPACT ASSESSMENT REGULATIONS, 2014

In terms of the Environmental Impact Assessment (EIA) Regulations (2014) (as amended), promulgated in terms of the National Environmental Management Act (Act 107 of 1998) (as amended), certain Listed Activities are specified for which either a Basic Assessment (GNR 324 and GNR 327) or a Full Scoping and Environmental Impact Assessment (GNR 325) is required.

The following Listed Activities in GNR 327 (Listing Notice 1), requiring a Basic Assessment process, are applicable to the proposed Imbali Student Accommodation and Retail shops in Edendale, within Msunduzi Municipality, KwaZulu-Natal.

Table 6: EIA Listing Notices

Listing Notice	Activity No:	Listed Activity	Applicability
GN R327 – Listing Notice 1 of the EIA Regulations, 2014 (as amended)	27	The clearance of an area of 1 hectares or more, but less than 20 hectares of indigenous vegetation, except where such clearance of indigenous vegetation is required for— (i) the undertaking of a linear activity; or (ii) maintenance purposes undertaken in accordance with a maintenance management plan.	**The clearance of indigenous vegetation will be 4.9 hectares of indigenous vegetation**
GN R327 – Listing Notice 1 of the EIA Regulations, 2014 (as amended)	28	Residential, mixed, retail, commercial, industrial or institutional developments wheresuch land was used for agriculture, game farming, equestrian purposes or afforestation on or after 01 April 1998 and where such development: (i) will occur inside an urban area, where the total land to be developed is bigger than 5 hectares; or (ii) will occur outside an urban area, where the total land to be developed is bigger than 1 hectare; excluding where such land has already been developed for residential, mixed, retail, commercial, industrial or institutional purposes.	**The site extent is approximately 5ha and was previously used for ad hoc agriculture by the community.**

Based on the above proposed activities, a Basic Assessment process is required. The associated Environmental Authorisation Application form is attached to this report as Annexure H.

A flow-chart of the Basic environmental Assessment process is provided in **Figure 3** for reference purposes.

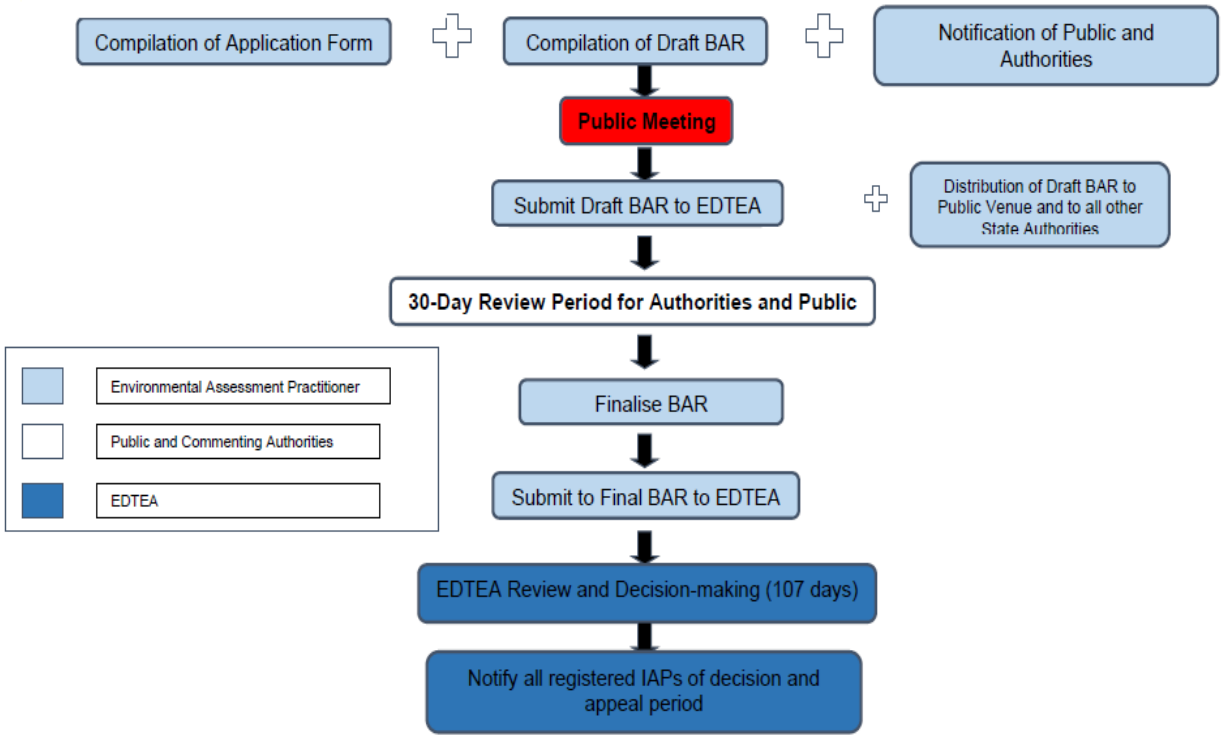


Figure 3: BA application process

A **Pre-Application Meeting** was held with **Nomthandazo Khumalo** and **Sakhile Sibiya** of the KwaZulu-Natal Department of Economic Development, Tourism and Environmental Affairs on **the 6th July 2021.** The meeting minutes thereof are attached as **Annexure H**. The purpose of the Pre-Application Meeting was to introduce the project to EDTEA and to present and confirm the relevant Listed Activities and Specialist Studies pertinent to proposed project.

5.2 FURTHER RELEVANT LEGISLATION, POLICIES AND GUIDELINES

5.2.1 THE CONSTITUTION OF THE REPUBLIC OF SOUTH AFRICA, 1996

The Constitution of the Republic of South Africa (Act No. 108 of 1996) sets the legal context of which environmental law in South Africa occurs and was formulated. All environmental aspects should be interpreted within the context of the Constitution, National Environmental Management Act (NEMA) (Act No. 107 of 1998) and the Environmental Conservation Act (Act No. 73 of 1989).

The Constitution has enhanced the status of the environment by virtue of the fact that an environmental right has been established (Section 24) and because other rights created in the Bill of Rights may impact on environmental management through, for an example, access to health care, food and water and social security (Section 27). An objective of local government is to provide a safe and healthy

environment (Section 152) and public administration must be accountable, transparent and encourage participation (Section 195(1)(e) to (g).

5.2.2 NATIONAL ENVIRONMENTAL MANAGEMENT ACT, 1998

According to Section 2(3) of the National Environmental Management Act (NEMA) (Act No. 107 of 1998), "development must be socially, environmentally and economically sustainable', which means the integration of these three factors into planning, implementation and decision-making so as to ensure that development serves present and future generations.

The proposed student accommodation and retail shops project requires authorization in terms of NEMA and the Basic Assessment (BA) process is being undertaken in accordance to the Environmental Impact Assessment (EIA) Regulations (2014) (as amended).

5.2.5 OTHER APPLICABLE LEGISLATION

The table below lists all other applicable legislation, policies and/or guidelines of any sphere of government that are relevant to the application as contemplated in the EIA Regulations (2014) (as amended).

Table 6:

Title of legislation, policy or guideline	Applicability to the project	Administering authority	Date
NEMA Biodiversity Act (10 of 2004)	Protection of any chance biodiversity features, permitting requirements.	Provincial and National	1998
National Heritage Resources act (Act 25 of 1999)	Excavations/drilling may occur which will expose substrates and possibly impact on heritage effects. Should archaeological artefacts be uncovered accidentally, then the contractor must stop work and inform Amafa, so that these may be preserved.	Provincial and National	1999
NEMA Waste Act (Act 59 of 2008 as amended)	Safe and correct, legal disposal of waste generated on site, by the generator of waste.	Provincial and National	2008
Conservation of Agricultural Resources Act (Act 43 of 1983)	The project must implement erosion controls to stabilize soil.	Provincial and National	1983
Hazardous Substances Act (Act 15 of 1973)	The contractor may be storing chemicals and fuel on site.	National and Provincial	1973
National Spatial Biodiversity Assessment (2011)	This assessment hopes to inform all private and public sector activities and provides tools for use in planning.	National (Sanbi)	2011
Construction Regulations	The contractor will construct according to these laws.	Provincial and National	2003
Occupational Health and Safety Act, as amended	The contractor will comply with all requirements of the OHSACT.	Provincial and National	1993

SECTION 6: DEVELOPMENT MOTIVATION

6.1 NEED & DESIRABILITY AND MOTIVATION FOR THE PROPOSED DEVELOPMENT

1. Is the activity permitted in terms of the property's existing land use rights?	YES	NO	Please explain
The existing land use rights will permit the construction of the school, this is a tribal area. The chief generally allocates land for specific purposes.			
2. Will the activity be in line with the following?			
(a) Provincial Spatial Development Framework (PSDF)	YES	NO	Please explain
This is an education infrastructure project, thus it can be considered to be part of the psdf, by virtue of providing educational facilities to disabled children.			
(b) Urban edge / Edge of Built environment for the area	YES	NO	Please explain
The activity is located within a rural area.			
(c) Integrated Development Plan (IDP) and Spatial Development Framework (SDF) of the Local Municipality (e.g. would the approval of this application compromise the integrity of the existing approved and credible municipal IDP and SDF?).	YES	NO	Please explain
Promotion of access to education is part of the IDP; the approval of the application will thus not compromise the IDP.			
(d) Approved Structure Plan of the Municipality	YES	NO	Please explain
The structure plan identifies education as a goal.			
(e) An Environmental Management Framework (EMF) adopted by the Department (e.g. Would the approval of this application compromise the integrity of the existing environmental management priorities for the area and if so, can it be justified in terms of sustainability considerations?)	YES	NO	Please explain
The construction of the school will not impact on the conservation priorities in the area. The site itself is quite disturbed, and will be planned along the access road.			
(f) Any other Plans (e.g. Guide Plan)	YES	NO	Please explain
n/a			
3. Is the land use (associated with the activity being applied for) considered within the timeframe intended by the existing approved SDF agreed to by the relevant environmental authority (i.e. is the proposed development in line with the projects and programmes identified as priorities within the credible IDP)?	YES	NO	Please explain
Construction of educational facilities is noted in the IDP.			
4. Does the community/area need the activity and the associated land use concerned (is it a societal priority)? (This refers to the strategic as well as local level (e.g. development is a national priority, but within a specific local context it could be inappropriate.)	YES	NO	Please explain
The community needs this educational institutional to service the disabled children.			
5. Are the necessary services with adequate capacity currently available (at the time of application), or must additional capacity be created to cater for the development? (Confirmation by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
The municipality will be providing water supply to the area, and the cost for connection will be borne by DOE. No sewage treatment works is available in the area, hence a septic tank system will be used. Letter from Zululand District Municipality is available, as well as a quote from Eskom for electricity.			

6. Is this development provided for in the infrastructure planning of the municipality, and if not what will the implication be on the infrastructure planning of the municipality (priority and placement of services and opportunity costs)? (Comment by the relevant Municipality in this regard must be attached to the final Basic Assessment Report as Appendix I.)	YES	NO	Please explain
This project has been financially budgeted for by the applicant, Department of Education. Educational facilities are a priority in the municipality.			
7. Is this project part of a national programme to address an issue of national concern or importance?	YES	NO	Please explain
Education is of national importance.			
8. Do location factors favour this land use (associated with the activity applied for) at this place? (This relates to the contextualisation of the proposed land use on this site within its broader context.)	YES	NO	Please explain
In context. The school site is positioned to serve an area in need and is conveniently located near the R66 and Nongoma.			
9. Is the development the best practicable environmental option for this land/site?	YES	NO	Please explain
In terms of socio-economic benefits, it is the best option.			
10. Will the benefits of the proposed land use/development outweigh the negative impacts of it?	YES	NO	Please explain
The positive benefits will outweigh the negative impacts in that that it will enable the educational rights of disabled children and provide employment.			
11. Will the proposed land use/development set a precedent for similar activities in the area (local municipality)?	YES	NO	Please explain .
There are other schools, though not special needs with a boarding facility, in the area, so a precedent had already been set.			
12. Will any person's rights be negatively affected by the proposed activity/ies?	YES	NO	Please explain
The project will in fact enhance rights. There is one house on the site, which will be excluded from development.			
13. Will the proposed activity/ies compromise the "urban edge" as defined by the local municipality?	YES	NO	Please explain
The activity is not located in the urban edge.			
14. Will the proposed activity/ies contribute to any of the 17 8Strategic Integrated Projects (SIPS)?	YES	NO	Please explain
This project fall within SIP13			
15. What will the benefits be to society in general and to the local communities?			Please explain
The establishment of Musa Special School will help provide needed facility for underserviced (rural) communities who would not have access to a special needs school otherwise. It would also encourage economic activity thereby creating employment opportunities. Economic benefits are expected to flow in and around the area. Short-term jobs will be created through the construction of infrastructure while more sustainable permanent jobs will be created through the operation of the centre. The proposed project will be socially sustainable and also addressing the issue of Municipalities response to service previously disadvantaged communities.			
16. Any other need and desirability considerations related to the proposed activity?			Please explain
As above			
17. How does the project fit into the National Development Plan for 2030?			Please explain

The NDP 2030 requires citizens to have access to social equity. According to the 2030 National Development Plan (NDP) Executive Summary (2013), the government must look to invest "in new infrastructure in areas that directly affect the poor, such as education." The NDP (2013) places emphasis on promoting sustainable livelihoods by ensuring "that individuals or families, irrespective of income, can access services such as quality education."
18. Please describe how the general objectives of Integrated Environmental Management as set out in section 23 of NEMA have been taken into account.
NEMA S23 general objectives have been considered as below: ▪ The affected community leaders, the general public, authorities and state departments have been engaged and consulted with in the BA process from the onset ▪ Potential environmental, cultural and socio-economic risks and impacts have been assessed and assigned significance ratings. ▪ Lodging of an application for environmental authorisation ▪ The 'Duty of Care' principle is incorporated into the EMPr. ▪ Mitigation measures incorporated into the EMPr for all potential impacts
19. Please describe how the principles of environmental management as set out in section 2 of NEMA have been taken into account.
As per no.18 above: ▪ The affected community leaders, the general public, authorities and state departments have been engaged and consulted with in the BA process from the onset ▪ Potential environmental, cultural and socio-economic risks and impacts have been assessed. ▪ Lodging of an application for environmental authorisation ▪ The 'polluter pays' principle is incorporated into the EMPr, and S24 Nema. ▪ Mitigation measures incorporated into the EMPr for all potential impacts

NEMA S23 general objectives have been considered as below:

▪ The affected community leaders, the general public, authorities and state departments have been engaged and consulted with in the BA process from the onset

▪ Potential environmental, cultural and socio-economic risks and impacts have been assessed and assigned significance ratings.

▪ Lodging of an application for environmental authorisation as required

▪ The 'Duty of Care' principle is incorporated into the EMPr.

▪ Mitigation measures incorporated into the EMPr for all potential impacts

SECTION 7: ALTERNATIVES CONSIDERED

As per GNR 326, Appendix 1 (2) (b), alternatives for the proposed development are to be identified and considered. Chapter 1 of EIA Regulations (2014) (as amended) provides an interpretation of the word 'alternatives', which is to mean, 'in relation to a proposed activity means different means of meeting the general purpose and requirements of the activity may include alternatives to the –

(a) Property on which or location where the activity is proposed to be undertaken;

(b) Type of activity to be undertaken;

(c) Design or layout of the activity

(d) Technology to be in the activity; or

(e) Operational aspects of the activity; and includes the option of not implementing the activity'

Based on the above, the following alternatives are presented for the proposed Imbali Student Accommodation and Retail Shops.

7.1 PREFERRED AND ALTERNATIVE SITE ALTERNATIVE

Preferred site alternative:

The **preferred site alternative** is located along R66, Mahlombe within Nongoma Municipality. The area has previously undergone cultivation with much of the land currently lying fallow with a thick grass layer in places and pockets of thorn bushes. The site is located near Existing Access with Bulk water supply available in the area. The site is Disturbed by settlement and agriculture. It is also of low ecological significance.

The preferred site alternative above is the most economically feasible for the Applicant and as well as for students and the community. No other alternative sites have been considered as the land was donated to the Applicant (Department of Education). This property has the capacity to support the development. The area is also ideally located close to the Nongoma town for easy commute to local residents and of low ecological significance.

7.2 PREFERRED LAYOUT ALTERNATIVE

7.2.1 Preferred Layout Alternative: Layout Alternative 1

The scope of work for this project is to build a New School for leaners with disabilities. Sustainable design to be adopted in the material selection and embracing the natural environment to minimise maintenance. The sequence of site planning and layout is:

- Administration block & School Reception
- Learner Areas
- Feeding Hall and Services
- Outdoor Amphitheatre
- Common Ablutions
- Grounds
- Dormitories and Services
- Visitor and staff parking bays

No other alternatives are available at this stage. Design alternatives are considered as per layout alternatives. With regards to the above layout alternatives **the recommended/preferred layout alternative is Alternative 1,** as it is the preferred feasible alternative which meets the need and desirability of the application, as well as take cognisance of the funds available.

7.3 PREFERRED TECHNOLOGY ALTERNATIVE

Septic Treatment plant. See Civil Engineers Report. The decontamination process results in water that can be recycled for non-potable uses.

As per client requirement, Low Maintenance is the initiative that drives this design.

- Use of face brick to reduce maintenance
- Use of Zinc/Aluminium roof sheeting to reduce maintenance and improve water quality in the Jojo tanks.
- Insulation above purlins to reduce heat loads
- Rainwater harvesting to be done
- Heat Pump - Hot Water Generation
- Natural Ventilation is considered in the design process with courtyard design
- LED and Energy Efficient lighting is being allowed for
- Verandas and awnings offer solar protection

Large scale machinery will enable the construction to proceed at a quicker and easier pace but will facilitate far fewer employment opportunities. The use of standard machinery and manual labour is therefore preferable.

7.4 NO-GO ALTERNATIVE

The project is required to provide an education facility for the special needs of students. Should the no-go alternative be selected, there will be no such education service for a very vulnerable group.

If the no-go alternative were to be pursued, the environmental, social and economic status quo would remain, and the site will remain as is, of low ecological value and used for agriculture.

New job opportunities will not be created.
There will be no opportunities for local construction suppliers and contractors to benefit from the proposed development. There will be no development of skills for construction workers.

SECTION 8: PUBLIC PARTICIPATION

To fulfil necessary public participation required as part of the Basic Assessment process, the following methods of stakeholder engagement were conducted by the EAP (refer to ANNEXURE I):

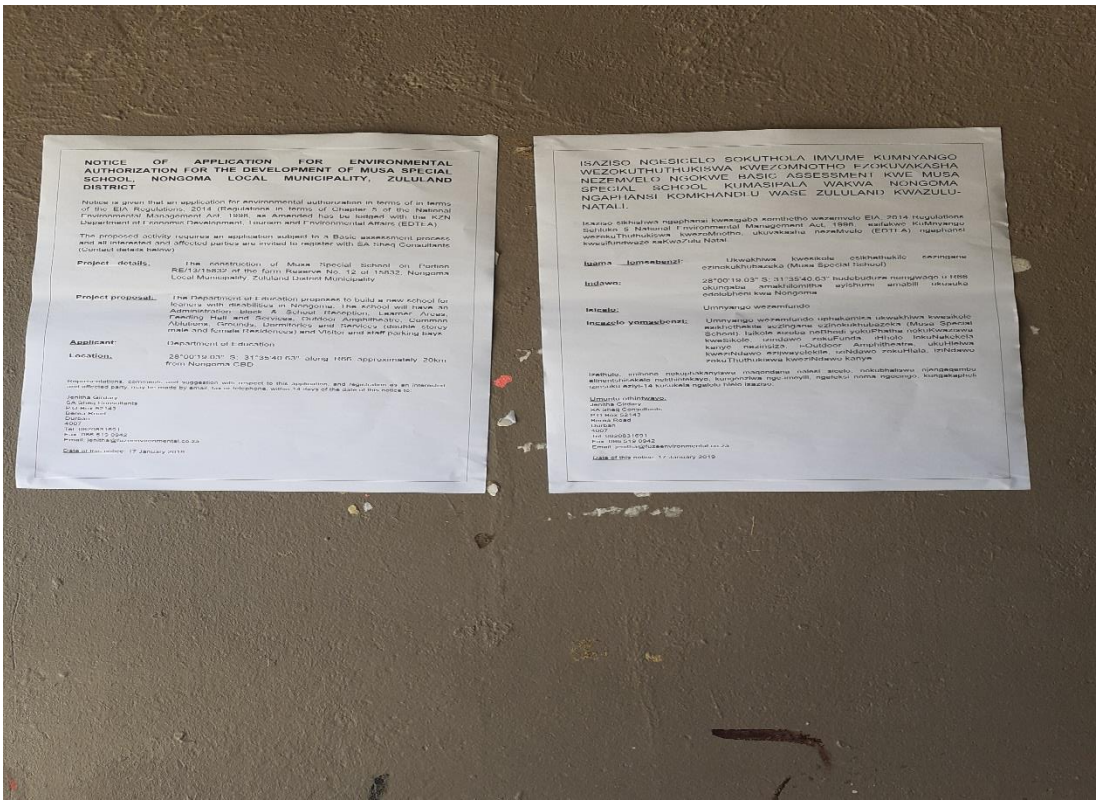
8.1 Placement of site notices

Site notices were placed at strategic places in the project area:

Site notice placed outside tribal leaderships' office

Site Notice placed outside community facility

Site notice placed at Thengeduze Tavern.



Site Notice placed at community facility

8.2 Newspaper advert

A newspaper advert was placed on the 27 January 2020 on Isolezwe:

8.3 Meeting with Induna:

To help inform the community leadership about the project and gain comments.

Figure 4: Image of the meeting at tribal leadership's office

8.4 Circulation of BID (background information document), Draft and Final Draft BAR

A BID was circulated to preidentified IAPs to garner comments. The draft BAR is circulated for minimum 30-day comment periods.

8.5 IAPS and Authorities Consulted

IAPs Consulted were:

- Department of Environmental Affairs, Forestry, and Fisheries
- Ezemvelo KZN Wildlife
- Department of Transport
- Department of Water and sanitation
- Amafa KZN
- District and Local Municipalities
- Ward councillor

8.6 Comments from IAPs on BID/ BAR

All comments received will be included in the final BAR.

SECTION 9: DESCRIPTION OF THE AFFECTED ENVIRONMENT AND SUMMARY OF SPECIALIST STUDIES

9.1 TOPOGRAPHY

Constructed cut-to-fill platform. Original slope inferred towards the northeast, but since modified by construction of fill wedge on the northern portion of the site, thickening towards the north.

9.2 VEGETATION AND BIODIVERSITY

(Please refer to attached biodiversity study, appendix D1)

The field assessment, conducted, revealed that there is excellent natural grass growth and basal cover throughout the site, particularly throughout the abandoned contour plots where agricultural activities once took place. The vegetation shifts from grassland to typical African bushveld approximately half-way up the slope moving eastwards.

The proposed site of the Musa Special School is primarily mixed grassland-bushveld, with *Cymbopogan pospischili* and *Hyparrhenia hirta* being the dominant grass species, with *Vachelia tortillis* and *Dichrostachys cinerea* being the dominant tree species within the proposed site. Approximately 50% of the proposed site of the Musa Special School, primarily on the western flank of the site area demarcated in red in the picture below is abandoned agricultural land, that has been previously used for local subsistence maize farming. The abandoned agricultural plots most likely formed part of a larger commercial agricultural scheme because there is strong evidence of contouring throughout the western portion of the site (see image below).

Large bush clumps dominated by *D. cinerea* become more abundant, along with several large individuals of *Vachelia sieberiana* and *V. nilotica* being present towards the eastern edge of the proposed development site and towards the crest of the hill (see image below). Continuing moving towards the eastern boundary of the proposed site, the ground becomes significantly rockier and is completely dominated by thickets of *D. cinerea* and *Acacia* species.

Alien invasive plant species are evident throughout the site, with *Lantana camara* being particularly prevalent. Other alien invasive plant species identified on-site include, *Chromolaena odorata*, *Solanum mauritanum*, *Melia Azedarach,* and *Senna didymobotrya*. Dense thickets of *L. camara* can be found within thickets of *D. cinerea*, subsequently making it near impossible to traverse the area on foot.

There were no 'true' drainage lines observed on site. However, there was a distinct drainage-type channel observed on site which may have been used during the previous commercial agricultural system

This study determined that the Site Ecological Importance (SEI) of the vegetation community at the proposed Musa Special School site is of "low to very low" ecological importance. The vegetation community is highly dissimilar to the benchmark vegetation type, with only a handful of species from the known species list for the area actually occurring at the site. Moreover, the site has a high prevalence of alien invasive plant species, which in some instances, form highly dense thickets that are impossible to impasse. Overall, the site has been greatly modified through extensive crop agriculture activities that took place until fairly recently, whilst there are still several cultivated plots of domestic maize within the site.

9.3 WETLAND AND RIPARIAN/AQUATIC ENVIRONMENT

The Vuna river, a tributary of the Black Mfolozi River, is located approximately 1,4km from the Eastern edge of the proposed Musa Special School site. Moreover, there are no wetlands identified within 500m for the proposed Musa Special School site.

9.4 GEOLOGY AND SOILS

(refer to geotechnical study, appendix D2)

Geologically the site is underlain by colluvium and residual soils that are derived from the weathering of the sandstones of the Vryheid Formation, which has been exposed at the base of most test pits.

In order the arrive at foundation recommendations 6 Dynamic Cone Penetrometer (DCP) tests were undertaken and dug up 6 Test pits in order to determine the strength, hardness and classification of the soil.

The Geotechnical report at Musa Special School in Nongoma assumed that Estimated Allowable Safe Bearing Pressure (EASBP) of 50 kPa will be required for the proposed single storey structures. Excellent founding conditions (EASBP >150 kPa) exist on weathered soft-rock sandstone/siltstone that has been exposed at the base of most test pits/or material of at least medium dense consistency (an average depth of 1,0m below existing groundlevel, slightly deeper towards TP1).

It must be ensured that the entire base of the foundation comprises similar material (in-situ soft-rock sandstone) and that no part of the structure is founded on fill material from the cut.

The laboratory test results show that the underlying soils have a low heave potential, according to the *van der Merwe* criteria a cumulative of <10 mm has been calculated for the site. No significant problem soils were noted or recorded. Any structures with high point-loads (e.g. water towers) may require individual investigations.

9.5 HERITAGE AND CULTURAL

(refer to geotechnical study, appendix D3)

The area has previously undergone cultivation with much of the land currently lying fallow with a thick grass layer and pockets of thorn bushes. There is still visible evidence of furrows or access roads on the project area. The 1966 version of the 1:50000 topographical map of the project area (2831BA) shows the area has been used for cultivation even then indicating that there will be a very low chance of finding intact heritage resources on the site. No heritage sites were found during the site inspection.

The South African fossil sensitivity map indicates that the project area is situated in an area of very high fossil sensitivity. An area of very high fossil sensitivity requires an on-site field assessment. Due to the ongoing disturbance of the project area by cultivation, it is recommended that no further studies take place.

A desktop palaeontological assessment that was undertaken of the previous site earmarked for the school (which falls into the same very high fossil sensitivity) found that based on the geology of the area and the palaeontological record, it could be assumed that the formation and layout of the basement rocks, dolomites, sandstones, shales, coals, quartzites, basalts and volcanic rocks in the project area are typical for the country and do not contain any fossil material. The shales of the Vryheid Formation could contain impression fossils of plants of the *Glossopteris flora*; however, these fossil plants are present in the shales and mudstones between coal seams but seldom within coal seams. Their distribution is also extremely sporadic and unpredictable.

The assessment stated that it was unlikely that many fossils would occur in the proposed site in the shales between coal seams. Furthermore, no fossils have been recorded from the area therefore from a palaeontology perspective the proposed development can go ahead. The report, nonetheless, stated that rocks of this type and age are potentially fossiliferous therefore if there are chance finds of fossils, a monitoring protocol should be implemented which is provided in Chapter 9 of this report. It is also recommended that the monitoring protocol be included in the Environmental Management Programme for the proposed school.

It is therefore recommended that the construction of the proposed Musa special needs school can proceed with the proviso that the mitigation measures and recommendations provided in this report are implemented and adhered to.

9.6 SOCIO-ECONOMIC PROFILE

All details as presented in this section have been extracted from the Msunduzi IDP for 2017/2018.

Level of unemployment:

As per the IDP (2017-18), the unemployment level remains very high at 49.3%.

Economic profile of local municipality:

The following details for economic profiles have been extracted from the IDP:

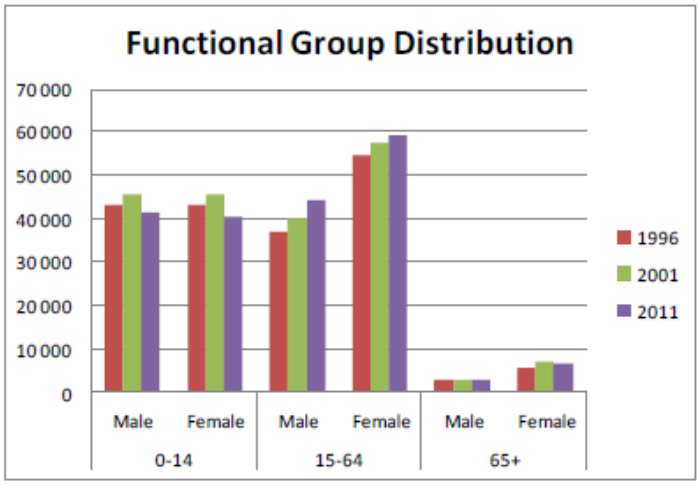
It is possible that comparatively more males leave the area in search of employment after completion of their secondary education.

Table 10: Functional Economic Population

Age Cohort	1996		2001		2011	
	Male	Female	Male	Female	Male	Female
0-14	43,201	43,093	45,655	45,735	41,391	40,470
15-64	36,985	54,839	39,938	57,447	44,285	59,388
65+	2,877	5,371	2,746	6,922	2,814	6,560
Total	83,063	103,303	88,339	110,105	88,490	106,418

Source: STATSSA

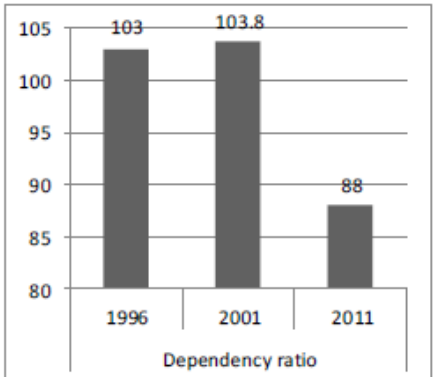
Figure 7: Functional Economic Population



Source: STATSSA

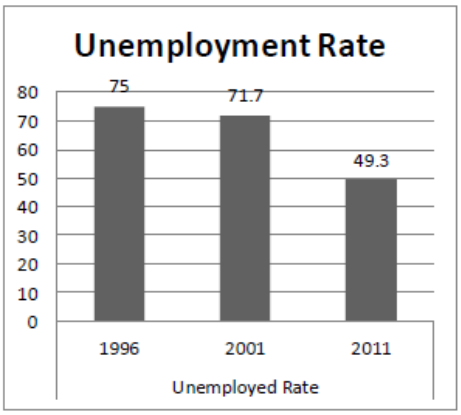
A very concerning statistic to the Nongoma Municipality is the very high dependency ratio as indicated in the figure hereunder:

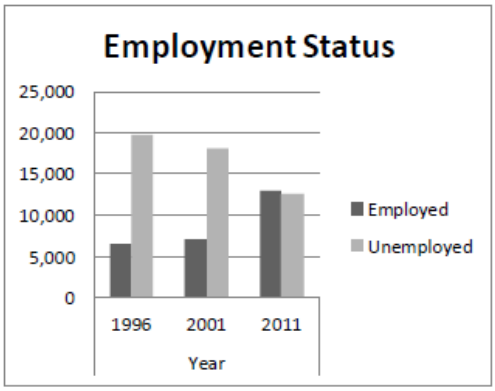
Figure 8: Dependency Ratio



Although the dependency ratio has decreased between 2001 and 2011, the number remains very high, there is 88 people not employed (i.e. dependent) to every one person employed in Nongoma Municipality. The comparatively low income levels place a further burden on the employed in the municipal area.

Employment and Unemployment levels:





Source: STATSSA

Local municipalities by MIIF classification, proportionate share of government Grants and poverty headcount, 2011 versus 2016

Income:

Source: STATSSA

Table 1: Income cohorts

RANDS PER ANNUM	NO	%
No income	3616	10.53%
R1 - R4 800	2044	5.95%
R4 801 - R 9 600	4064	11.83%
R9 601 - R 19 600	7978	23.23%
R 19 601 - R 38 200	9258	26.96%
R 38 201 - R 76 400	3940	11.47%
R 76 401 - R 153 800	1924	5.60%
R 153 801 - R 307 600	966	2.81%
R 307 601 - R 614 400	378	1.10%
R 614 001 - R 1 228 800	72	0.21%
R 1 228 801 - R 2 457 600	43	0.13%
R 2 457 601 or more	59	0.17%
TOTAL	**34342**	**100.00%**

From this figure it is clear that income levels are low with about 75% of households earning below R38 200 per annum, i.e. about R3 000 per month.

Source: STATSSA

Level of education:

As per the IDP, the education status is per table below:

	Gender	1996	2001	2011
No Schooling	Male	10 542	11 803	11 465
	Female	19 007	23 226	6 025
Some primary	Male	4 820	4 781	9 216
	Female	9 016	8 707	5 579
Complete primary	Male	1 536	1 390	2 166
	Female	2 423	2 145	1 425
Some secondary	Male	6 536	6 423	12 081
	Female	9 163	8 653	9 505
Std 10/Grade 12	Male	2 716	2 927	14 819
	Female	4 895	5 049	8 976
Higher	Male	575	1 064	2 500
	Female	758	1 579	1 556

Source: STATSSA

Socio-economic value of the activity

What is the expected capital value of the activity on completion?	R253 000 000
What is the expected yearly income that will be generated by or as a result of the activity?	N/A
Will the activity contribute to service infrastructure?	YES / NO
Is the activity a public amenity?	YES / X NO
How many new employment opportunities will be created in the development and construction phase of the activity/ies?	150
What is the expected value of the employment opportunities during the development and construction phase?	R5 000 000
What percentage of this will accrue to previously disadvantaged individuals?	90 %

How many permanent new employment opportunities will be created during the operational phase of the activity?	40
What is the expected current value of the employment opportunities during the first 10 years?	+R10 000 000
What percentage of this will accrue to previously disadvantaged individuals?	100%

9.8 CURRENT LAND-USES, ACCESS, SERVICES AND IMPACTS

There is no formal access to the property. The area was previously extensively used for agricultural cultivation, with contouring being highly evident on the western slope of the site (i.e. directly east of the R66 road). Observing the slope from the R66 tarred road (i.e. observing in a directly Eastern direction), the eastern slope of the site is characterised by a large, well vegetated, open grassland, with alien invasive plant species scattered throughout the site. Observing further upslope towards the crest of the hill, the vegetation shifts to woody thicket dominated by indigenous trees and woody alien invasive species.

Figure 5: Project area showing thick grass layer and thorn bushes

Figure 6: Remains of a furrow or access road

Figure 7: View across project area

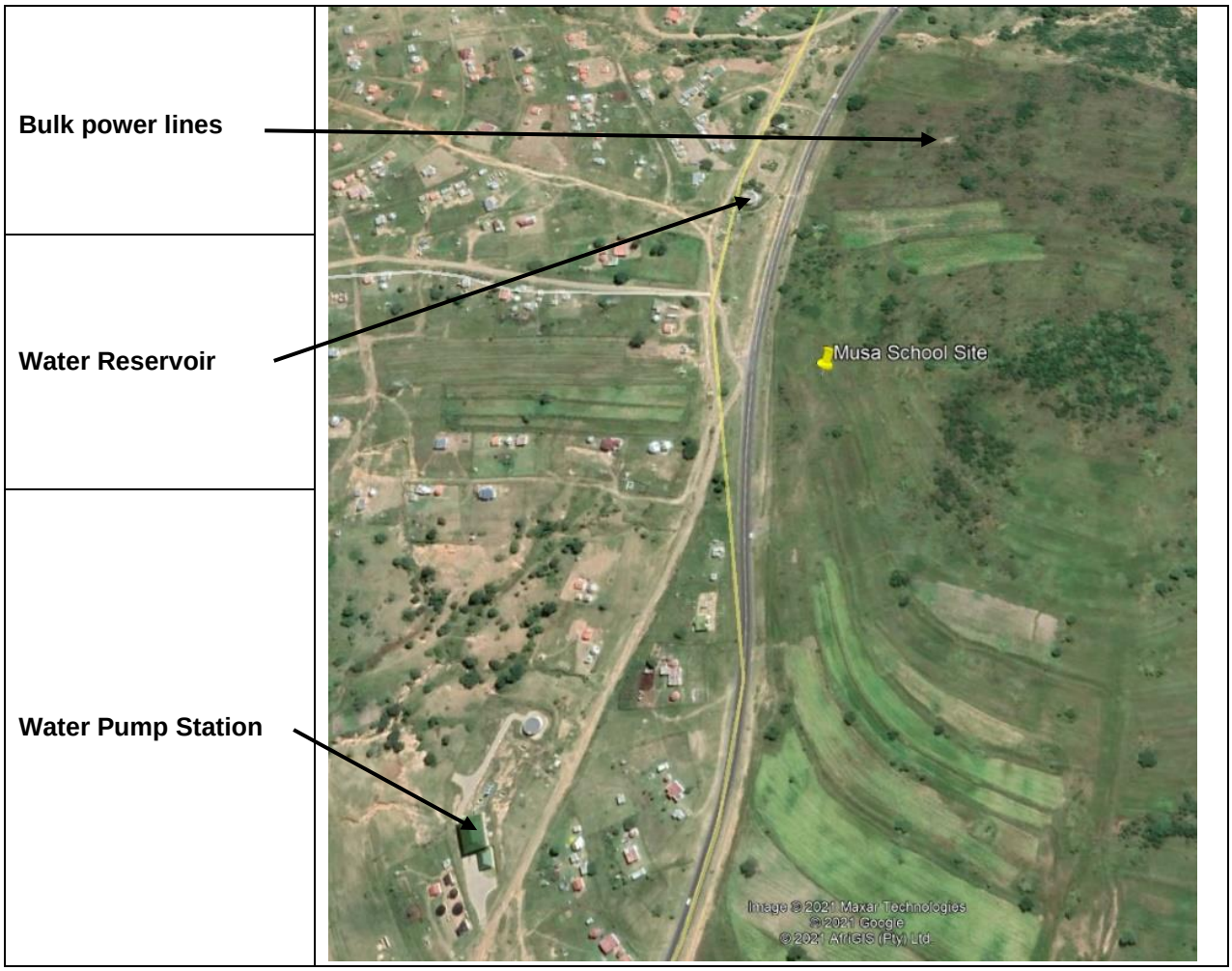


Figure 8: Services

Land uses within 500m of the site:
Land uses within 500m of the site include Low density and medium density residential as well as a road were noted in the vicinity of the site.

These are expected to be impacted upon via construction traffic (safety), noise, and dust impacts. Mitigation measures for these impacts are included in the EMPr.

9.9 SPECIALIST STUDIES IDENTIFIED IN THE DEA SCREENING TOOL WHICH WERE NOT COMMISSIONED:

Landscape/Visual Impact Assessment:
This study was not commissioned as the visual impact expected due to proposed development operation is expected to be minimal. Other visual disturbances in the area include houses, water reservoir, and the road, which already carries traffic and ensuing lights during the night hours.

Hydrology Assessment
The field survey did not determine any wetland areas within the project area. The project area was a modified grassland which was previously used for farming.

Plant Species and Animal Species Assessment:
Vegetation types are included in the biodiversity impact report compiled for the project. Discussion of fauna/impacts is noted in the same report. Management measures as per EMPr for these aspects.

SECTION 10. IMPACT ASSESSMENT

10.1 Assumptions, Limitations, Uncertainties and Gaps in knowledge & Description of the process undertaken to identify, assess and rank the impacts:

A description of impacts used in this assessment was based on a site visit, desktop studies, planning tools, aerial maps and GIS, professional experience and judgement, literature review, as well as site specialist studies, and is based on the condition of the site and watercourse and its surrounds at the time of the visit.

The assessment is also underpinned by the project information provided to the consultant, available drawings, design report and layouts provided by the Applicant (via the engineer) at the time of the assessment and is to date, taken to be correct.

Impacts were analysed and ranked using the following formula:
Overall Score (Significance) = (NxMxS) x (E+DxP) *Where*: N = Nature; E = Extent; M = Magnitude D = Duration; P= Probability; S = Significance

Extent
- Local - extend to the site and its immediate surroundings (1)
- Regional - impact on the region but within the province (2)
- National - impact on an interprovincial scale (3)
- International - impact outside of South Africa (4)

Magnitude or degree to which impact may cause irreplaceable loss of resources:
- Low - natural and social functions and processes are not affected or minimally affected (1)
- Medium - affected environment is notably altered; natural and social functions and processes continue albeit in a modified way (2)
- High - natural or social functions or processes could be substantially affected or altered to the extent that they could temporarily or permanently cease (3)

Duration
- Short term - 0-5 years (1)
- Medium term - 5-11 years (2)
- Long term - impact ceases after the operational life cycle of the activity either because of natural processes or by human intervention (3)
- Permanent - mitigation either by natural process or by human intervention will not occur in such a way or in such a time span that the impact can be considered transient (4)

Probability
- Rare/Remote - the event may occur only in exceptional circumstances (0.1)
- Unlikely - the event could occur at some time (0.2)
- Moderate - the event should occur at some time (0.4)
- Likely - the event will probably occur in most circumstances (0.8)
- Almost certain - the event is expected to occur in most circumstances (1)

Significance
- Provides an overall impression of an impact's importance, and the degree to which it can be mitigated. The range for significance ratings is as follows-
- Impact will not affect the environment. No mitigation necessary (0)
- No impact after mitigation (1)
- Residual impact after mitigation / some loss of populations and habitats of nonthreatened species (2)

• Impact cannot be mitigated / exceeds legal or regulatory standard / increases level of risk to public health / extinction of biological species, loss of genetic diversity, rare or endangered species, critical habitat (3)

The overall rating was then assessed according to the following impact classes:

Impact Rating	Impact RatingLow/Acceptable	Medium	High	Very High
Score (-ve)	0-18	19-36	37-54	55-72

10.2 CONSTRUCTION AND POST CONSTRUCTION / OPERATIONAL PHASE IMPACTS

Table 7: Impacts/risks and mitigation summaries (refer to EMPr for full mitigation measures) for both site alternatives and design alternatives

Impact assessment for Site alternatives 1 and design alternatives

Impacts	Description of impact and risk	Brief Mitigation Summary
Direct and Indirect Impacts during Construction		
General Construction Related Impacts		
Geotechnical	• Geology must be considered during construction, and selection of materials, otherwise there could be structural failure of the bridge and significant scour	• All recommendations as per geotechnical report must be implemented.
Soil Impacts **Surface and ground water quality** **storm water runoff** **erosion** (general construction impacts)-	• Surface water impacts can occur due to hydrocarbon spills, mixing of cement directly on the ground and on unprotected surfaces, cement/concrete spills, waste mismanagement. These spills can in turn be carried off via runoff. • Spillage of cement powder, waste, can cause pollution of both surface and subsurface water. • Increased hard panned area will be available from tarring of the road and pavement construction. Surrounding soils are susceptible to erosion. • Excavation, earth moving, and vehicular movement will increase the susceptibility of the site to erosion during the construction phase • The flood peak, flow volumes and velocities experienced by the watercourse have been altered from their natural state due to the existing surrounding development. The additional runoff produced by the runoff is unlikely to significantly alter the prevailing hydrological conditions.	• Spill kits and containers for spilled and contaminated material to be on standby on site. • A materials storage area must be identified and designated within the Site Camp. Materials, specifically liquid and potentially environmentally hazardous materials must be stored within a bunded area (110% capacity of largest container) and on a hard surface. The storage area must be under cover. • Decanting from large containers (e.g. 210L drums) must be done using a hand pump. If no hand pump is available, liquids must be decanted on a drip tray using a funnel. • All handling of hazardous materials including cement must take place on a hardened surface or within a drip tray or cement mixing tray. • Install chemical toilets and ensure appropriate disposal of waste at a licenced disposal facility. Proof of disposal must be kept on site at all times. • No waste may be buried or burned on site or dumped

		on surrounding properties. All waste must be disposed of at a licenced waste disposal facility. Proof of disposal must be kept on site at all times. The dumping of waste in the river/riparian area/wetland is strictly prohibited. • Existing access must be used. No new access roads must be created.
Waste (general construction impacts)	• Generation of waste will be expected during construction.	• Sufficient waste bins must be provided within the camps. These bins should be labelled or colour coded to facilitate waste separation. Storage of waste must be on a hard surface, and under cover. Liquid waste must be situated within a bunded area. • Liquid waste and accumulated waste must be removed from site regularly by a recognized Waste Contractor
Noise (general construction impacts)	• Operation of construction equipment, movement staff will generate a potential for increased noise at the work area.	• Workers must be trained regarding noise on site and construction hours must be kept to working hours (07h00 to 17h00).
Air quality (general construction impacts)	• Dust entrainment and vehicular emissions (exhaust fumes) are expected during construction, from driving of vehicles on cleared surfaces, and operation of equipment, stripped groundcover/soil/bare surfaces, stockpiles	• Vehicles must adhere to speed limits at all times. • Dampening of exposed surfaces must be undertaken to reduce dust emissions, as required.
Heritage and cultural (general construction impacts)	• During construction, subsurface artefacts or graves may be uncovered from excavations. No cultural elements are expected to be affected. No relocation of communities or cultural and religious elements will be required.	• Should any items with historical or archaeological value be found during construction, these must be reported to the ECO, who will engage a heritage specialist to report to AMAFA and work in the affected area

		must be stopped immediately. A 5m buffer must be maintained around the affected area and demarcated with danger tape or a fence or similar.
Vegetation (Habitat disturbance and loss)	• The terrestrial vegetation in the vicinity of the proposed crossing can be described as degraded, consisting of transformed areas and pockets of exotic invasion. • Given the nature of the vegetation at the proposed crossing site and the extent of disturbance and current activity within the area, the significance of the habitat loss will be low.	• Limit the extent of disturbance. All construction activities must be limited to points proximal to the bridge construction footprint. The existing upstream crossing must be used to move vehicles to the northern bank and visa-versa. No temporary crossing is to be established. • The site camp must not be situated within the open areas associated with the riparian zone. The site camp must be positioned within the extent of the settled areas only. • Undertake construction during the dry winter period to limit the disturbance of flow and risk of causing downstream sedimentation. • •No unauthorised clearing of vegetation is permitted and no clearing of vegetation outside the work footprint is allowed. • On-going control of alien vegetation within the construction areas to be maintained.
Storm water run off **Erosion and sedimentation**	• The control of stormwater during the operational phase requires attention, as long-term negative effects may arise as a result of the increase in unregulated stormwater entering the watercourse	• Erosion controls must be implemented to prevent the expansion of existing gulleys or the formation of new erosion points. Priority areas for erosion control are areas where there is an obvious gradient and the flow of water can be expected.

		• Measures must include at least, the use of sand-bags and silt • curtains. Silt curtains must also be placed adjacent to the active channel during construction, immediately upstream and downstream of the construction activity, where work is being undertaken within or close to the active channel. The integrity of the silt curtains will need to be monitored on a daily basis and repaired or replaced when necessary
Post Construction and Operation		
Rehabilitation	• Disturbed areas can pose weed and scour/erosion concerns, collapse of embankments and structural failure, should proper reinstatement and rehabilitation not occur.	• Terrestrial, riparian and channel bank areas that are damaged as a result of the construction activities must be reshaped and revegetated. The quickest and most suitable method is through the use of a grass mix that includes *Eragrostis tef*, a fast-growing pioneer grass.
Cumulative impacts		
Impacts on watercourse/aquatic environment (-)	• During operation, fuel leakages from vehicles will infiltrate the channel, disperse into the river, and eventually, incrementally affect aquatic life via connecting river systems. • It is possible that weeds will establish on previously rehabilitated areas, post construction monitoring. These must be removed during routine inspections and maintenance. • Minor visual impacts are expected with the alteration of land at the site due to the new school building.	
Socio-economic (+)	• The local economic growth and development will be promoted.	• Local community members must be employed as per

	• Increase in local employment related to the construction activities; • Skills transfer to local labour related to construction/maintenance activities and increased opportunities for local SMMEs	allowances in the contract and skills levels. • Preference must be given to females. During maintenance, preference must also be given to females at the operational phase
No Go		
The project is required to provide an education facility for the special needs of students. Should the no-go alternative be selected, there will be no such education service for a very vulnerable group. If the no-go alternative were to be pursued, the environmental, social and economic status quo would remain, and the site will remain as is, of low ecological value and used for agriculture. New job opportunities will not be created. There will be no opportunities for local construction suppliers and contractors to benefit from the proposed development. There will be no development of skills for construction workers.		

IMPACTS RATING:

* N = Nature (-ve/+ve), M = Magnitude, S = Significance, E = Extent, D = Duration, P = Probability

The table below provides an indication of the significance of the impacts before and after mitigation for both site alternatives and design alternatives. Where there is a variation in significance, this is indicated on the table.

Work Phase	Mitigation Measures	Impact	Details	Duration (1-Very short term; 2-short term; 3-medium term; 4-long term; 5-permanent	Extent (1-minor; 2-local; 3-regional; 4-National; 5-International)	Magnitude (0-Negligible; 2-minor; 4-Low; 6-Moderate; 8-High; 10-Very High	Probability (1-rare; 2-improbable; 3-Probable; 4-Highly Probable; 5-Definite	*Significance = (Magnitude+Duration+Extent) x Probability*
Construction Phase	Without Mitigation	Run off from excavations, stockpiled soils, and compacted/hard surfaces	Excessive sheet flow, increased water flow and potential for erosion of grassland	4	2	6	5	60
	With Mitigation			3	2	2	3	21
Operation Phase	Without Mitigation			4	2	6	5	60
	With Mitigation			2	2	2	3	18
Construction Phase	Without Mitigation	Oil/chemical spills used in road construction	degradation of the terrestrial ecosystem, habitat loss, loss of biodiveristy and long-term concaminated soils	4	2	8	3	42
	With Mitigation			2	2	2	2	12
Operation Phase	Without Mitigation			4	2	6	3	36
	With Mitigation			2	1	2	2	10
Construction Phase	Without Mitigation	Alien invasive plant introductions through construction activities post disturbance	degradation of the aquatic ecosystem, habitat loss, loss of biodiveristy and decreased water quality	5	2	8	5	75
	With Mitigation			2	2	4	3	24
Operation Phase	Without Mitigation			5	2	8	5	75
	With Mitigation			2	2	4	3	24
Construction Phase	Without Mitigation	Increase in dust from exposed soil surface	Exposed soil and the movement of heavy/light vehicles during the construction phase will lead to increased dust creation and settlement in the surrounding	3	2	8	5	65
	With Mitigation			2	2	4	3	24
Operation Phase	Without Mitigation			N/A	N/A	N/A	N/A	N/A
	With Mitigation			N/A	N/A	N/A	N/A	N/A

SECTION 11: ENVIRONMENTAL IMPACT STATEMENT

Based on the assessment undertaken, the following conclusions are made:

The proposed construction activities for the Musa Special School will definitely impact on the adjacent terrestrial vegetation. However, based on the field assessment, the vegetation community at the proposed Musa Special School site is of low ecological importance, because it is very dissimilar to the benchmark vegetation type. Human disturbance, predominantly in the form of agricultural cultivation activities, is the primary driver of the poor and degraded condition of the vegetation community.

A summary of impacts taken from section 10 is provided below:

Impact	Construction Phase		Operational Phase	
	No/Poor Mitigation	Good Mitigation	No/Poor Mitigation	Good Mitigation
e) Potential for increased run off from compacted and/or hard surfaces	Very High	Medium	High	Medium
f) Potential for increased sediment run-off into the surrounding environment, causing scouring and erosion	High	Medium	High	Low
g) Potential for Oil/chemical spills	High	Low	Medium	Low
h) Potential for alien invasive plant introductions through construction activities post disturbance	Very High	Medium	High	Medium

Overall, anticipated adverse impacts linked with the construction and operation of the Musa Special School site are expected to be of High or Very High significance. Implementation of recommended standard best practice mitigation measures will lower the impact significance ratings to a risk potential medium rating.

The **preferred site alternative;** The preferred site alternative above is the most economically feasible for the Applicant and as well as for students and the community. No other alternative sites have been considered as the land was donated to the Applicant (Department of Education). This property has the capacity to support the development. The area is also ideally located close to the Nongoma town for easy commute to local residents and of low ecological significance.

The **preferred layout** The scope of work for this project is to build a New School for leaners with disabilities. Sustainable design to be adopted in the material selection and embracing the natural environment to minimise maintenance. The sequence of site planning and layout is:

- Administration block & School Reception
- Learner Areas
- Feeding Hall and Services
- Outdoor Amphitheatre

- Common Ablutions
- Grounds
- Dormitories and Services
- Visitor and staff parking bays

No other alternatives are available at this stage. Design alternatives are considered as per layout alternatives. With regards to the above layout alternatives **the recommended/preferred layout alternative is Alternative 1,** as it is the preferred feasible alternative which meets the need and desirability of the application, as well as take cognisance of the funds available.

Technology alternatives Septic Treatment plant. See Civil Engineers Report. The decontamination process results in water that can be recycled for non-potable uses.

As per client requirement, Low Maintenance is the initiative that drives this design.

- Use of face brick to reduce maintenance
- Use of Zinc/Aluminium roof sheeting to reduce maintenance and improve water quality in the Jojo tanks.
- Insulation above purlins to reduce heat loads
- Rainwater harvesting to be done
- Heat Pump - Hot Water Generation
- Natural Ventilation is considered in the design process with courtyard design
- LED and Energy Efficient lighting is being allowed for
- Verandas and awnings offer solar protection

Large scale machinery will enable the construction to proceed at a quicker and easier pace but will facilitate far fewer employment opportunities. The use of standard machinery and manual labour is therefore preferable.

The **No-go alternative:** The project is required to provide an education facility for the special needs of students. Should the no-go alternative be selected, there will be no such education service for a very vulnerable group.

If the no-go alternative were to be pursued, the environmental, social and economic status quo would remain, and the site will remain as is, of low ecological value and used for agriculture.

New job opportunities will not be created.
There will be no opportunities for local construction suppliers and contractors to benefit from the proposed development. There will be no development of skills for construction workers. It is therefore recommended that the student accommodation and retail shops location be approved.

It must be ensured that the construction phase, in no way, hampers the health of any ecological systems, and that post-construction rehabilitation leaves the surrounding environments in an as good, if not better, state.

Following the construction phase, the contractors must ensure that all hazardous materials are removed from the site and that rehabilitation of land is undertaken according to the requirements of the EMPr (ANNEXURE E), as well as recommendations put forward by the specialist studies (Annexure D).

Following from the assessment, there are no fatal flaws that would prevent the project from proceeding. Mitigation measures have been proposed to mitigate the potential impacts and are to be included in the Environmental Management Programme.

SECTION 12: RECOMMENDATIONS OF THE EAP

The EAP recommends that the proposed establishment of Musa Special School development be authorised at the proposed location. All mitigation measures listed by the Heritage, and biodiversity specialists in their specialist reports, and proposed in the Environmental Management Programme (EMPr) (refer to Annexure E) must be implemented.

Weighing the positive and negative impacts and taking the need and desirability of the proposed development into account, and the opportunity for mitigation, the EAP is of the opinion that the proposed project be authorised.

Proposed monitoring and auditing

During the construction phase an onsite Environmental Officer (EO) must be appointed to conduct the day to day monitoring of environmental issues in accordance with the construction EMPr.

An independent Environmental Control Officer must be appointed to conduct monthly audits for the duration of the construction phase. Following rehabilitation, the ECO must audit rehabilitation progress on a monthly basis for three months post the implementation of rehabilitation measures.

Period of validity of the Authorisation

It is recommended that the Environmental Authorization be valid for 10 years from the date of authorisation.

ANNEXURE A: MAPS

ANNEXURE B: SITE PHOTOGRAPHS

ANNEXURE C: LAYOUT

ANNEXURE D: SPECIALISTS REPORTS

ANNEXURE D1: BIODIVERSITY IMPACT ASSESSMENT

ANNEXURE D2: GEOTECHNICAL REPORT

ANNEXURE D3: TRAFFIC IMPACT STUDY

ANNEXURE D4: HERITAGE IMPACT ASSESSMENT

ANNEXURE E: ENVIRONMENTAL MANAGEMENT PROGRAM REPORT

ANNEXURE F: ENVIRONMENTAL SCRENING

ANNEXURE F1: DEA SCREENING REPORT AND COMMENTARY REPORT

ANNEXURE F2: EMF

ANNEXURE G: CV OF EAP

ANNEXURE H: EDTEA

ANNEXURE H1: EDTEA APPLICATION FORMS

ANNEXURE H2: LANDOWNER'S CONSENT

ANNEXURE H3: PRE-APPLICATION MEETING

ANNEXURE I: PUBLIC PARTICIPATION

ANNEXURE I1: NEWSPAPER ADVERT

ANNEXURE I2: COMMUNITY MEETING

ANNEXURE I3: BID