HABITECH CONSULTANTS
ARCHITECTS, PLANNERS & PROJECT MANAGERS

Principal: F. M. K. Gichuhi - B. Arch(Hons), MSc (CPM), U.K., M.A.A.K. (A) ACI Arb, Reg. Arch
Associate: Indagwa. J. Eboyi - B. Arch (Hons), M.A.A.K. (A) Reg. Arch.
Associate: V. K. Kiptum - B.Arch(Hons), M.A.A.K.(A) Reg. Arch

HSE NO. 9, KIRICHWA LANE,
ADAMS ARCADE, NGONG RD.
P.O. BOX 66495 – 00800
NAIROBI, KENYA.
EMAIL: info@habitech.co.ke
habitechconsultants@gmail.com
MOBILE: 0733-774433
0724 -347807

73/403(A5)19952,
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KENYA INDUSTRIAL RESEARCH & DEVELOPMENT INSTITUTE (KIRDI).
THE PROPOSED PHASE 2 WORKS FOR THE PROPOSED TECHNO CENTRE (RESEARCH TECHNOLOGY AND INNOVATION LABORATORIES AND RELATED INFRASTRUCTURE) ON PLOT NO 209/5811, DUNGA ROAD, SOUTH 'B' NAIROBI.

MINUTES OF THE PRE-BID SITE VISIT CONDUCTED ON TUESDAY, 04TH AUGUST, 2026 AT 2:00PM AT THE SITE FOR THE FOLLOWING TENDERS: -

1. **TENDER REF No. KIRDI 01/2026/2027.**

   TENDER FOR LPG, COMPRESSED AIR SYSTEM, VACUUM SYSTEM, KITCHEN AND LAUNDRY EQUIPMENT INSTALLATION.

2. **TENDER REF No. KIRDI 02/2026/2027.**

   TENDER FOR BOILER (STEAM AND HOT WATER GENERATION), AND INCINERATOR INSTALLATION.

3. **TENDER REF No. KIRDI 03/2026/2027.**

   TENDER FOR WATERPROOFING WORKS.

A. Preamble:

This was a mandatory pre-bid visit for all the bidders who participated in the above referred tenders to enable them appreciate and understand the scope of the works they were bidding for since these are completion works. The visit was attended by 42 No. bidders (*bidding for LPG, Compressed Air System, Vacuum System, Kitchen and Laundry Equipment Installation, Boiler (Steam and Hot Water Generation), and Incinerator Installation and Waterproofing Works*), Client Representative and Project Consultants.

The bidders were grouped into two teams; The LPG, Compressed Air System, Vacuum System, Kitchen and Laundry Equipment Installation, and Boiler, and Incinerator Installation under the leadership of the Project Mechanical Engineer, and the Waterproofing Works under the leadership of the Project Architect Project Civil Structural Engineer and the Project Quantity Surveyor.

The bidders were able to appreciate the following among other things: -

1. The size and the location of the project, including its neighborhood,
2. The scope of their works,
3. The works executed so far,
4. The pending works,
5. The expected quality of works and material,
6. The available material at the site.

B. Bidders' Questions.

a) **Requested for extension of time to return bids.**

Response:
No extension of time will be allowed due to the stringent timelines of the project.

b) **Enquired on the capacity of the boiler.**

Response:
The boiler capacity is 750kg/hr. at 10 bar(g)

c) **Enquired about the fuel that the boiler uses**

Response:
It uses Automotive or Industrial diesel.

d) **Asked whether there are separate chimneys for the boiler and incinerator**

Response:
They have separate chimneys.

e) **Asked whether there are routings for the steam from the Boiler to the labs and accommodation tower.**

Response:
Service ducts are available and where necessary, core cutting will be done.

f) **Asked for the capacity of the LPG tanks**

Response:
The tank has a capacity of 1 tonne.

g) **Requested to be shown the location of the compressor room**

Response:
They were oriented and shown the compressor room.

h) **Enquired whether the routings for pipe work for vacuum, LPG & compressed air into the lab are available**

Response:
Service ducts are available and where necessary, core cutting will be done.

i) **Requested to be shown the location of Kitchen & Laundry**

Response:
The bidders were oriented and shown the kitchen and the laundry spaces.

j) **Sought information on the waterproofing products that were previously used.**

Response:

- For the retaining walls in the basements – **Vander Super/Tecmadry Milenium**
- For the flat roof terraces – **4mm APP (Attatic Polypropylene Membrane) modified bitumen membranes,**
- Expansion joints - **Mastic sealants.**

k) **Requested for the specification of the installed water bar.**

Response:

The installed water bar was PVC Waterbar V-15 / V150 from Sika.

- Material: Flexible unplasticized/plasticised PVC (high-quality thermoplastic vinyl resins), free from scrap/reclaimed material.
- Profile: V-type or ribbed/flat with anchoring ribs/fins for construction joints (low to moderate movement).
- Thickness: 3–5 mm (nominal ~4–5 mm at web).
- Hardness: Shore A 70 ± 5 (or 67–80 range).
- Tensile strength: ≥ 10 N/mm² (often 12–16 N/mm²).
- Elongation at break: ≥ 300%.
- Chemical resistance: Permanent to water, seawater, sewage; temporary to diluted acids, alkalis, mineral oils.
- Other: Specific gravity 1.3–1.4; water absorption low (<0.2%); service temperature typically –35 °C to +55 °C; heat-weldable on site.
- Compliance reference: Generally meeting or aligned with standards such as CRD-C 572, BS 2782, DIN 18541 / EN ISO equivalents, or equivalent manufacturer data current at the time.
- Installation: Cast into the construction joint, fixed to reinforcement with clips, continuous welded joints.

l) **Requested for the specification and class of the French drain pipes and the geotextile used.**

Response:

Pipes: 150 mm nominal diameter perforated uPVC pipes, Class 43. Thickness 3mm.

- Nominal/outside diameter: Approximately 160 mm (mean OD typically 160.0–160.5 mm range under KS 06-149 / ISO-aligned metric series.
- Wall thickness: SN4 (common for French drains) approx. 3mm to 4.2 mm
- Material: Unplasticized polyvinyl chloride (uPVC) to relevant Kenya Standards (KS 06-149 series or ISO1452/ISO 4435 equivalents for drainage) or BS 3505/BS EN equivalents.
- Perforations: Factory-perforated with filter-compatible openings.
- Joints: Rubber-ring or solvent-weld as appropriate for the system.
- Lengths: Standard 6 m effective lengths common.

Geotextile: Non-woven needle-punched continuous-filament polypropylene (or polyester) geotextile with a mass of approximately 200 g/m², Apparent Opening Size (AOS) of 0.10–0.18 mm, permittivity ≥ 0.7 s^{-1}, and CBR puncture resistance ≥ 2,000 N.

m) **Sought on the methodology of desilting the sumps.**

Response:

Methodology for Desilting Sumps Connecting French Drains

Note: The methodology outlined below is provided ***as a guide only***. Bidders are encouraged to propose their own detailed desilting methodology, provided it achieves the same objectives of thoroughly cleaning the sumps and connected French drains, protecting the existing drainage system, and ensuring safe execution. Any alternative methodology shall be submitted for the Engineer's review and approval prior to commencement of works

Methodology

The following detailed methodology shall be adopted for the desilting and cleaning of sumps connected to French drains.

1. Pre-Works Planning and Preparation

- Conduct a site-specific risk assessment covering confined space, electrical hazards, slippery surfaces, potential contaminated silt, and traffic/access constraints.
- Obtain necessary permits and notify the Engineer/Client of the intended works programme.
- Isolate the sump system: Switch off and lock-out/tag-out the sump pump(s) and any associated electrical controls. Isolate power at the distribution board.
- Provide temporary lighting, ventilation (forced air if the sump is deep or poorly ventilated), and safe access (ladders, platforms, or scaffolding as required).
- Erect temporary barriers, signage, and exclusion zones around the work area.
- Assemble equipment and materials in advance:
    i. Submersible sludge/vacuum pump or wet vacuum unit.
    ii. High-pressure water jetting unit
    iii. Drain rods, flexible sewer jetting hose, and mechanical drain snake/auger (use with caution).
    iv. Manual tools (scrapers, stiff brushes, shovels, buckets).
    v. Personal Protective Equipment (PPE): Safety helmet, gloves, waterproof clothing, safety boots, eye protection, and respiratory protection if dust or fumes are present.
    vi. Temporary storage containers or skip for silt slurry and disposal bags.
    vii. Clean water supply for flushing.
- Protect adjacent finishes, floors, and any sensitive equipment with sheeting or boards.

2. Initial Dewatering and Gross Debris Removal

- Pump out standing water from the sump using a submersible pump or vacuum unit, discharging to an approved temporary holding area or drainage point (do not discharge contaminated water directly into public sewers without approval).
- Manually remove large debris, rubbish, leaves, and loose silt from the sump base and walls using shovels, buckets, or vacuum.

- Record the approximate volume and nature of material removed for documentation.
- Visually inspect the sump walls, base, benching, inlet pipe connections from the French drains, outlet/discharge pipe, and any internal fittings for visible damage, cracks, or severe blockages.

3. Detailed Cleaning of the Sump Chamber

- Agitate residual silt deposits on the base and lower walls using controlled high-pressure water jetting. Start at lower pressure and increase only as necessary to avoid damage to concrete or pipe joints.
- Direct the jet systematically around the chamber, paying particular attention to corners, benching, and the entry points of the French drainpipes.
- Continuously vacuum or pump the suspended slurry to prevent re-settlement.
- For stubborn or compacted silt layers, use manual scraping and brushing in combination with jetting. Avoid aggressive mechanical tools that could damage the sump structure or pipe ends.
- Repeat the cycle of agitation, suspension, and removal until the sump base and walls are free of significant silt deposits and the surface is visibly clean.
- Flush the entire chamber thoroughly with clean water and remove the final rinse water.

4. Cleaning of Connecting French Drain Inlets and Pipe Runs

- From the sump, insert a flexible jetting hose or drain rods into each French drain inlet pipe.
- Jet or rod the pipes in the upstream direction as far as practical, working the nozzle or rods back and forth to dislodge silt, roots, or debris.
- Where clean-out points or inspection chambers exist along the French drain runs, open these and flush from the clean-outs toward the sump (preferred direction to move material into the sump for collection).
- Use a mechanical drain snake only where jetting is insufficient, exercising extreme care to avoid puncturing or damaging the perforated uPVC pipes or surrounding geotextile.
- Monitor the return flow into the sump and continue until clear water is observed and free flow is confirmed.
- If significant blockages persist beyond the reach of equipment from the sump, additional access points or local excavation (subject to Engineer approval) may be required.

5. Final Inspection, Testing and Reinstatement

- Carry out a thorough visual inspection of the cleaned sump, inlet pipes, and connections. Check for any structural defects, damaged pipe ends, or remaining restrictions.
- Photograph the condition of the sump before and after cleaning for record purposes.

- Reinstall the sump pump(s), float switches, and any other fittings. Restore electrical supply and test automatic operation through a full cycle (fill, pump start, discharge, and cut-off).
- Verify free gravity flow from the French drains into the sump under normal conditions (or by introducing clean water at upstream points if feasible).
- Check that the discharge line is clear and functioning correctly.
- Remove all temporary works, clean the surrounding area, and dispose of silt slurry and waste materials at an approved disposal site in accordance with environmental regulations and local authority requirements.
- Reinstate any disturbed floor finishes, covers, or access points to the original standard.

6. Documentation and Handover

- Prepare a brief method statement compliance record including:
    i. Date and duration of works.
    ii. Volume and nature of silt removed.
    iii. Any defects observed and actions taken.
    iv. Test results of pump operation and drainage flow.
    v. Recommendations for future maintenance frequency
- Submit the record to the Engineer for acceptance.

Minutes Prepared and Compiled by,

INDAGWA J. EBOYI,
FOR: HABITECH CONSULTANTS.
PROJECT'S PROJECT MANAGERS AND ARCHITECTS.