PHASE 1 & 2

The proposed KGS is split into two distinct phases and contractors are requested to bid for each separately. Phase 1 is comprised of the main social area and permanent buildings, sleeping area 1 and sleeping area 2 and relevant utilities. Sleeping area 2 and 3 are under Phase 2. Upon reviewing the tender document contractors are encouraged to advise on where they think alternative options could help bring down the budget or streamline the building project. Similarly if they feel anything has been under specked we welcome feedback. All drawings have not been signed off by structural engineer so are to be used as a guideline only. Given the sloping terrain the school is located on, a site visit will be required once pegging out is complete in order to accurately quote for foundations, tent deck heights, social area square and utilities. If any clarification is needed please just get in touch

CONTACTS

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Principal Architect - Ajas Mellbye - am@mellbye.com
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**KGS WATER SYSTEM OUTLINE**

40 students & 20 staff

Main source of water is from nearby spring. Bidders will need to ascertain rough piping lengths and pump sizes required to get spring water to header tanks above the main site. Header tanks to consist of two 10,000 L roto tanks. Tanks to be above ground on concrete slab app 5m x 2.5m. Header tanks to be no less than 3 m above highest shower head.

Additionally, please budget for APP 30,000L underground concrete tank in the main public area for rain water collection APP 7.2X3X1.5m. This can then be pumped to header tanks when necessary. No separation of rainwater and spring water in header tanks.

Options for water treatment to be explored. UV or sand filter treatment of all water in header tanks with chlorine and reticulating pump or single point drinking water in dining room via R.O. or similar.

**Predicted Hot Water Requirements for Tents**

20L hot water per person per day based on one 50L shower

150L tank Ultrasun UVR evacuated tube collector per tent B & C - 11 TOTAL (2 UNITS PHASE 1, 9 UNITS PHASE 2)

200L tank Ultrasun UVR evacuated tube collector per tent A - 10 TOTAL (7 UNITS PHASE 1, 3 UNITS PHASE 2)

200L tank Ultrasun UVR evacuated tube collector for kitchen (PHASE 1)

200L tank Ultrasun UVR evacuated tube collector for laundry (PHASE 2)

All solar thermal units to on ground mounts next to tents with the exception of Kitchen and Laundry which will be roof mounted.

All black and grey water to Bioflit waste water treatment plant and then discharged into drainage ditch or used for landscape watering and tree nursery. We may need to think about pressure pump here and limited plumbing system to get water around the grounds for watering.
KGS WASTE WATER SYSTEM OUTLINE

Please see separate PDF - KGS WASTE WATER TREATMENT PLANT for details.

All black and grey waste water to Bioliff treatmen plant and then discharged into drainage ditch or used for landscape watering and tree nursery. We may need to think about pressure pump here and limited plumbing system to get water around the grounds for watering.

Treatment plant shown here is sized for phase one only. Phase two will require another similar unit. this will need to be be taken into account when locating the sewage treatment plant and space left for expansion.

Unit shown here will require 18 M.3 of sand to backfill.
POWER SYSTEM

Stand alone solar PV system with battery bank and with back up generator. System to be sized and designed based on supplied power budget. The xcell sheet power budget provided is for phase 1 & 2 structures. Any voltage drop to be accounted for based on site map. Back up generator primarily for workshop and kitchen machinery required for technical training of students. Solar PV array and battery bank to be sized with the intention of running the generator at most 4 hrs per day. Generator to be silent type Perkins engine. Contractors to provide rough budget for generator house with sound proofing and passive ventilation.

Stand alone PV array to be located near workshop and battery bank located in car port/maintenance building in separate, well ventilated room. PV collectors to be on ground mounts to manufacturers specifications. Contractors are to advise on system design and give options for lead acid and lithium batteries, inverters and charge controllers.

ROADS & PATHS

All access roads and parking are not part of this contract. Contractors are to include all pathing however. According to drawings these come to approximately 775M total, (PHASE 1 320M, PHASE 2 455M) but this will need to be confirmed on site once final pegging out has been done. Paths to be 1M wide 10cm deep local brown gravel on top of well compacted ground. Path lighting to be staggered at intervals of 5 meters.
X 200 APP TOTAL
PHASE 1 100 PHASE 2 100
EXACT TOTAL TO BE DETERMINED ON SITE
PATH LIGHTS STAGGERED @ 5M INTERVALS

PATH LIGHT
SCALE 1:10

PUBLIC AREA CONCRETE BENCHES
SCALE

100MM THICK POLISHED & SEALED CONCRETE BENCH 4000X1000X500