LKB Technologies
Consulting Engineers `Company Profile
Together, united we can

LKB TECHNOLOGIES

CK No. 2008/256912/23

Business Address:

Unit 10, Block 5
The Willows Office Park
276 George Street
Midrand
1687

P.O.Box 6417 Halfway House 1685

Tel: +2711 318 0290
Cell: +2771 868 7544
Fax: +2786 512 0610

Email: info@lkbttechnologies.co.za
www.lkbtechnologies.co.za
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company Overview</td>
<td>3</td>
</tr>
<tr>
<td>Mission and Vision</td>
<td>3</td>
</tr>
<tr>
<td>Our Values</td>
<td>3</td>
</tr>
<tr>
<td>Our Objectives</td>
<td>4</td>
</tr>
<tr>
<td>Our Scope</td>
<td>4-9</td>
</tr>
<tr>
<td>Our Market</td>
<td>9</td>
</tr>
<tr>
<td>Reference</td>
<td>10-12</td>
</tr>
<tr>
<td>Member profile</td>
<td>13</td>
</tr>
<tr>
<td>Company Information</td>
<td>13</td>
</tr>
<tr>
<td>Key Personnel</td>
<td>13</td>
</tr>
</tbody>
</table>
1. Company Overview

LKB Technologies was established in 2008. It is a 100% black owned company. The company is based in South Africa. It is an engineering and project management BEE Level 3 firm that serves industrial, institutional, governmental and commercial clients, focusing mainly on electrical designs, mechanical designs, civil designs, structural designs and energy saving technology designs (GREEN BUILDING), supported by Electrical & Mechanical Project Quality Management Systems (E&MPQMS). All solutions undergo through various engineering stages, i.e. conceptual engineering, feasibility study, detailed engineering design, construction, project management through to commissioning and handing over.

We act as an advisor, program manager, design manager, and construction manager for mechanical and electrical services. We also offer services in which we assume full responsibility for your project needs. We bring effective and proactive management techniques to the planning, design, and construction of a project from inception to completion, for the purpose of controlling cost, schedule, and quality expectations.

Our professionals have backgrounds from the designer, the contractor and the owner’s perspective. We offer design and construction expertise that is not commonly possessed in house.

We strive to deliver to our clients’ outstanding engineering and project management services, to provide fulfilling careers and professional satisfaction for our clients and to achieve financial success so that we can reward ourselves and grow as well as ploughing back to the community. Our staff possesses strong written and oral communications skills, excellent interpersonal skills.

2. Mission and Vision

Our mission is to provide professional engineering services to the public and private sector with price as our key success factor.

3. Our Values

Our values are:

i) Commitment
ii) Confidence
iii) Involvement and
iv) Integrity
4. Our Objectives

♦ To consistently strive to perform to the best of our ability in meeting the expectations of our clients,
♦ To provide, maintain and sustain high quality services to clients,
♦ To achieve outstanding customer relations by attending punctually to clients’ needs and requirements,
♦ To provide best-in-class systems and solutions that are subjected to continuous improvement,
♦ To co-operate and partner with other players within the industry with the view of sharing knowledge and experience,
♦ To operate with high levels of integrity in pursuit of customer satisfaction,
♦ To honour our social responsibility by contributing to needy, charity organisations etc, as and when the need arise.

5. Our Scope

We specialise in the following:

We specialise in the optimisation of the rail systems, manufacturing plant and equipment, mining equipment, hospital equipment and municipality facilities. To fulfil our mission we provide the following to the industry:

We manage the scope and schedule the entire design process, including:

5.2. MECHANICAL

- Design of bulk water supply systems.
• Design of waste water treatment plants.
• HVAC design and evaluation
• Refrigeration Systems
• Medical gas systems
• Airflow balance and analysis
• Cooling tower design
• Kitchen equipment
• Control systems and automation
• Boiler installations
• Wet services
• Escalators, lifts and hoists.
• Mechanical maintenance and operation of the facilities.
• Energy saving/conservative technologies for mechanical installations *(GREEN BUILDING).*

5.1. ELECTRICAL

• Design of solar plants.
• Solar transmission and distribution system design into existing grids.
• Solar plants control and protection system design.
• Solar plants maintenance and operation of the facilities.
• Designing of substations up to 330kV.
• Designs for building/infrastructure refurbishments.
• Industrial high voltage power systems including substations.
• Electrical transmission and distribution system design.
• Electrical control and protection system design.
• UPS and standby generators
• Electrical design of building/infrastructure services.
• Energy saving/conservative technologies for electrical installations \((\text{GREEN BUILDING})\).
• Lighting and small power systems, and associated equipment.
• Drawings, evaluations (BOQs) and specifications.
• Construction management.
• Electrical codes and industry standard requirements.
• Electrical maintenance and operation of the facilities.
• Electrical reticulation system design.
• DC and emergency systems design.
• LV switchgear designs.
• MV switchgear designs.
• DC switchgear designs.
• Earthing designs to IEEE 80 and Lightning Protection Systems Designs.
• HV System Designs.
• Metering and measurements designs.
• Fire Protection Systems Designs.
• Cabling systems designs, including routing and racking.
• Small power and lighting designs.
• Turbo generators, including generator auxiliary and excitation systems.
• Hydro generators and auxiliaries.
• Collection system designs for wind farms.
• Power system simulation for wind farm integration onto the grid.
• Condition monitoring systems for generators and transformers.
• Generator step up and unit transformers.
• Auxiliary transformers.
• Black start system designs.
• Leading design reviews with suppliers for major station equipment such as
turbo generators, hydro generators, generator step up transformers and unit
transformers.
• Power station auxiliary system optimisation studies.
• Unit (turbine or boiler) control and instrumentation.
• Balance of plant control and instrumentation.
• Power supply systems.
• Protection systems.
• System modelling.
• LAN/WANs.
• Bus systems: Profibus/ProfiNet, ModBus RTU, ModBus Plus, DeviceNet etc.
• Ethernet systems.
• SCADA system configuration: WinCC, RSView, InTouch, iFix.
• Plant optimisation.
• Field equipment, cabling and earthing.
• Information systems.
• C&I integration and support.
• Human / Machine interfacing and Ergonomics.
• Control room design.
• Control systems optimisation.
• Training simulators.
• Planning and design of optimal least cost network development and
enhancement.
• Establishment of computer models and model validations.
• Load flow analysis.
• Transient and dynamic stability studies.
• Fault calculations and selection of protection schemes and protective devices.
• Planning, design and optimum placement of power system reactive power
compensation equipment (capacitive / inductive compensation, Static VAr
compensators and power system stabilisers).
• Development of User Defined models for power system equipment, excitation
systems, governor controls for hydro and coal-fired power stations,
transformer tape chargers etc.
• Least cost system expansion studies, including optimisation of the
Transmission networks with respect to conductor size, reactive compensation
or control stability, reliability and minimisation of losses.
• Financial, economic and cost benefit analysis.
• Design and specification of independent power producer installations for
successful integration into the total power system.
• Black start system analysis.
• Transmission line route selection and review.
• Conceptual design, design checking and approval.
• Terrain evaluation.
• Optimal conductor selection with respect to type and size.
• Line termination design.
• Project costing and preparation of projected project cash flows.
• Detailed line design using PLS CADD software.
• Preparation of detailed specifications and complete tender documents.
• Establishment of distribution network computer model and model validations.
• Development of rural distribution ( electrification) master plans.
• Technical, economic and financial assessment of electrification schemes.
• Route survey and determination of optimum substation location.
• Transformer load management studies and transformer tap settings.
• Power factor correction, optimum placement and sizing of capacitors.
• Distribution system reliability evaluation.
• Distribution system optimisation including the establishment of conductor sizing and optimum normally open point.
• Overhead and cable feeder design and route planning.
• Design of Low Voltage and Medium Voltage aerial bundled conductor reticulation system.
• Design of distribution substations (indoor, outdoor, pole mounted, single phase etc.
• Layout design of indoor and outdoor switchgear.
• Fault calculations and selection of protection schemes and protective devices.
• Harmonic analysis and suppression methods.
• Reactive power compensation.
• Motor starting studies and analysis.
• Conceptual design and design review.
• Insulation coordination studies, including protection against lightning and switching surges.
• Detailed primary plant and substation layout design.
• Detailed secondary plant design (auxiliary systems, protection and control).
• Commissioning of plant and equipment.

5.3 CIVIL & STRUCTURAL
• Structural loading.
• Steel, Concrete, Masonry and Timber Structural Design and Analysis.
• Foundation Design.
• Bill of Quantities and Cost Estimates.
• Road & Paving Layout.
• Hydraulic and Structural Design of Water.
• Subsurface Utility Design.
• Site Grading/Drainage Planning and Design.
• Retaining Wall Design.
• 3D CAD Modelling & Design.
• Civil & Structural maintenance and operation of the facilities.

5.4. EXPANDED PUBLIC WORKS PROGRAMME (EPWP)
The government has resolved that all infrastructures must be carried out using the labour intensity Strategy Framework Manual within the context of Expanded Public Works Programme (EPWP). The proposed projects forms part of a deliberately designed interventionist Expanded Public Works Programme geared towards addressing, in a sustainable manner, specific developmental problems taking into account the specific prevailing conditions of the provinces or municipalities characterized by:

- Enhance the living condition of the city inhabitants,
- Identification of business opportunities that will be revealed and shared with programme participants (either at an entry level or advanced level), depending on the scope of work in various sectors with a view to guide them towards a career path and/or business avenues as emerging enterprises.
- Enhance the ability of workers to earn an income, either through the labour market or through entrepreneurial activities.
- Offer unemployed people work experience.
- Provide education, on-the-job training and skills development programmes to the workers.

The proposed development has been design in such a way that, in addition to being functional, safe and providing an aesthetically pleasing, interesting and comfortable environment, it maximizes the use of an appropriate mix of people and machinery with a preference for labour where technically and economically feasible without compromising the quality of the product. Opportunities for increasing labour intensity on projects will be discussed, but these should not be regarded as the only spheres of possibility for increasing labour engagement in projects.

6. Our Market

Our market includes among others:
i) Commercial buildings
ii) Residential buildings
iii) Hospitals
iv) Municipalities
v) Transport sector
vi) Fast moving Consumer Goods manufacturing companies (FCMGs)
vii) Mining sector
viii) Textile industry
ix) Vaccines and pharmaceutical manufacturing companies
x) Public sector
xi) Private sector
xii) Beverage industry and
xiii) Power Plants
### 7. REFERENCES

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PROJECT NAME</th>
<th>CLIENT</th>
<th>PROJECT VALUE (Excl. VAT)</th>
<th>CONTACT PERSON</th>
<th>CONTACT No.</th>
<th>YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mechanical installations for the proposed refurbishment of the ministerial houses and the Union Building</td>
<td>ADI Engineers</td>
<td>R 80, 000, 000.00</td>
<td>Travor Ncube</td>
<td>012 348 6350</td>
<td>Oct. 2014</td>
</tr>
<tr>
<td>2</td>
<td>Mechanical installations for the proposed construction of Mafolo Park (Phase 1) in Burgersfort in the Limpopo Province</td>
<td>Express Structural Solutions</td>
<td>R 45, 000, 000.00</td>
<td>Charles Kawanga</td>
<td>011 315 0087</td>
<td>Dec. 2014</td>
</tr>
<tr>
<td>3</td>
<td>Mechanical Installations for the Refurbishment of the Pharmacy and Administration Block at Ermelo Hospital</td>
<td>Excellerate Consulting</td>
<td>R 3, 182, 311.00</td>
<td>Tamuka Matuku</td>
<td>083 416 3542</td>
<td>July 2012</td>
</tr>
<tr>
<td>4</td>
<td>Mechanical Installations for the conversion of Gymnasium to DBSTE Centre at University of Limpopo.</td>
<td>University of Limpopo</td>
<td>R 5, 200, 000.00</td>
<td>Collin Radebe</td>
<td>011 954 3835</td>
<td>May 2011</td>
</tr>
<tr>
<td>5</td>
<td>Mechanical Installations for the proposed New Nursing College at Ermelo Hospital</td>
<td>Excellerate Consulting</td>
<td>R 8, 000, 000.00</td>
<td>Tamuka Matuku</td>
<td>083 416 3542</td>
<td>August 2012</td>
</tr>
<tr>
<td>6</td>
<td>Mechanical Installations for the proposed New KFC and Office Development in Mbabane.</td>
<td>Excellerate Consulting</td>
<td>R 8, 552, 500.00</td>
<td>Tamuka Matuku</td>
<td>083 416 3542</td>
<td>August 2012</td>
</tr>
<tr>
<td>7</td>
<td>Mechanical Installations for the Construction of a New Fire Station at Wedela in the Merafong Municipality, North West Province</td>
<td>Merafong Municipality</td>
<td>R 500, 000.00</td>
<td>Collin Radebe</td>
<td>011 954 3835</td>
<td>August 2011</td>
</tr>
<tr>
<td>8</td>
<td>Mechanical Installations for the proposed New KFC and Office Development in Manzini.</td>
<td>Excellerate Consulting</td>
<td>R 6, 187, 500.00</td>
<td>Tamuka Matuku</td>
<td>083 416 3542</td>
<td>August 2012</td>
</tr>
<tr>
<td>9</td>
<td>Mechanical Installations for the proposed New Institute of Medial Excellence.</td>
<td>Excellerate Consulting</td>
<td>R 47, 421, 530.00</td>
<td>Tamuka Matuku</td>
<td>083 416 3542</td>
<td>August 2012</td>
</tr>
<tr>
<td>ITEM</td>
<td>PROJECT NAME</td>
<td>CLIENT</td>
<td>PROJECT VALUE (Excl. VAT)</td>
<td>CONTACT PERSON</td>
<td>CONTACT No.</td>
<td>YEAR</td>
</tr>
<tr>
<td>------</td>
<td>------------------------------------------------------------------------------</td>
<td>-------------------</td>
<td>---------------------------</td>
<td>----------------</td>
<td>-------------</td>
<td>------------</td>
</tr>
<tr>
<td>10</td>
<td>Mechanical Installations for the proposed refurbishment of bulk water supply pump stations for Bushbuckridge Water.</td>
<td>Excellerate Consulting</td>
<td>R 40,000,000.00</td>
<td>Tamuka Matuku</td>
<td>083 416 3542</td>
<td>November 2012</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ITEM</th>
<th>PROJECT NAME</th>
<th>CLIENT</th>
<th>PROJECT VALUE (Excl. VAT)</th>
<th>CONTACT PERSON</th>
<th>CONTACT No.</th>
<th>YEAR</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Civil and Structural designs for the Refurbishment of the Pharmacy and Administration Block at Ermelo Hospital</td>
<td>Excellerate Consulting</td>
<td>R 3,500,000.00</td>
<td>Tamuka Matuku</td>
<td>083 416 3542</td>
<td>July 2012</td>
</tr>
<tr>
<td>2</td>
<td>Civil and Structural designs for the proposed New Nursing College at Ermelo Hospital</td>
<td>Excellerate Consulting</td>
<td>R 5,215,100.00</td>
<td>Tamuka Matuku</td>
<td>083 416 3542</td>
<td>August 2012</td>
</tr>
<tr>
<td>3</td>
<td>Civil and Structural Designs for the proposed New KFC and Office Development in Mbabane.</td>
<td>Excellerate Consulting</td>
<td>R 7,291,761.40</td>
<td>Tamuka Matuku</td>
<td>083 416 3542</td>
<td>August 2012</td>
</tr>
<tr>
<td>ITEM</td>
<td>PROJECT NAME</td>
<td>CLIENT</td>
<td>PROJECT VALUE (Excl. VAT)</td>
<td>CONTACT PERSON</td>
<td>CONTACT No.</td>
<td>YEAR</td>
</tr>
<tr>
<td>------</td>
<td>-----------------------------------------------------------------------------</td>
<td>---------------------------------------------</td>
<td>---------------------------</td>
<td>----------------</td>
<td>-------------</td>
<td>-----------</td>
</tr>
<tr>
<td>1</td>
<td>Electrical engineering services for the Gauteng Cluster Schools</td>
<td>ADI Engineers</td>
<td>R 82,000,000.00</td>
<td>Travor Ncube</td>
<td>012 348 6350</td>
<td>Dec. 2014</td>
</tr>
<tr>
<td>2</td>
<td>Electrical installations for the proposed construction of Mafolo Park (Phase 1) in Burgersfort in the Limpopo Province</td>
<td>Express Structural Solutions</td>
<td>R 55,000,000.00</td>
<td>Charles Kawanga</td>
<td>011 315 0087</td>
<td>Dec. 2014</td>
</tr>
<tr>
<td>3</td>
<td>Electrical Installations for the conversion of Gymnasium to DBSTE Centre at University of Limpopo.</td>
<td>University of Limpopo</td>
<td>R 4,937,886.27</td>
<td>Collin Radebe</td>
<td>011 954 3835</td>
<td>May 2011</td>
</tr>
<tr>
<td>4</td>
<td>Electrical Installations for the refurbishment to Wattville Stadium in Benoni (East Rand)</td>
<td>Epitome Consulting</td>
<td>R 1,594,953.60</td>
<td>Dephney Mabuela</td>
<td>072 417 2300</td>
<td>May 2012</td>
</tr>
<tr>
<td>5</td>
<td>Electrical Installations for the proposed New KFC and Office Development in Manzini.</td>
<td>Excellerate Consulting</td>
<td>R 5,185,400.00</td>
<td>Tamuka Matuku</td>
<td>083 416 3542</td>
<td>August 2012</td>
</tr>
</tbody>
</table>
8. MEMBER PROFILE

Name: Lawrence Buwerimwe, Pr. Eng.
Cell: +27 (0)71 868 7544
Fax: +27 (0)86 512 0610

Name: Mqwalaseli Mhlati
Cell: +27 (0)820650454
Fax: +27 (0)86 512 0610

9. COMPANY INFORMATION

Registered Name: LKB Technologies CC
Registration Number: 2008/256912/23
Banking Institution: Nedbank
Branch: Carlswald Centre
Branch Code: 17794200
Account No.: 1014195640
Professional Indemnity Insurance: AON South Africa (Pty) Ltd

10. KEY PERSONNEL

Name: Lawrence Buwerimwe, Pr. Eng.
Qualification: BSc. Eng. Hons. Mech, M.SAIMechE, GCC, ICMEESA Member, MBA.
Experience: 12 years (Building Services, Infrastructure)

Name: Noble Muromba, Pr. Eng.
Qualification: BSc. Hons. Elec. Eng.(UZ); IEEE; SAIEE,
Experience: 12 years (Infrastructure EPC, Project/Construction Management)

Name: Allen Manyere, Pr. Technologist
Qualification: BSc. Hons. Elec. Eng.(UZ); APM (SBL); IE (ESETA); M.SAIEE,
Experience: 10 years (Infrastructure EPC, Project/Construction Management)

Name: Tonderai Mapfumo, Pr. Eng.
Qualification: BSc. Hons. Civil Eng.(UZ)
Experience: 12 years (Infrastructure, Building Services Project/Construction Management)

Experience: 17 years (Building Services, Infrastructure)

Name: Sheila Sekete
Qualification: BSc. Human Resources Management (Midlands State University, Zimbabwe), NQF Level 7
Experience: 5 years (Office and HR Administration)
8 May 2015

TO WHOM IT MAY CONCERN

Dear Sir/Madam

PROOF OF INSURANCE LETTER

LKB TECHNOLOGIES CC

This letter serves to confirm that the above mentioned insured entity has the following insurances in place:

Cover : Professional Indemnity Insurance
Limit of Indemnity : R4 000 000.00 each and every claim

Cover : General Public Liability
Limit of Indemnity : R4 000 000.00 each and every claim

Policy Number : ENGSPS130254

Period of Insurance : 01 June 2015 to 31 May 2016

Insurers : Arch underwriting (at Lloyd’s South Africa)

We confirm that the policy is currently of full force and effect.

Yours faithfully

Marubini Madilonga
Aon Professional Risks
011 944 7909
Exempted Micro Enterprise Certificate Issued To

LKB Technologies CC

Level 3 Contributor

Measured Entity

Company Name: LKB Technologies CC
Registration Number: 2008 / 256912 / 23
VAT Number: N/A
Address: 45 Ille De Capri
Vorna Valley, Midrand
1686

BEE Status

BEE Status Level: Level 3
Black Ownership: 51%
Black Women Ownership: 0%
Value Adding Vendor: No
Issue Date: 07 November 2014
Expiry Date: 06 November 2015
Certificate Number: EMELOS044160
Version: Final
Applicable Scorecard: EME
Applicable BBBEE Codes: Code 000 Gazetted on 9 February 2007

BEE Procurement Recognition Levels

<table>
<thead>
<tr>
<th>Level</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>135%</td>
</tr>
<tr>
<td>2</td>
<td>125%</td>
</tr>
<tr>
<td>3</td>
<td>110%</td>
</tr>
<tr>
<td>4</td>
<td>100%</td>
</tr>
<tr>
<td>5</td>
<td>80%</td>
</tr>
<tr>
<td>6</td>
<td>60%</td>
</tr>
<tr>
<td>7</td>
<td>50%</td>
</tr>
<tr>
<td>8</td>
<td>10%</td>
</tr>
<tr>
<td>Non-Compliant</td>
<td>0%</td>
</tr>
</tbody>
</table>

EmpowerLogic (Pty) Ltd
Reg. No.: 1995/000523/07
BBBEE Verification Agency

SANAS Accredited

Per Tebogo Morare
Member - Verification Committee

This certificate is issued in accordance with the stipulations and burden of proof published in the Codes of Good Practice on Broad Based Black Economic Empowerment and in the Verification Manual of the EME status of the measured entity.

This certificate must be validated at www.empowerlogic.co.za before reliance is placed thereon. EmpowerLogic does not take responsibility for certificates that have not been validated.