

CURRICULUM VITAE



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|-------------------------|---|
| Company Name | Lidwala Consulting Engineers (SA) (Pty) Ltd |
| Date of birth | Frank van der Kooy 16.08.1949 |
| Nationality | South African |
| Profession | Environmental Scientist |
| Position | HOD and Manager |
| Start date with LIDWALA | 2006- Permanent full-time staff member |
| Relevant experience | 41 Years |

Qualifications

- Diploma Agriculture – Potchefstroom, North West, 1969
 - National Diploma Landscape planning, Botany, Ecology, Soil science, Pretoria, 1975
 - Bachelor degree – Unisa, Pretoria, Sociology of City and Urban Planning, Ecology and Environmental studies, 1984
 - B(Hons) – Unisa, Pretoria, City of Urban Planning, Environmental, Ecology, 1986
 - Certificate in EIA Studies – U.C.T – Cape Town, 1988
 - MDP – Business Leadership-Unisa, Project, financial, operational and personnel management, 1992
-

Affiliation and accreditation

- Registration as Botanical Technologist: South African Council for Natural Scientific Professions: Registration No: 300002/95
 - Registration as a Professional Environmental Scientist: South African Council for Natural Scientific Professions, since 2000, Registration No: 400126/00
 - Member of International Association for Impact Assessment (IAIA) from 1995.
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Specialities

- Environmental impact assessments (EIA)
- Strategic Environmental Assessment (SEA)
- Social Impact Assessment (SIA)

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- Integrated Environmental Management (IEM)
- Environmental Management System (EMS)
- Land Functional Analyses (LFA) for rehabilitated land on specific mines
- Biodiversity monitoring special technique developed specific for mining but applicable anywhere
- Mine closure plans
- Mine Environmental Management plans/programmes (EMPR)
- Prospecting and mining applications
- Mining – environmental monitoring, auditing, environmental liability (Quantum)
- Rehabilitation of denuded areas, botanical advice and plans
- Development feasibility studies
- Scoping documents for infrastructure and various other projects
- Conflict Management
- Public Participation
- Natural resource management
- Identification and design of pertinent and cost-effective mitigation measures and management programs
- Monitoring and auditing protocols
- Project Management
- Infrastructure & Service related projects
- Institutional & Social development

Software

Career summary

- 2011 – current : **LIDWALA EPS** - HOD and Manager.
- **2007 – 2011 - LIDWALA ENVIRONMENTAL PLANNING SERVICES (EPS)** – started Lidwala EPS company, shareholder, office manager and director.
- 2001 to 2006 – **AFRICAN EPA** – Environmental specialist and Office Manager – Feasibility study on residential development, Strategic Environmental Assessment, Water service development planning, environmental studies, prospecting and mining applications.
- 1984 to 2000 – **ESKOM**, West Cape Region, Port Elizabeth, George and Head Office – Megawatt Park Johannesburg – Several positions held e.g. Environmental specialist, EIA practitioner, Environmental Manager for Distribution – development of EMS, various EMP's and EIA's for linear projects.
- 1978 to 1984 – **CAPE DEPARTMENT OF NATURE AND ENVIRONMENTAL CONSERVATION**, Jonkerhoek, Stellenbosh – Nature Conservation Officer – Evaluation of developments, rehabilitation projects, work on habitats, rare and endangered plants, Advisory bodies for development of Nature reserves

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- 1973 to 1978 – **NATIONAL BOTANICAL GARDENS**, Pretoria – Environmental work, plant studies
 - 1971 to 1972 – **PRIVATE FIRM**, Environmental related work
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Work experience

MANAGEMENT, MONITORING AND CONTROL SYSTEMS:

- Linear EIA processes for Eskom Transmission lines throughout SA.
- EIA's for small enterprises – Prieska development;
- Several EIA's for Tshwane Municipality, roads and pipelines
- Road EIA processes for Kuruman District Municipality
- EIA Louis Trichardt – Messina 132k V line, World Development Bank approval;
- EIA process for new Diesel tanks for Sishen Mine, Anglo American;
- Basic Assessments for various projects, Petradiamond new opencast mine;
- Prieska feasibility study on Nature reserve and “Die Bos” Holiday resort
- Strategic Environmental Assessment; Bronberg, for DACEL to develop guidelines for future development. (Highly controversial with developers)
- Strategic Environmental Assessment; Rustenburg, phase I
- Strategic Environmental Assessment; Frances Baard District
- Mining closure plans and liability analyses – Sishen Mine (Kumba – Anglo)
- Waste stream analyses for Kumba Resources (Sishen Mine (Kumba – Anglo)
- Mining and prospecting applications – Gemcore, Kimberley, West Coast
- Biodiversity monitoring protocol developed for Sishen mine, Anglo American
- Mining rehabilitation, monitoring and environmental audits; Elandsplaagte, Diamondcore and Petradiamonds;
- Closure Risk Analysis and Risk Quantum for Mining Companies- Petradiamonds and Anglo Sishen
- Social impact assessments for transmission lines, mining companies and Municipalities;
- Environmental Management system development (EMS) for Eskom, Sedibeng and Lepelle water, proposals and software implementation.
- Specifications for servitude clearing & EMP – construction and operation phases for transmission lines Eskom.
- Economic and social strategic analyses – Southern Cape
- Environmental studies on problem areas, solutions and Environmental Management Plans
- Editor of “Tree Identification Guide”.
- EMP for Mining Companies- Petradiamonds;
- Social Labour Plan for Mining Companies- New Companies

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OTHER RELEVANT EXPERIENCE

- Lecturer: University of the Free state; Environmental Legislation and Impact Assessment
- Lecturer: University of North West; Bed 3rd year students, environmental concepts and problems, the possible methodology to identify and solve critical ecological degradation
- Guest lecturer: University of Pretoria on environmental, regional and town planning legislation
- Production of three professional video's on Environmental Management, the use of herbicides and the servitude maintenance – script writer and editor, PrentjiesWinkel Studios.
- Courses; Environmental management, legislation and plant identification courses mainly for Eskom
- Speaker at IAIA international, Portugal, on public participation for successful development in a developing country
- Guest speaker; UtrechtUniversity, Development within a developing country with meaningful Environmental consideration
- Netherlands Department of Water and Environmental Affairs; (Rykwaterstaat), their guest to different development projects
- Funds for development projects; European Development Bank; STOAS in the Netherlands
- Advisory to local municipalities; e.gGaleshewe open space (Sol Plaatjie municipality); Sol Plaatjie
Kimberley municipality on environmental management systems and development strategies;
Magareng (Warrenton) municipality on spatial development and infrastructure development;
Dikgatlong (Barkley West) municipality on development strategy and project opportunities
Phokwane (Hartswater) municipality, issues, development strategies and opportunities for projects.
- Presentations: Development scenarios and environmental impacts to:
Kimberley Business Forum
Various local municipalities
- Work groups and associations: Strategic Environmental Assessments;
- Environmental Planning Professions Interdisciplinary Committee for the Southern Cape on different projects
- International Association on Impact Assessment
- Development feasibility study for Development Bank of Southern Africa (DBSA);

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Language capability

| | Speaking | Reading | Writing |
|-----------|-----------------|----------------|----------------|
| English | Excellent | Excellent | Excellent |
| Afrikaans | Excellent | Excellent | Excellent |

Date **May 2014**



CURRICULUM VITAE

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|-------------------------|---|
| Company Name | Lidwala Environmental & Planning Services |
| Name | Marinus Axel Boon |
| Date of birth | 15.10.1981 |
| Profession | Environmental Assessment Practitioner |
| Position | Environmental Professional |
| Start date with LIDWALA | Jul 2012 - Permanent full-time staff member |
| Relevant experience | 10 years |

Qualifications

- Nat. Dip. Nature Conservation obtained from the UNISA, 2008.
- B.Sc. Honours in Environmental Management obtained from the UNISA, 2012.

Certificates:

- Environmental Law for Environmental Managers, North-West University (NWU), 2011
 - ISO 14001: 2004 Lead Auditor Course (DQS German Association for Accreditation), 2010
 - Tools for Wetland Assessment – Certificate of Competence, Rhodes University, 2012
-

Affiliation and accreditation

- Member of the International Association of Impact Assessment of South Africa (IAIASa).
 - Member of the South African Wetland Society
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Specialisation

- Integrated environmental management
 - Environmental impact assessments
 - Environmental management programmes and plans
 - Environmental control and law enforcement
 - Environmental training
 - Environmental Auditing and compliance monitoring (Environmental Control Officer)
 - Liaison with Landowners, Government and other Interested and Affected Parties
 - Research
 - Project management
 - Environmental best practice
 - Wetland Assessment
 - Surface water reporting
 - Water Use Licence Applications
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Career summary

- July 2012 to date: **LIDWALA** – Environmental Professional
 - March 2012 – June 2012: **Savannah Environmental** – Environmental Consultant
 - July 2008 – February 2012: **NCC Environmental Services** – Environmental Manager
 - July 2006 – June 2008: **Department of Environmental Affairs and Tourism (DEAT) MCM** – Senior Marine Conservation Officer (Environmental Protection Vessels and Compliance)
 - November 2004 – June 2006: **Overstrand Municipality Environmental and Conservation Services** – Nature and Marine Conservation Officer
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Work Experience

Electricity Sector

- Project Manager (current project) for the Environmental Impact Assessment of Weskusfleur Substation at Koeberg (Eskom).
- Project Manager (current project) for the Environmental Impact Assessment of the 1GW Upington Solar Park (CEF).
- Project Manager for the Environmental Impact Assessment of the 1GW Siyathemba Solar Park near Prieska (CEF).
- Project Manager for the Environmental Basic Assessment of the 600MW OCGT Ankerlig Power Station Expansion near Atlantis (Eskom).
- Basic Assessment and Environmental Management Programme for the proposed Amandla Welanga Solar Energy Facility, Northern Cape (for Terra Solar).
- Basic Assessment and Environmental Management Programme for the proposed Dida Solar Energy Facility, Northern Cape (for Terra Solar).
- Basic Assessment and Environmental Management Programme for the proposed Inkululeko Solar Energy Facility, Northern Cape (for Terra Solar).
- Basic Assessment and Environmental Management Programme for the proposed Southern Cross Solar Energy Facility, Northern Cape (for Tiquen Trading).
- Basic Assessment and Environmental Management Programme for the proposed Tutwa Solar Energy Facility, Northern Cape (for Flint Ridge Trading).
- Project team for the Tollie Solar Energy Facility, Northern Cape (for Terra Solar).

Mining Sector

- Project team for the Basic Assessment and Environmental Management Programme for the Expansion of the Ebenaezer Pit at the Koffiefontein Mine (for Koffiefontein Empowerment JV).
- Project team for the Inyanda Mine Kalbasfontein Expansion Project: EIA, EMP and IWULA (for Exxaro).
- Prospecting application in respect of Manganese and Iron Ore on Portion 5 of Farm Bermolli No. 583 and the remaining extent of the farm Sunnyside No. 542, Northern Cape (for Bravospace 273 CC)

Roads

- Project Manager (current project) for the Basic Assessment, Environmental Management Programme and IWULA for the Rehabilitation of National Route N11 Section 10 from Middelburg to Loskop Dam and Kranspoort Safety Improvement (HHO).

- Project Manager (current project) for the Replacement of culvert on provincial road P168-1 between Ermelo and Lothair, 8km from the N17 Environmental Management Plan and Water Use Licence Application

Waste

- Project Manager for the Danielskuil Waste Site Environmental Impact Assessment Basic Assessment (for Kgatelopele Municipality).

Training

- Provide training to ECO's for various projects (solar, pipeline and transmission projects).
- Preparing training material (ECO guideline and practical guide) and project templates for construction environmental monitoring for Solar Energy projects.
- Conducted environmental awareness training on various projects for contractors and clients.

Environmental Control Projects

- Internship Environmental Control Officer for the construction of the Ankerlig Open Cycle Gas Turbine (OCGT) Power Station at Atlantis, Western Cape (ESKOM).
- Environmental Control Officer for the UraminTrekkoopje Mine Integration Project in Namibia. The project comprised the construction of 105 km of 220 kV, 132 kV transmission lines and four electrical substations (Trans Africa Projects).
- Environmental Control Officer for the Construction of Sterrekus (Omega) 765kV Electrical Substation and line turn-ins near Koeberg, Western Cape (ESKOM).
- Environmental Control Officer for the Longlands Estate Development, Vlotenberg, Stellenbosch (SLC Development Services).
- Environmental Control Officer which includes monthly compliance auditing for the Eerste River Integrated Housing Development on Erf 105 and 107 (SEF).
- Environmental Control Officer which includes monthly compliance auditing for the construction of the Sonkwasdrift water pipeline near Tulbagh (SEF).
- Environmental Officer for the provision of bulk infrastructure and road rehabilitation, Cape Point (SANPARKS).
- Environmental Officer which includes monthly compliance auditing for the construction of the MTN Hub in Worcester (SEF).
- Environmental Control Officer for the Emergency Salvage of the Seawin Sapphire, Melkbos, Western Cape. This included the full rehabilitation of the environmental sensitive dune ecosystem area, the handover of the area and the close out environmental report to the authorities (DEAT, DEA&DP and the City of Cape Town) of this first of its kind project in S.A (ALE).

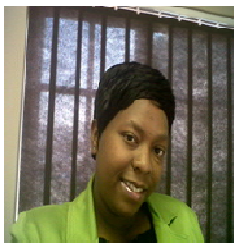
Compliance Monitoring, Control, Surveillance and Enforcement

- M.A.R.I.N.E.s Management Action for Resources of Inshore and Nearshore Environments – Overstrand Municipality Department of Environmental Conservation Services.
- Implementing and enforced the provisions of the Marine Living Resources Act 18 of 1998, and other Environmental legislation by conducting sea and land patrols.
- Ensured the effective prosecution of infringements by completing documents pertaining to criminal cases and giving evidence in a court of law.
- Issuing J534 fines for environmental contraventions.
- Environmental Education and awareness -do a showcase to further Marines Project.

- Liaise with relevant role players, the general public and fishing industry.
- Monitoring and conservation of estuaries to ensure compliance and the protection of them.
- Participate in the managing of monitoring and investigation of fishing vessels and fishing activities by the Directorates staff.
- Monitoring the landings of fish and fishing vessels.
- Assist and initiate investigations of the Department's Specialized Unit.
- Participating in special operations such as safeguarding endangered species, such as operation ORCA.
- Experience on working in close cooperation and completed combined operations with the South African Police Service (SAPS), SANPARKS, Organized Crime, SA Navy and other relevant NGO's.
- Liaise with relevant role players, the general public and fishing industry.
- Assist and initiate investigations of the Department's Specialised Unit.
- Conduct inspections in the fishing industries, restaurants ,fish shops,etc
- Training in marine resource monitoring, responsible fisheries, organized rehabilitation and conservation of Abalone, SAPS – special weapons and tactics course and arresting techniques.

Conferences

- Received an award for best written submission in the Hidden Talent section at the National Conference of International Association of Impact Assessment of South Africa (IAIAsa) at the Wild Coast Sun 2011 (Showcased environmental best practice in Integrated Environmental Management for the project Salvage of the Seawin Sapphire).



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| Company Name | Lidwala Environmental & Planning Services |
| Date of birth | Moseketsi Valencia Mochesane 13.10.1986 |
| Profession | Environmental Consultant |
| Start date with LIDWALA | Jan 2013 - Permanent full-time staff member |
| Relevant experience | 1 year 6 months |

Qualifications

- BSc Botany, University of the Free State
 - BSc (Hons) Environmental Management, University of South Africa
-

Specialisation

- Flora Studies
 - Biodiversity studies
 - Environmental Impact Assessments (EIA's)
 - Basic Assessments
 - Environmental Management Programmes/Plans
 - Environmental management programmes and plans
 - Research
 - Social Impact Assessments and reporting
-

Career summary

- 2013 – current: Lidwala Consulting Engineers (SA) (Pty) Ltd
 - May 2009 – April 2010: Dedet Provincial office, Mpumalanga
 - Jan 2007 - Dec: University of the Free State
 - July 2006 – Dec: University of the Free State
-

Work Experience

- Junior Consultant on the vegetation study and reporting for the Tabor-Nzhelele project
- Vegetation study for the CEF solar park project
- Researched and compiled report for extreme weather in South Africa for Teraco
- Assisted with the drafting of adverts and background information documents
- Researched and assisted in the compilation of a social impact assessment report for Exxaro, Majuba and Tutuka
- Assisted in the compiling an EMPr for Koffiefontein Mine
- Compiling of the scoping report for Weskusfleur substation project

- Compiling scoping report for the Danielskuil landfill site
- Compiling the scoping report for the 1GW Upington Solar Park
- Assistant Environmental consultant for Exxaro (Pegasus) mine expansion
- Environmental consultant for the 1GW Upington Solar Park
- Environmental Consultant for the Emfuleni Environmental Management Framework
- Environmental Consultant for the Daniëlskuil landfill site
- Public Participation for the Daniëlskuil landfill site

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|-------------------------|---|
| Company Name | Lidwala Consulting Engineers (SA) Pty Ltd |
| Date of Birth | Bongji Mhlanga 10.11.1987 |
| Profession | Environmental Practitioner |
| Position | Public Participation Practitioner |
| Start date with LIDWALA | 1 April 2011 |

Qualifications

- National Diploma: Environmental Management: Cape Peninsula University of Technology (2009)
-

Certificates

- Certificate in Understanding Environmental Impacts Assessments- Wildlife and Environment Society of South Africa (WESSA) (2009)
-

Affiliation and accreditation

- Environmental Impact Assessment (2010 Regulations) Training with SEF (August 2010)
 - Public Participation Training with SEF (April 2010)
 - Environmental Impact Assessment Training with SEF (October 2009)
 - Environmental Impact Assessment Training with WESSA (April 2009)
-

Current Studies

- Honours: Environmental Management: University of South Africa
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Professional Affiliation

- International Association for Impact Assessment (IAIA)
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CURRICULUM VITAE

Specialities

- Public Participation Process (PPP)
 - Basic Assessments Reports(BAR's)
 - Environmental Management Plans (EMP's)
-

Career summary

- April 2011 - To date: Environmental Practitioner at LIDWALA SA.
 - January 2010 – March 2011: Environmental Assistant at Strategic Environmental Focus (Pty) Ltd
 - June 2009 – December 2009: Intern at Strategic Environmental Focus (Pty) Ltd
-

Work Experience

- Conducting Public Participation Process within Basic Assessments and Environmental Impact assessment as required by the National Environmental Management Act.
 - Other key experience areas are linked with compiling and conducting:
 - Basic Assessment Reports (BAR's)
 - Environmental Management Plans (EMP's)
 - Water Use License Applications (WULA's)
 - Environmental Control Office (ECO) work
 - Preparation of:
 - Notice of intents
 - Application forms for environmental authorization
 - Appeal letters for negative environmental authorization received
 - Authority follow up
 - Drafting of proposals
 - Project administration work
-

Summary of Projects Worked on

Lidwala Consulting Engineers (April 2011 to date)

- Public Participation on the Emfuleni Environmental Management Framework
- Public Participation on the Proposed Construction Of A New University And Associated Infrastructure In Kimberley, Northern Cape Province
- Public Participation on the Proposed Construction Of A New University And Associated Infrastructure In Nelspruit, Mpumalanga Province
- Environmental Control Office work on the failed culverts on the P168-6, between Ermelo and Lothair
- Public Participation on the Proposed Continued Ashing At The Existing Ash Disposal Facilities, Tutuka

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Power Station, Mpumalanga Province

- Public Participation on the Proposed Continued Ashing At The Existing Ash Disposal Facilities, Majuba Power Station Ash Disposal facility
- Public Participation on the Proposed EIA, EMP And WULA as Part of an amendment for the New Boxcut, Opencast Mine and Mining Related Infrastructure for the Pegasus South Minipit, Mpumalanga Province
- Public Participation on the Proposed 1x400kv Tabor- Bokmakirie (Nzhelele) And 4x 250mva 400kv/132kv Nzhelele Main Transmission Station (MTS), Limpopo Province
- Public Participation on the Proposed Retrofit of the Existing Electrostatic Precipitator with Fabric Filter Bags at the Grootvlei Power Station Unit 2,3 and 4, Mpumalanga Province
- Public Participation on the Proposed Closure of the existing Danielskuil Landfill Site and the Establishment of a New Landfill Site for Danielskuil, Northern Cape Province
- Public Participation on the Rehabilitation of the N11 Section 10 from Middelburg to Loskop Dam and the Kranspoort Safety Improvement, Mpumalanga Province
- Environmental Practitioner on the Construction of a Road And Bridge over the Komati River, Mpumalanga Province
- Public Participation on the Proposed Extension of Ash Dams at Hendrina Power Station, Mpumalanga Province

Strategic Environmental Focus (June 2009 to March 2011)

- Mixed-use development on Holding 34, Montana Agricultural Holdings Ext. 163, City of Tshwane Metropolitan Municipality, Pretoria North, Gauteng
- Kiepersol Mixed-use development
- Ussher site mixed-use development
- Extension of Avalon Cemetery
- Dunnottar Substation
- Brooklyn Embassy: WULA
- Construction of Eskom KDS Homestead 132Kv Powerline

Language capability

| | Speaking | Reading | Writing |
|-----------|-----------------|----------------|----------------|
| English | Good | Good | Good |
| Afrikaans | Fair | Good | Fair |
| Zulu | Good | Good | Fair |
| Setswana | Good | Fair | Fair |
| Sesotho | Good | Good | Fair |
| IsiXhosa | Good | Fair | Fair |

Date

April 2014

CURRICULUM VITAE



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|-------------------------|--------------------------------------|
| Company Name | Lidwala Consulting Engineers |
| Date of birth | Lionel Skeffers 23.06.1986 |
| Nationality | South African |
| Profession | Administration |
| Position | Public Participation Assistant |
| Start date with LIDWALA | February 2007 |
| Relevant experience | 8 Years |

Qualifications

- Senior Matric Certificate – 2004
 - NQF Level 4 Certificate on Local Economic Development – 2005
 - Office Administration certificate- Damelin 2009
 - National Certificate: Business Administration Services – NQF Level 3- CBM Training 2014
-

Specialities

- Administrative Duties
 - General Public Participation Processes
-

Career summary

- 2007 to date: **LIDWALA**www.lidwala.com
 - 2006: **CONSULTA RESEARCH** – Community cliental services
 - 2005/2006: **SIYATHEMBA MUNICIPALITY** – LED/IDP learner
-

Work experience

OTHER MANAGEMENT AND CONTROL SYSTEMS:

- Completing bid documents and database applications
- Translation of background information documents and adverts
- Handling general administration duties i.e. typing of letters, reports and filing of all the documents.
- Providing support in respect of faxing, binding, scanning and photocopying.
- Receiving visitors and attending to them accordingly.

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- Handling of petty cash float of office.
- Ordering stationery for the office staff. Purchasing groceries for office use.
- Maintaining office automations to ensure that are working accordingly.
- Coordinating events i.e. Refreshments, birthdays parties, office functions.
- Make travel and accommodation bookings for Office staff.
- Electronic Mail; Retrieving and forwarding e-mail.

Public Participation Experience

- Assistance with organizing Siyathemba Local Municipality IDP Review meetings 2005/2006.
- Assistance with Public Participation Process for the Proposed Tabor- Nzhelele 400 kV Powerline EIA project 2012/2013, Limpopo Province.
- Assistance with Public Participation Process for the Proposed 1 GW Siyathemba Solar Park EIA project 2013/2014, Northern Cape Province.
- Assistance with Public Participation Process for the Proposed Weskusfleur Sub-station EIA project 2013/2014, Western Cape Province.

Surveying Experience

- Assisting with Surveying work for Mine Closure Plan for Koffiefontein Mine (PetraDiamonds).
- Assisting with Surveying work for Mine Closure Plan for Kimberley Underground Mine (PetraDiamonds).

Language capability

| | Speaking | Reading | Writing |
|-----------|-----------------|----------------|----------------|
| English | Excellent | Excellent | Excellent |
| Afrikaans | Excellent | Excellent | Excellent |

Date **March 2014(Update)**

CURRICULUM VITAE



| | |
|-------------------------|---------------------------------------|
| Company Name | Lidwala Consulting Engineers |
| Date of birth | Katie Sassenberg 02.06.1972 |
| Nationality | South African |
| Profession | GIS Specialist |
| Position | GIS Technologist |
| Start date with LIDWALA | May 2009 |
| Relevant experience | 17 Years |

Qualifications

- Professional GIS Diploma, UNIGIS. (In progress, to be completed by 20 April 2014)
 - Document Writing Course, IIR Training (2010)
 - Time Management Course, Kundiza Training and Consulting (2010)
 - Idrisi Spatial Analyst, In-House (2007)
 - ArcIMS, ESRI (2005)
 - Advanced ArcGIS, Esri (2005)
 - Microstation Descartes, Bentley South Africa (1996)
 - Microstation Geographics, Bentley South Africa (1996)
 - Caddie Professional, Advanced Computer Solutions (1995)
 - Caddie Basic, Advanced Computer Solutions (1993)
 - T2 Civil Engineering, Technikon Witwatersrand (1990, 1991)
 - Senior Certificate, Technical High School (HTS) (1989)
-

Affiliation and accreditation

- GISc Technologist – registration nr (G0802)
 - The South African Council for Professional and technical Surveyors (PLATO)
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Specialities

- Design and implementation of corporate GIS database
- Database design and administration
- Spatial data capture, analysis, maintenance and management of complex geodatabase systems
- Skills training
- Customised cartography

K SASSENBERG CV

Software Skills

- Esri Software – ArcGIS, ArcInfo
 - Quantum GIS (QGIS)
 - Microsoft Word, Excell, Projects, Powerpoint, Access
 - PostgresSQL (opensource database)
 - GRASS (Geographic Resources Analysis Support System)
-

Career summary

- May 2009 – Present: **LIDWALA** www.lidwala.com - GIS Technologist
 - Aug 2005 – May 2009: **ENVIRGIS Pty Ltd** - GIS Technician
 - May 1996 – Aug 2005: **NETGROUP SA (Pty) Ltd** - GIS Technician
 - Jan 1992 – May 1996: **BIRD MACHINES (Pty) Ltd** - Mechanical Draughts person
 - Jan 1990 – June 1991: **KEEVE STEYN CIVIL ENGINEERS** - Civil Draughts person
-

Work experience

- For the Namibia Millennium Challenge (MCA) project, I've performed the following activities; spatial data manipulation and analysis, customized mapping and generating of the training manual.
- I worked on a project for Wandima Environmental Services to calculate the sensitivity rating for a 88KWA power-line. In order to calculate the EIA, all the GIS layers received from each specialist area of study (Avifauna, Visibility, Ecological, Heritage, Wetland) was combined and analyzed to form one integrated sensitivity layer.
- I have been working on the Road Asset Management System (RAMS) for Mpumalanga Department of Roads and Transport, where I am involved with GIS data maintenance, interrogation and management together with creating customized maps and map production. I have also been heavily involved in creating Open Geospatial Consortium (OGC) compliant Styled Layer Descriptor (SLD) schemas for the Web Map Service (WMS) element of the RAMS. Other responsibilities at Lidwala include website design, spatial data manipulation and integration, GIS project development and consultation regarding corporate GIS.
- For the TSB project, I was involved in creating the TSB database for verifying field information. Together with this, I created an ArcGIS data driven map project with automated summary tables for easy visualization of fields per Grower code. Using the Pongola GIS database, it becomes possible for example, to monitor areas under sugarcane, observe changes and demarcate development areas. GPS data can be imported into GIS for fast production of maps for mapping of small grower lots and field demarcation.
- Another project in which I am deeply involved at Lidwala is the Wetland delineation and riparian habitats within forestry plantations across Mpumalanga, Limpopo and Kwazulu-Natal. The essence of this project is to propose a structured wetland and riparian delineation procedure. Field methodology is outlined together with a supportive post-reporting process that includes spatial data (GPS and GIS) to accurately identify and delineate the spatial extent of wetland and riparian habitats with the intention of preventing past and future commercial afforestation in sensitive areas.
- For SAFCOL (South African Forestry Company Limited), I was part of a project team in developing a GIS to do a land capability study. The objective of the study was to determine the afforestation potential of available land in a buffer strip adjacent to SAFCOL's plantations; and to develop out grower scheme models to govern thereof. Analyses (financial & other) were conducted to determine the feasibility and most preferred structure to establish and manage the proposed out grower schemes.

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- Another project that I was involved in for SAFCOL was a study to determine the most effective way to apply forestry waste for the production of green energy (electricity). For this project, we had to identify the different sources of forestry waste within a 100km radius from Sabie (Mpumalanga) and determine the quantity and availability thereof. We had to describe and motivate the methodology used to identify sources and estimate volumes of waste. A cost analysis was conducted to determine if a delivered cost per ton for forestry waste over a 100km radius was feasible.
- When working for EnviroGIS, I was a consulting GIS Technician for York Timbers, Komatiland Forest and SAFCOL. At these respective companies I was part of a team in developing client corporate geodatabases making use of ArcSDE, Oracle and ArcIMS. After implementing the GIS, I was responsible for the maintenance of the implemented corporate GIS. In addition to this I also did forestry and environmental research, customized mapping as well as spatial analysis utilizing raster, vector and field data.
- For SAFCOL, I was involved in a timber flow project and was responsible for the collection, analysis and categorization of industry and field data relating to fiber-flow from Provinces areas and catchments to the processing plants. I was further involved in the development of a model based on these data to draw required information (to calculate the current standing volume, and also the current available volume).
- While working at NetGroup I was involved in the Emalahleni Local Municipality feasibility study regarding a utilities network where I had to gather and combine existing hardcopy data, field data and electronic data to compile a turnkey feasibility GIS.
- Another project done by NetGroup was an Mbombela land use management (spatial framework) system for local municipalities. I was part of a team that created the spatial database and was responsible for the management of existing and field data and the development of new datasets.

Language capability

| | Speaking | Reading | Writing |
|------------------|-----------------|----------------|----------------|
| English | Excellent | Excellent | Excellent |
| Afrikaans | Excellent | Excellent | Excellent |

Date **March 2014(Update)**

ANNEX 5. SHORT CV OF CONSULTANT:

SUMMARY OF EXPERTISE



Simon.Todd@3foxes.co.za

P.O.Box 71
Nieuwoudtville
8180
H: 027 218 1276
C: 082 3326 502

- Profession: Ecological Consultant
- Specialisation: Plant & Animal Ecology
- Years of Experience: 15 Years

Skills & Primary Competencies

- Research & description of ecological patterns & processes in Nama Karoo, Succulent Karoo, Thicket, Arid Grassland, Fynbos and Savannah Ecosystems.
- Ecological Impacts of land use on biodiversity
- Vegetation surveys & degradation assessment & mapping
- Long-term vegetation monitoring
- Faunal surveys & assessment.
- GIS & remote sensing

Tertiary Education:

- 1992-1994 – BSc (Botany & Zoology), University of Cape Town
- 1995 – BSc Hons, Cum Laude (Zoology) University of Natal
- 1996-1997- MSc, Cum Laude (Conservation Biology) University of Cape Town

Employment History

- 1997 – 1999 – Research Scientist (Contract) – South African National Biodiversity Institute
- 2000-2004 – Specialist Scientist (Contract) - South African National Biodiversity Institute
- 2004-2007 – Senior Scientist (Contract) – Plant Conservation Unit, Department of Botany, University of Cape Town
- 2007 Present – Senior Scientist (Associate) – Plant Conservation Unit, Department of Botany, University of Cape Town.

General Experience & Expertise

- Conducted a large number of fauna and flora specialist assessments distributed widely across South Africa, including a large number of renewable energy facilities. Projects have ranged in extent from <50 ha to more than 50 000 ha.
- Involved in all phases of renewable energy development, from ecological prefeasibility studies to pre-construction walk-through.
- Widely-recognized ecology specialist. Published numerous peer-reviewed scientific publications based on various ecological studies across the country. Past chairman of the Arid Zone Ecology Forum and current executive committee member.
- Extensive experience in the field and exceptional level of technical expertise, particularly with regards to GIS capabilities which is essential with regards to producing high-quality sensitivity maps for use in the design of final project layouts.
- Strong research background which has proved invaluable when working on several ecologically sensitive and potentially controversial sites containing some of the most threatened fauna in South Africa.
- Published numerous research reports as well as two book chapters and a large number of papers in leading scientific journals dealing primarily with human impacts on the vegetation and ecology of the arid and semi-arid parts of South Africa.
- Maintain several long-term vegetation monitoring projects distributed across Namaqualand and the karoo.
- Guest lecturer at two universities and have also served as an external examiner.
- Reviewed papers for more than 10 international ecological journals.
- Past chairman and current committee member of the Arid Zone Ecological Forum.
- SACNASP registered as a Professional Natural Scientist, (Ecology) No. 400425/11.

A selection of recent work is as follows:

Specialist Assessments:

Wind Farm Developments:

Proposed Spitskop Wind Energy Facility: Fauna & Flora Specialist Study For Impact Assessment. Savannah Environmental 2013.

Proposed Mainstream South Africa Springfontein Wind Energy Facility: Terrestrial Fauna & Flora Specialist Study for EIA. Savannah Environmental 2012.

Environmental Impact Assessment for the Establishment of the Wolseley Wind Farm, Western Cape Province. Fauna & Flora Specialist Report. Arcus Gibb 2012.

Proposed Eskom 300MW Kleinsee Wind Energy Facility. Fauna Specialist Report For Impact Assessment. Savannah Environmental 2012.

Proposed Inca Energy Swellendam Wind Energy Facility: Fauna Specialist Report For Impact Assessment. Savannah Environmental 2012.

Proposed Moorreesburg Wind Energy Facility: Fauna & Flora Specialist Scoping Report For Impact Assessment. Savannah Environmental 2012.

Terrestrial Ecology Specialist Study for the Proposed Establishment of a Renewable Energy Facility near Sutherland, Western and Northern Cape Provinces. Environmental Resources Management (ERM) 2011.

Roggeveld Wind Farm: Ecological and Biodiversity Assessment: Terrestrial Vertebrate Fauna & Botanical Specialist Study. Specialist Report for Environmental Resources Management (ERM). 2011.

Zen Wind Energy Facility. Fauna & Flora Specialist Impact Assessment Report. Savannah Environmental. 2012.

Proposed Project Blue Wind and Solar Energy Facility, Near Kliensee. Fauna Specialist Report For Impact Assessment. Savannah Environmental 2012.

Garob Wind Farm: Fauna & Flora Specialist Report for Impact Assessment. Savannah Environmental 2012.

Loeriesfontein Wind Energy Facility – Substation & Grid Connection. Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2012.

Noblesfontein Wind Energy Facility, Victoria West. Ecological Walk-Through Report. Savannah Environmental 2012.

Gouda Wind Energy Facility. Fauna And Flora Walk Through Report. Savannah Environmental 2012.

Noblesfontein Wind Energy Facility, Victoria West. Ecological Walk-Through Report. Savannah Environmental 2012.

Klawer Wind Farm: Ecological and Biodiversity Assessment: Terrestrial Vertebrate Fauna & Botanical Specialist Study. Specialist Report for Environmental Resources Management. 2011.

Lambert's Bay Wind Farm: Ecological and Biodiversity Assessment: Terrestrial Vertebrate Fauna & Botanical Specialist Study. Specialist Report for Environmental Resources Management. 2011.

Richtersveld Wind Farm: Ecological and Biodiversity Assessment: Terrestrial Vertebrate Fauna & Botanical Specialist Study. Specialist Report for Environmental Resources Management (ERM). 2011.

Witberg Wind Farm: Ecological and Biodiversity Assessment: Terrestrial Vertebrate Fauna & Botanical Specialist Study. Specialist Report for Environmental Resources Management (ERM). 2011.

Solar Energy Developments:

Specialist Vegetation Assessment for EIA. The Proposed Commercial Concentrated Solar Power Tower Facility and Concentrated Photovoltaic Facility at Van Roois Vley Near Upington. WSP 2012.

Proposed Photovoltaic Solar Energy Facility on Konkoonsies, Northern Cape: Fauna & Flora Specialist Report for Impact Assessment. EScience Associates 2012.

- Proposed Padrooi 13 Photovoltaic Solar Energy Facility, Northern Cape: Fauna & Flora Specialist Report for Impact Assessment. EScience Associates 2012.
- Adams Photovoltaic Solar Energy Facility, Northern Cape: Fauna & Flora Specialist Report for Impact Assessment. EScience Associates 2012.
- Proposed Photovoltaic Solar Energy Facility on Klein Swart Bast, Northern Cape: Fauna & Flora Specialist Report for Impact Assessment. EScience Associates 2012.
- Proposed Khoi-Sun Solar Facility. Fauna & Flora Specialist Report for Impact Assessment. Cape EAPrac 2012.
- Suurwater 62, Boesmanland 75mw Solar Farm, Aggeneys. Fauna & Flora Specialist Report for Impact Assessment. Cape EAPrac 2012.
- Karoshhoek Solar Valley Development, Upington: Fauna & Flora Specialist Impact Assessment Report. Savannah Environmental. 2012.
- O’Kiep 3 PV Solar Energy Facility on a Site In O’kiep Near Springbok, Northern Cape Province. Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2012.
- Photovoltaic Solar Energy Facility on Voëlklip, South of Springbok. Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2012.
- Namaqua Photovoltaic Solar Energy Facility on a Site North of Kamieskroon. Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2012.
- Inca Graafwater Photovoltaic Solar Energy Facility, Graafwater, Western Cape Province. Faunal Ecology Specialist Report for Impact Assessment. Savannah Environmental 2012.
- Aberdeen Solar Facility. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.
- Venetia Solar Facility. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.
- Southern Cross Solar Energy Facility: Southern Farm 425. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.
- Tutwa Solar Energy Facility: Portion 4 of Narries 7. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.
- Valleydora Photovolataic Solar Power Plant, Free State. Fauna & Flora Specialist Report. CSIR, 2012.
- Reddersburg Solar Facility - Fauna & Flora Specialist Assessment. CSIR, 2012.
- Melkvlei Photovolataic Solar Power Plant. Fauna & Flora Specialist Report for Basic Assessment. Specialist report for ERM. 2012.
- Ruinte Photovolataic Solar Power Plant. Fauna & Flora Specialist Report for Basic Assessment. Specialist report for ERM. 2012.
- Genoegsaam Solar Park. Fauna & Flora Specialist Report for Basic Assessment. Specialist report for ERM. 2012.
- Genoegsaam Solar Park. Fauna & Flora Specialist EIA Report. Specialist report for ERM. 2012.

Graspan Solar Facility. Fauna & Flora Specialist Report for Impact Assessment. Specialist report for ERM. 2012.

Olyven Kolk Solar Power Plant, Northern Cape: Botanical and Faunal Specialist Assessment. Specialist Report for Environmental Resources Management (ERM). 2011.

Skuitdriфт Solar Facility. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Cape EAPrac. 2012.

Beaufort West Solar Facility, Erf 7388 - Fauna & Flora Specialist Assessment. Specialist Report for Cape EAPrac. 2012.

Khoi-Sun Solar Facility. Fauna & Flora Specialist Scoping Report. Specialist Report for Cape EAPrac. 2012.

Boesmanland Solar Farm. Fauna & Flora Specialist Scoping Study. Specialist Report for Cape EAPrac. 2012.

Bitterfontein Solar Plant - Fauna & Flora Specialist Assessment. Specialist Report for Cape EAPrac. 2012.

Power Lines/Grid Connections:

Karoshoek Grid Integration Infrastructure. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.

Garob to Kronos Power Line - Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.

Loeriesfontein Wind Energy Facility – Substation & Grid Connection. Fauna & Flora Specialist Report for Basic Assessment. Specialist Report for Savannah Environmental. 2012.

Gouda Wind Energy Facility – Grid Connection. Walk-Through of Overhead Power Line - Gouda WEF to Eskom Windmill Substation. Specialist Report for Savannah Environmental. 2012.

Proposed Kappa-Omega 765 KV Transmission Line. Fauna, Flora & Ecology Walk-Through Report. Specialist Report for ACER Africa. 2013.

Infrastructure/Mining Developments:

Proposed Establishment of the Gamsberg Zinc Mine, Concentrator Plant and Associated Infrastructure near the Town of Aggeneys, Northern Cape. Fauna & Flora Specialist Report For ESIA. ERM 2013.

Pella Water Board – Infrastructure Upgrade. Fauna & Flora Specialist Report for Basic Assessment. Environmental Resources Management 2012.

Transnet Manganese Ore Line Upgrade. Fauna & Flora Specialist Report for Basic Assessment. Environmental Resources Management 2012.

Proposed Mamatwane Compilation Yard, Northern Cape: Fauna & Flora Specialist Report for Impact Assessment. Environmental Resources Management 2013.

Rare Earth Separation Plant Near Vredendal, Western Cape Province. Fauna & Flora Specialist Report for Basic Assessment. Savannah Environmental 2012.

Improvements to the Ou Kaapse Weg / Silvermine Road Intersection. Specialist Faunal Study For Basic Assessment. Khula Environmental Consultants, 2012.

Upgrading of Tourism Facilities at Goegap Nature Reserve. Specialist Ecological Assesment. Van Zyl Environmental Consultants. 2012.

Plant Sweeps on Portion 2 of the Farm Demaneng 546, Kuruman District, Northern Cape Province for SA Manganese. 2011.

Strategy/Conceptual Documents:

Renewable Energy Sector Spatial Planning Tool: To Form Part of the NDM Green Economy Strategy. Conservation South Africa, 2013.

Terrestrial Environment: Characteristics and Categorization. Contribution to the development of standards for EIA processes on behalf of the DEA. Anchor Environmental 2012.

CURRICULUM VITAE
Johan Abraham van Schalkwyk

PERSONAL PARTICULARS

Date of birth: 14 April 1952
Identity number: 520414 5099 08 4
Marital status: Married; one daughter
Nationality: South African

CURRENT POSITION

Head of Research: National Cultural History Museum.

CURRENT ADDRESS

Work:
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62 Coetzer Ave, Monument Park, Pretoria, 0181
Tel/Fax: (012) 347 7270; 076 790 6777; E-mail: jvschalkwyk@mweb.co.za

ACADEMIC QUALIFICATIONS

BA. – 1976 (UP)
BA. (Hons.) Archaeology - 1978 - (with distinction) (UP)
Post Graduate Diploma in Museum Science – 1979 (UP)
BA. (Hons.) Anthropology - 1981 - (with distinction) (UP)
MA. Anthropology – 1985 (UP)
D. Litt et Phil (Anthropology) – 1996 (UNISA)

NON ACADEMIC QUALIFICATIONS

12th HSRC-School in Research Methodology - July 1990
Dept. of Education and Training Management Course - June 1992
Social Assessment Professional Development Course - 1994
Integrated Environmental Management Course, UCT - 1994

EMPLOYMENT RECORD

1978 - present: National Cultural History Museum, Pretoria
1976 - 1977: Archaeology Department, University of Pretoria

PROFESSIONAL EXPERIENCE

1992 - present: Senior researcher: Head of Department of Research. Manage an average of seven researchers in this department and supervise them in their various research projects. Did various projects relating to Anthropology and Archaeology in Limpopo Province, Mpumalanga, North West Province and Gauteng.
1978 - 1991: Curator of the Anthropological Department of the Museum. Carried out extensive fieldwork in both anthropology and archaeology
1976 - 1977: Assistant researcher responsible for excavations at various sites in Limpopo Province and Mpumalanga.

- Curated various exhibitions at different museums. Topics range from ceramics, beadwork and woodcraft to Iron Age archaeology.

- Have done extensive work in the field of heritage impact assessments in Limpopo Province, Gauteng, Mpumalanga, North West Province, KwaZulu-Natal, Western Province, Botswana, Lesotho and Swaziland.
- Did a number of projects regarding the development of arts and crafts and community tourism – Tlokwa, Hananwa, Swazi.

PROFESSIONAL ACCREDITATION

Association for Southern African Professional Archaeologist: Principal Investigator for Iron Age, Colonial Period and Industrial Heritage. Membership no.: 164.

MEMBERSHIPS

Member, Association for Southern African Professional Archaeologists

Member, Anthropology Southern Africa

Member, African Studies Association, Smithsonian Institute, Washington

PUBLICATIONS

Published more than fifty papers on topics relating to anthropology, archaeology, history and impact assessment in various scientific journals - a complete list can be supplied on request.

HERITAGE IMPACT ASSESSMENT

Did more than 800 impact assessments (archaeological, anthropological and social) for various departments and companies. Projects include roads, pipelines, powerlines, dams, mining, water purification works, historical landscapes, refuse dumps and urban developments.

Curriculum vitae: Ms E WEIDEMAN

Name : **WEIDEMAN, ELMIE**
 Date of Birth : 28 September 1984
 Profession/Specialisation : Landscape Architecture
 Years with Firm : 4
 Nationality : South African
 Years experience : 5

Key qualifications

Ms Weideman is a Professional Landscape Architect in Aurecon's Environmental and Advisory Services Unit. She completed her Master's Degree in Landscape Architecture in 2008, and has gained experience in various aspects related to landscape architecture. This has included report writing, research/data collection and analysis, fieldwork, conceptual design, urban planning and design, master planning, sketch plans, planting design, working/technical drawings, detailed design, 3D modelling, graphic presentations and photo montages.

She enjoys both the technical design (from conceptual stage through to detailed design and graphic presentations), as well as the environmental part of landscape architecture. In this field, she has mostly dealt with landscape rehabilitation, Environmental Management Programmes (EMPs), environmental auditing/monitoring and Visual Impact Assessments (VIAs). She has also been involved in various Green Building projects.

Ms Weideman has played a leading role in various national and international projects which have included other professionals, such as Environmental Practitioners, Civil and Structural Engineers and Town and City Planners. She is also comfortable with writing proposals and tenders, as well as presenting her work and communicating with clients. Ms Weideman has worked on various international projects in Nigeria, Kenya, Angola, Malawi, Liberia, Guinea, Abu Dhabi and Mozambique.

Employment record

| | |
|-------------------|---|
| 06/2010 - Date | Aurecon (previously Africon, Ninham Shand and Connell Wagner), Professional Landscape Architect |
| 01/2009 - 05/2010 | DDV Design Group, Candidate Landscape Architect |
| 01/2007 - 04/2007 | Newtown Landscape Architects (NLA), Student |
| 01/2006 | Eco Consult, Student |
| 01/2004 | InSite Landscape Architects, Student |

Experience record

Malanje Residential Project (Angola) 02/2014 Professional Landscape Architect. Aurecon Angola is involved with the design of infrastructure for an existing housing estate in Melange, located in the north of Angola. Involvement included a conceptual design for typical safe pedestrian walkways and green open space.

Upington Solar Park (Northern Cape, South Africa) 01/2014 Professional Landscape Architect. Aurecon has been appointed as visual sub consultant on both the scoping and Environmental Impact Assessment phase for the construction of a new solar farm in the Northern Cape.

SANBI Working for Wetlands (Gauteng North) 09/2013- 03/2014 Environmental Practitioner. Aurecon South Africa has been appointed by SANBI to compile, amongst other deliverables, various wetland rehabilitation reports. The Working for Wetlands programme weaves together the wise use of wetlands with employment creation and poverty alleviation. Using the rehabilitation of wetlands as a vehicle to achieve these outcomes, the programme follows an approach that centres on cooperative government and partnership creation with landowners, communities, civil society and the private sector.

Sasko Woodmead Wetland Rehabilitation (Natal, South Africa) 01/2014 – 02/2014 Professional Landscape Architect. Aurecon South Africa has been appointed to compile a wetland delineation plan and wetland rehabilitation plan after construction spoil material was placed within the

riparian zone. This involved specifications with regards to re seeding and shaping in order to return the wetland to its original pre construction state.

Plettenbergbay Magistrate Court (Plettenbergbay, South Africa) 10/2013 –date

Professional Landscape Architect. The DTI has appointed Aurecon South Africa as multi-disciplinary consultants in the design process of the Plettenbergbay magistrate court. Involved with the design of the landscape, focusing on water efficient plants endemic to the area.

Empire – Perth Corridors Strategic Area Framework (Gauteng, South Africa) 05/2013 – date

Professional Landscape Architect and Urban Designer. Johannesburg Development Agency has appointed Aurecon South Africa to undertake various studies in order to do a development framework. The development framework was based on the Corridors of Freedom concept, a new vision where the focus will be on well planned transport arteries, mixed use development, high density accommodation, supported by office buildings, retail development and opportunities for leisure and recreation. Individual involvement included an urban context analysis and the compilation for the urban vision and principles for green and open spaces within the framework. Further involvement included the urban design for certain focus areas, which included various passive and recreational green open spaces. (Johannesburg Development Agency JDA)

Turffontein Strategic Area Framework (Gauteng, South Africa) 05/2013 - date Professional Landscape Architect and Urban Designer.

Johannesburg Development Agency has appointed Aurecon South Africa to undertake various studies in order to do a development framework. The development framework was based on the Corridors of Freedom concept, a new vision where the focus will be on well planned transport arteries, mixed use development, high density accommodation, supported by office buildings, retail development and opportunities for leisure and recreation. Individual involvement included an urban context analysis and the compilation for the urban vision and principles for green and open spaces within the framework. Further involvement included the urban design for certain focus areas, which included various passive and recreational green open spaces. (Johannesburg Development Agency JDA)

Grundofs Complex, Germiston (Gauteng South Africa) 05/2013 – 08/2013 Professional Landscape Architect.

Owned and developed by Growthpoint, the complex consists of an office block and a warehouse. The office block is currently pursuing a green star certification through the Green star Office V1 rating scheme. The landscape was designed, based on xeriscaping principles this assists in the reduction of potable water by using plants which requires minimal amounts of water. (Growthpoint Properties)

Liberty Conditional Assessments (Gauteng, South Africa) 01/2013 – date Professional Landscape Architect.

Various Liberty Properties owned buildings in Gauteng were assessed. Proposals were made to make the landscape and irrigation system more sustainable. (Liberty Properties)

The upgrade of Simon Vermooten Road (Pretoria, South Africa) 01/2013 - date Professional Landscape Architect.

This project involved the widening of Simon Vermooten Road. Landscape proposals were made for the verge planting as well as the median. More attention was paid to focal planting on certain intersections. (City of Tshwane)

Nelson Mandela Square conditional assessment (Sandton, South Africa) 01/2013 -date Professional Landscape Architect.

This project involved a detailed landscape and irrigation assessment of Nelson Mandela Square. Proposals were made to introduce more sustainable measures into the current landscape design. (Liberty Properties)

Pampoennek (Hartebeespoort, South Africa) 11/2012-date. Professional Landscape Architect.

This project involves a proposed road running through Pampoennek in the Magaliesberg near the Hartebeespoort Dam. Specific focus will be placed on the rehabilitation and stability of the future 19m deep cutting running through different geological strata. (SANRAL)

MTC (Midrand, South Africa) 06/2012- date. Professional Landscape Architect.

The project involves the construction of a new building for Gautrain's Head Offices. The building will be assessed by the GBCSA (Green Building Council of South Africa) for Green Building design and as built status. The landscape design will also extend beyond the site boundaries into Grand Central Boulevard, forming a visual link between the Gautrain head office and the Midrand station. Responsible for the xeriscape landscape design around the building and the streetscape design linking the building with the station. The landscape design around the building will be conducted according to the WAT – 03 credit as determined by the Technical Manual Green Star S.A – v1. (Growth Point)

Nacala Port, FEL 4 Detail Engineering Design (Nacala, Mozambique) 06/2012 – 07/2012. *Professional Landscape Architect.* Aurecon was appointed as a multi-disciplinary team for the detail engineering design and planning of the Nacala port on the eastern coast of Mozambique. Provided input into the landscape planning and species selection around the main administration buildings. (Vale)

Saldanha Oil Tank Farm Visual Impact Assessment (Western Cape, South Africa) 03/2011 – Date. *Environmental specialist.* Aurecon has been appointed as visual sub consultant on both the scoping and Environmental Impact Assessment phase for an extension to the existing oil tank farm located close to Saldanha Bay. Involved for 6 person months. (Just Energy)

Simandou Iron ore project Front End Loading (FEL) 1 and 2 (Liberia and Guinea) 03/2011 - 10/2011. *Landscape Architect.* This project involves the construction of a railway line from Zogota Mine in Guinea to the coast of Liberia. Responsible for compiling the vegetation rehabilitation plan along the railway corridor. Involved for 6 person-months. (VALE).

St Helena Wind Farm (Western Cape, South Africa) 10/2011 - Date. *Environmental Specialist.* In this project, Aurecon was appointed to undertake a Visual Impact Assessment (VIA) for the construction of a wind farm on an existing farm 47km south of St Helena Bay, on the west coast of the Western Cape Province. Responsible for compiling the VIA. Involved for 1 person-month.(Just Energy).

Eastgate site analysis (Bedfordview, South Africa) 03/2011. *Candidate Landscape Architect.* Eastgate is a shopping mall situated in the East Rand of Johannesburg. Responsible for conducting a detailed site analysis and proposing best practice measures in order for the building to attain Green Building status. Involved for 1 person-month.(Liberty Properties).

Nacala Railway Corridor Front End Loading (FEL) 4 study (Mozambique/Malawi) 09/2011 - Date. *Candidate Landscape Architect.* Aurecon was appointed, as part of a multi-disciplinary team, to plan the railway and related infrastructure projects. This included substantial rehabilitation along the railway from Moatize in the western interior of Mozambique, through Malawi, to Nacala on the east coast. Aurecon's involvement also extended to the landscape planning of five main facilities and four Type 2 facilities along the alignment, as well as the compilation of the vegetation rehabilitation plan along the corridor. Specific emphasis was placed on sustainable and low-maintenance landscapes. Responsible for a landscape rehabilitation plan (including a full Bill of Quantities (BoQ)), and various sketches and detailed plans pertaining to the different railway facilities. Involved for 18 person-months. (Vale).

Master plan for a new town development (Ondjiva, Angola) 07/2011 - Date. *Candidate Landscape Architect.* Ondjiva is situated in the southern part of Angola. Aurecon, as part of a multidisciplinary team, was approached by the National Director for Urbanism and Housing to compile a master plan for a new town development situated close to the existing town. The overall concept was based on sustainable development, including economic, environmental and social aspects. Responsible for the design (master plan level) and visual presentation (including a 3D model) of open green spaces which included allotment gardens, playgrounds, sport facilities and a formal market area. Involved for 12 person-months.(Ministry of Urbanism and Construction/National Directorate for Urbanism and Housing).

Kriel Power Station extension (Kriel, South Africa) 06/2011 - Date. *Environmental Specialist.* In this project, Aurecon was appointed to compile an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) for an extension to the existing ash dam facilities. Responsible, as a member of the specialist team, for compiling a Visual Impact Assessment (VIA) focusing on two alternative sites. Involved for 3 person-months. (Eskom).

Ebony and Ivory Park planning and design (Ekurhuleni, South Africa) 04/2011 - Date. *Candidate Landscape Architect.* The project is situated within an informal settlement and involved urban design and planning, focusing specifically on sustainable and environmentally viable materials and construction techniques. The planning and design of open spaces was done in conjunction with the local community. Responsible for various 3D conceptual sketches, as well as the conceptual master planning for open urban spaces. Involved for 2 person-months.(Ekurhuleni Municipality).

Unifying standards for highway engineering practices (Abu Dhabi) 04/2011 - Date. *Candidate Landscape Architect.* The project entailed the unification of standards for highway engineering practices in Abu Dhabi. Responsible, as part of the team which reviewed various documents for the Department of Transport of Abu Dhabi, for working on a road landscape manual. Involved for 6 person-months.(Department of Transport of Abu Dhabi).

Aurecon water course management plan (South Africa) 11/2010 - 01/2011. *Environmental Specialist.* This project comprised a water course management plan for Aurecon. Responsible for compiling a water course management plan for the new Aurecon Lynnwood Bridge office building. The management plan applied to both the construction as well as the operational phase of the building. The management plan was compiled according to the Green Star SA office standards. Involved for 2 person-months.

Middelburg water reclamation project (Middelburg, South Africa) 03/2011. *Candidate Landscape Architect.* This project consisted of water reclamation in Middelburg. Responsible for designing a detailed planting plan and compiling a full Bill of Quantities (BoQ) for landscaped areas around the main administration building, holding dams and purification plant. Involved for 1 person-month. (BHP Billiton).

Sumbe conceptual layout and zoning (Angola) 03/2011. *Candidate Landscape Architect.* The town of Sumbe is situated on the west coast of Angola, bordering the Atlantic Ocean. This project involved the conceptual layout (to determine feasibility) and zoning of a proposed mixed-use and residential area. Responsible for the conceptual zoning and layout plan forming part of the initial feasibility studies. Involved for 1 person-month.

Eskom: Sigma - Theta power station power line (Pietermaritzburg/Empangeni, South Africa) 12/2010 - Date. *Environmental Specialist.* In this project, Aurecon was appointed to complete an Environmental Impact Assessment (EIA) and Environmental Management Plan (EMP) for the proposed power line from Albert Falls in the Natal Midlands to Empangeni for the establishment of two 400kV power lines, approximately 150km in length, to link the Sigma substation and the Theta substation. Responsible for the Visual Impact Assessment (VIA). Involved for 3 person-months. (Eskom).

Environmental auditing for Faurecia (Rosslyn, Gauteng) 2010 - 2011. *Environmental Control Officer.* Responsible for carrying out monthly site audits and compiling monthly environmental audit reports for an extension of the existing factory building within the Automotive Supplier Park. Involved for 3 person-months. (Automotive Supplier Park).

Environmental Management Plan for the 11kV substation at the Automotive Supplier Park (Gauteng, South Africa) 11/2010 - 06/2011. *Environmental Specialist.* This project entailed the construction of a new substation within the Automotive Supplier Park. Responsible for compiling an EMP, as well as weekly environmental auditing of the construction of the new substation. Involved for 4 person-months. (Automotive Supplier Park).

Environmental auditing for MSSL Global (Rosslyn, Gauteng) 2010 - 2011. *Environmental Control Officer.* The Gauteng Provincial Government initiated the Blue IQ concept as a mechanism for the upliftment of the provincial economy. One of the major components of this initiative was the establishment of the Gauteng automotive cluster, including the development of the Automotive Supplier Park and the expansion of the Ford Motor Company South Africa. Responsible for carrying out monthly site audits and compiling a monthly environmental report for a new factory building within the Automotive Supplier Park. Involved for 8 person-months. (Automotive Supplier Park).

Environmental auditing at the Ford Black Economic Empowerment (BEE) building in Silverton (Silverton, Gauteng) 2010 - 2011. *Environmental Control Officer.* As part of Ford's skills development and community upliftment programme, the company constructed a new incubator facility at its main offices in Silverton. Responsible for carrying out monthly site audits, as well as compiling a monthly environmental audit report for the new facility. Involved for 8 person-months. (Automotive Supplier Park).

Universidade Cato'lica master plan presentation (Luanda, Angola) 08/2010 - 09/2010. *Candidate Landscape Architect.* Responsible for the master plan presentation for the university campus, which included a variety of typical educational facilities. Involved for 1 person-month. (UniversidadeCato'lica).

Nova Vida master plan and presentation (Luanda, Angola) 08/2010 - 09/2010. *Candidate Landscape Architect.* The Angolan Government initiated the first phase of the Nova Vida township project in the late nineties. Nova Vida is a model of engineering and construction excellence aimed at improving the lives of impoverished communities. Responsible for the master plan design and presentation for the whole town, which included proposals for playgrounds, sport fields, road reserves and an office park precinct. Involved for 2 person-months. (Imogistine).

Matla Coal Mine expansion (Kriel, South Africa) 06/2010. *Candidate Landscape Architect.* Matla Coal Mine, owned by Exxaro, is situated 20km west of Kriel in the Mpumalanga Province in South Africa. This project involved the expansion of the existing mine which included the construction of various facilities.

Responsible for the design of the landscape around administration offices, accommodation facilities and maintenance buildings. This also involved the rehabilitation of disturbed areas and the compilation of a full Bill of Quantities (BoQ). Involved for 1 person-month. (Exxaro).

Master planning and detailed planting design for Bryanston extension 88 (Johannesburg, South Africa) 04/2010 - Date. *Landscape Architect.* This project involved a modern office building and landscaping next to the N1 Highway. Responsible for assisting with the sketch plan, visual presentation and planting design. Involved for 1 person-month. (Barrow construction).

Master planning, detailed design and cost estimates for the Allenridge urban upgrade (Free State, South Africa) 04/2010. *Landscape Architect.* The Free State Government was upgrading several Eastern Free State townships. This project included streetscaping, lighting and the design of open green spaces. Responsible for the conceptual design, proposals for sustainable street furniture and the main intersections. Also responsible for recommending plant species and urban guidelines for Allenridge and surrounding townships. Involved for 1 person-month.

Master planning and cost estimates of soccer fields for informal settlements (South Africa) 01/2010 - Date. *Landscape Architect.* FIFA had committed itself to financing various soccer fields for previously disadvantaged communities in certain key areas across South Africa. Responsible for designing a generic beach pitch soccer field. Involved for 1 person-month. (KfWEntwicklungsbank).

Nacala Railway Corridor Front End Loading (FEL) 3 study: rehabilitation and landscape architecture planning (Mozambique/Malawi) 2010. *Candidate Landscape Architect.* Aurecon was appointed, as part of a multi-disciplinary team, to plan the railway and related infrastructure projects. This included substantial rehabilitation along the railway from Moatize in the western interior of Mozambique, through Malawi, to Nacala on the east coast. Aurecon's involvement extended to the landscape planning of five depots along the alignment, as well as the compilation of the vegetation rehabilitation plan along the corridor. Specific emphasis was placed on sustainable and low-maintenance landscapes. Responsible for a landscape rehabilitation plan (including a full Bill of Quantities (BoQ)), and various sketch plans pertaining to the different facilities. Involved for 6 person-months. (Vale).

Multi-use, community-based, open green system (Free State, South Africa) 2009 - 2010. *Candidate Landscape Architect.* This initiative established a platform whereby a community's social, economic and environmental needs are met on various levels. It is a sustainable structure that ensures a higher quality of life, offering work, living and play opportunities close together. Responsible for designing a visual organogram, which takes into account the initial concept, process and intended outcome. Involved for 1 person-month.

Master planning, the integration of various facilities and detailed design of Kado Lakes mixed-use development (Abudja, Nigeria) 09/2009 - Date. *Landscape Architect.* The project was concerned with a new mixed-use development including a hotel, shopping centre, apartments, a water world theme park, a parkland space, an amphitheatre and an adventure golf component. Responsible for being involved with master planning the open green space and various cost estimates. Involved for 2 person-months. (Urban Shelter).

Master planning, detailed design and urban guidelines for Beitbridge border post (Beitbridge, South Africa) 08/2009 - Date. *Landscape Architect.* This expansive project involved changing vehicular and pedestrian circulation, whilst maintaining the existing infrastructure as well as adding various facilities. Responsible for assisting with the conceptual design of the truck stop and overnight facilities, as well as the visual presentation. Involved for 1 person-month.

Master planning and detailed design of the Erand Parkland development for Galencia (Midrand, South Africa) 08/2009 - Date. *Landscape Architect.* This project involved a residential development bordering a wetland system and stream. Responsible for the detailed design of the environmentally sensitive area, conceptual design of a timber boardwalk, guidelines for the parkland and visual presentation. Involved for 1 person-month. (Galencia Properties (Pty) Ltd).

Master planning, urban guidelines and detailed design of Perry's Farm (Hazyview, South Africa) 07/2009 - Date. *Landscape Architect.* Situated on the banks of the Crocodile River in the heart of Hazyview's development hub, this mixed-use development consists of a hotel, various open green structures, a shopping centre and a residential component. Responsible for being involved with the full development proposal, master planning for the hotel, landscape infrastructure guidelines, open green spaces as well as the visual presentation. Involved for 1 person-month. (Perry's Bridge Developments (Pty) Ltd).

Sketch plan and detailed design for House Bungane(Vereeniging, South Africa) 06/2009 - Date. *Landscape Architect.* House Bungane is located in an upmarket housing estate next to the Vaal River. Responsible for the sketch plan and visual presentation. Involved for 2 person-months. (Mr KJ Bungane).

Master planning, detailed design and working drawings for the Grasslands wedding venue (Bethal, South Africa) 06/2009 - 10/2009. *Landscape Architect.* The project consisted of a chapel and conference venue with terraces leading down to a dam with constructed water features and an island. Responsible for being involved with various detailed designs and working drawings for the decking, water features and outdoor function areas. Involved for 2 person-months. (Grasslands Conference and Wedding Venue).

Master planning and detailed design for the Innovation Hub, Enterprise Building number two (Tshwane, South Africa) 06/2009. *Landscape Architect.* This addition to the Innovation Hub complex included full landscape design with detailed design of the formal water feature and central courtyard. The building and landscape were designed according to the Green Star rating tool. Responsible for sketch plans, detailed design and visual presentation. Involved for 2 person-months. (The Innovation Hub Management Company).

Golf course design, urban design, detailed design and tender documentation for Thika Greens Golf and Lifestyle Estate (Thika, Kenya) 2009 - 03/2010. *Landscape Architect.* This project was one of the first of its kind in Kenya and is situated 30km from Nairobi. The golf course is designed as an 18-hole true African grassland championship golf course which straddles the natural drainage lines and allows for spectacular water holes where development is otherwise limited. Responsible for being involved with the conceptual design of the cultural centre, sport fields, entrance gate, general golf course landscaping, and cut and fill calculations. Involved for 1 person-month. (Thika Greens LTD).

Site Development Plan (SDP) and landscape guidelines for the Strelitzia and Malakite Developments (Kempton Park, South Africa) 03/2009 - Date. *Landscape Architect.* Situated alongside Greenstone Mall in Kempton Park, this combination of office parks and housing developments boasts a full SDP landscape design, plant selection and landscape guidelines. Responsible for the SDP and visual presentation. Involved for 1 person-month. (Balwin Properties).

Golf course design, detailed design and cost estimates for Bankenveld Golf Course (Witbank, South Africa) 2009 - 02/2010. *Landscape Architect.* This golf estate is situated next to Witbank Dam with an abundance of game and other wildlife. The project upgraded the existing portion of the estate and provided urban design of the new portion, which involved detailed roadscaping and landscape design for the entrances and clubhouse. Responsible for the detailed design of turning circles, planting design for the entrance gate, calculating bulk earthworks and cost estimates. Involved for 1 person-month.

Golf course design, urban design and detailed design for Maloney's Eye (Muldersdrift, South Africa) 01/2009. *Landscape Architect.* Situated near the Cradle of Humankind, Maloney's Eye is a mixed-use development which consists of a residential component, a golf course and a tourist section with an aqua-tainment centre on the northern border next to the banks of the Magalies River. Responsible for being partly involved in the conceptual design of fly fishing dams, streams and picnic areas. Involved for 1 person-month. (Redhouse 8 (Pty) Ltd).

Education

2008 : Master in Landscape Architecture, University of Pretoria, South Africa
 2007 : Honours in Landscape Architecture, University of Pretoria, South Africa
 2006 : Bachelors in Landscape Architecture, University of Pretoria, South Africa

Career enhancing courses

2012 : Português Língua Estrangeira – Nivel: A1. Alliance Francaise
 2011 : Basic Guidelines for Ecological Rehabilitation and Mine Closure, Centre of Environmental Management (CEM)
 2011 : Green Star SA Office Building v1 Accredited Professional Course, Green Building Council of South Africa (GBCSA)
 2010 : Academic International English Language Test (IELTS), British Council

Professional affiliations

Member, Institute of Landscape Architects of South Africa (ILASA)
 Professional Landscape Architect, South African Council for Landscape Architectural Professionals (SACLAP)
 Member, Land Rehabilitation Society of Southern Africa (LaRRSA)

Languages

| | Reading | Writing | Speaking |
|-----------|----------------|----------------|-----------------|
| English | Excellent | Excellent | Excellent |
| Afrikaans | Excellent | Excellent | Excellent |
| Dutch | Good | None | None |

Research projects

2008. "An evaluation of contemporary and historical theories in order to apply modern, technologically advanced, regenerative design principles on a small-scale urban site. The execution of the study is a new approach towards spatial integration". The University of Pretoria's South Campus.

Honours and awards

2008 - Cave Klapwijk prize for most ecologically responsible work of a final year student in the Landscape Architecture programme

2005 - Golden Key Honorary Award for Academic Excellence

Publications

Weideman, E. 2008. "Designing for living systems, a living laboratory for the University of Pretoria's South Campus". Dissertation publication.

Referees

| Company | Contact Person | Telephone nr. |
|------------------|-----------------------|----------------------|
| Aurecon | Mr Barend Smit | +27 (0)12 427 2768 |
| DDV Design Group | Mr Dino de Abreu | +27 (0)82 380 2313 |
| NLA | Mr Graham Young | +27 (0)82 462 1491 |

By my signature below I certify the correctness of the information above and my availability to undertake this assignment.

 Signature of Staff Member

 Date 26/05/2014

Curriculum vitae: Mr JJ GOOSEN

Name : **GOOSEN, JOHAN JACOBUS**
 Date of Birth : 27 October 1975
 Profession/Specialisation : Environmental Planner: landscape architecture/environmental planning
 Years with Firm : 2
 Nationality : South African
 Years experience : 15

Key qualifications

Johan is currently employed as a landscape architect and environmental planner at Aurecon. He has more than a decade of experience in landscape architecture and environmental planning in a wide variety of sectors. His expertise includes urban open space planning and regional environmental planning frameworks, end land use planning for mining and waste facilities and brownfields site re-development. He has further been involved in numerous projects requiring environmental screening, impact assessment/permitting, construction monitoring and visual impact assessment (VIA) for linear infrastructure such as roads, rail, bulk water, urban and rural property developments and the mining and metals sector.

Johan holds a Bachelor in Landscape Architecture, which he obtained from the University of Pretoria (UP) in 1998. He is a member of both the International Association of Impact Assessment (IAIA) and the Institute for Landscape Architecture in South Africa (ILASA). He is also a Registered Professional Landscape Architect with the South African Council for Landscape Architectural Professionals (SACLAP).

He has also been the co-writer and examiner of the environmental section of the SACLAP professional exam from 2009 to 2013, and regularly acts as external examiner for UP landscape architecture on environmental engineering aspects.

Employment record

| | |
|-------------------|--|
| 01/2012 - Date | Aurecon, Landscape Architect/Environmental Planner |
| 07/2010 - 12/2011 | Golder Associates Africa, Landscape Architect/Environmental Planner/Group Leader: Land Development |
| 2008 - 06/2010 | Golder Associates Africa, Landscape Architect/Environmental Planner/Line Manager: Land Development Division |
| 2003 - 2007 | African EPA (Pty) Ltd, Landscape Architect/Environmental Planner/Divisional Manager: Landscape Architecture and Environmental Management |
| 2000 - 2003 | @Land Landscape Architects cc, Landscape Architect/Geographic Information System (GIS) Specialist/Member |
| 1999 - 2000 | Willem Van Riet Landscape Architects & Ecological Planners, Landscape Architect |
| 1999 | Wehrs Gartenbau - Walsrode, German, Landscape Installation/Construction |

Management experience

| | |
|-------------|--|
| 2010 - 2011 | Division Leader of Land Development Division of Golder Associates. Reporting into the Business Unit Leader and management meeting. Responsible for managing and reviewing projects, and all required staff matters of the division as well as balanced scorecards and financial matters. |
| 2008 - 2010 | Line Manager of Land Development Division of Golder Associates, reporting into the Divisional Leader, responsible for managing projects and assisting with staff matters. |
| 2003 - 2008 | Divisional Manager of Landscape Architecture/Environmental Management Division of African EPA, responsible for managing projects and junior staff, as well as monthly reporting to management meetings to the Board of Directors. |
| 2001 - 2003 | Member of @LAND Landscape Architects and Ecological Planners CC, responsible for managing projects and junior staff. |

Experience record

Development of a socio-economic framework and category for Green Star South Africa rating tool (South Africa) 07/2012 - Date. *Project Leader.* The project entailed the development of a category framework for international use, a socio-economic category for the Green Star South Africa rating tool and five related socio-economic credits. Responsible for the overall project management and delivery and quality review of socio-economic specialist. Involved for 3 person-months. (Green Building Council of South Africa (GBCSA)).

Feasibility study for the treatment of acid mine drainage (AMD) (Gauteng Province, South Africa) 01/2012 - 02/2013. *Environmental Specialist.* Aurecon was appointed to conduct a feasibility study to address the treatment of acid mine drainage (AMD) from Gauteng's underground mining basins, by removing salts and metals, to protect the receiving water resources and reduce the dilution releases from the Vaal Dam to the Vaal Barrage. The work included investigating future scenarios, analysing alternative infrastructure options and exploring alternatives for implementation. Responsible for advising the client on environmental impact assessment (EIA) process options, assisting with the writing of the "Options for Discharge of Water and Waste" report and the analysis of project options against the receiving environment. Involved for 1 person-month. (Department Water Affairs (DWA)).

Zululand Anthracite Colliery (ZAC) environmental management plan (EMP) (KwaZulu-Natal Province, South Africa) 01/2011 - 10/2011. *Project Manager.* The project entailed the amendment of the existing environmental management programme report (EMPR) and a new National Environmental Management Act (NEMA) basic assessment application and process for a new open pit and ancillary activities. Responsible for the environmental impact assessment (EIA) project management and report writing, as well as the visual impact assessment (VIA) task as specialist. Involved for 3 person-months. (Zululand Anthracite Colliery (ZAC)).

Moreleta Spruit Adopt-a-River project (Gauteng Province, South Africa) 07/2011 - 12/2011. *Project Leader.* The project involved the compilation of a situation analysis, gap analysis and high-level action plan, as well as stakeholder engagement with relevant role players in the catchment in order to set up the Adopt-a-River forum. The situation analysis included historical context, land use and zoning, terrestrial and aquatic ecology, infrastructure and flood risk. A comprehensive geographic information system (GIS) database was also developed and made available for use via free software to relevant stakeholders. This was all deemed as Phase 1, with a view towards Phase 2 of the project, which entails the compilation of a state-of-the-rivers report as well as a master environmental management plan (EMP). Responsible for project management and environmental reporting. Involved for 4 person-months. (Department Water Affairs (DWA)/IKAMVA Strategic Insights).

Consolidation, update and amendment of the Lonmin environmental management programme report (EMPR) (North West Province, South Africa) 02/2011 - 08/2011. *Project Manager.* The project entailed the consolidation of all the approved environmental management programme reports (EMPRs) and amendments into two documents, one for each mineral rights area. This included updating activities according to more recent approvals in terms of other legislation and specialist studies, and the amendment of the environmental management plans (EMPs) for newly planned activities, all in terms of the Mineral and Petroleum Resources Development Act (MPRDA) and the National Environmental Management Act (NEMA) legislation. Responsible for project management, master planning and reporting of findings. Involved for 6 person-months. (Lonmin Plc).

Foskor Pyroxenite Expansion Project (PEP), Phase 2: visual impact assessment (VIA) (Mpumalanga Province, South Africa) 04/2010 - 09/2010. *Task Leader.* Golder conducted an environmental impact assessment (EIA) for the Foskor Pyroxenite Expansion Project (PEP), Phase 2. As part of the EIA, a visual impact assessment (VIA) was required, especially due to the close proximity of the project to the Kruger National Park and other tourism areas. The VIA included aspects such as site photo assessment with a global positioning system (GPS), geographic information system (GIS) Viewshed Analysis, adjacent land use analysis and mapping of human receptors. Responsible for the task management and VIA report. Involved for 2 person-months. (Foskor (Pty) Ltd).

Zanzibar Urban Services Project (ZUSP) visual impact assessment (VIA) (Dar es Salaam and Zanzibar, Tanzania) 06/2009 - 02/2010. *Task Leader.* Golder conducted an environmental impact assessment (EIA) for the Zanzibar Urban Services Project (ZUSP). As part of the EIA, a visual impact assessment (VIA) was required, especially due to the World Heritage Status of Stonetown in Zanzibar, and the high tourism usage of the area. The VIA included aspects such as site photo assessment with a global positioning system (GPS), developing a unique streetview assessment method, and analysis and mapping of culturally sensitive areas. Responsible for task management and VIA report. Involved for 4 person-months.

(World Bank).

Pixley Ka Seme integrated environmental management programme (IEMP) (Northern Cape Province, South Africa) 02/2009 - 06/2009. *Project Leader.* The project entailed undertaking a process to draw up an integrated environmental management programme (IEMP) for the district. The work included existing and desired status quo environmental reporting; an assessment of all integrated development planning (IDP) and spatial development frameworks (SDFs) of local municipalities; stakeholder engagement to determine the environmental challenges and needs of each local council and the drafting of the IEMP. Responsible for project management and environmental reporting. Involved for 5 person-months. (Pixley Ka Seme Local Municipality).

Greenbelt master plan and business case for the Galeshewe Urban Renewal Programme (GURP) (Northern Cape Province, South Africa) 02/2009 - 09/2009. *Project Leader of open space component.* The Galeshewe Urban Renewal Programme (GURP) is a residential project as part of a national urban renewal strategy started in 2001. GURP was funded by the Neighbourhood Development Partnership Grant (NDPG) under the National Treasury. Galeshewe, a township adjacent to Kimberley, was one of the nominated areas of this project. The Green Belt Project entailed strategic open space planning, and the delineation of green corridors/belts, with the primary focus on urban design principles in combination with ecological design methodologies. Concept designs and a business case were submitted in order to gain funding for the greening of Galeshewe. Responsible for project management, master planning, landscape design and drafting of the business case. Involved for 4 person-months. (Sol Plaatje Local Municipality).

Urban design framework (UDF) for Kimberley central business district (CBD) (Northern Cape Province, South Africa) 12/2008 - 08/2010. *Project Leader.* The project entailed the landscape design of six areas in the Kimberley central business district (CBD). This appointment developed into an urban design framework (UDF) for the Kimberley CBD on concept level, reporting into a municipal infrastructure grant (MIG) funding application in order to gain funding for the various projects. Responsible for project management, urban design, client liaison and drafting of the UDF. Involved for 8 person-months. (Sol Plaatje Local Municipality).

Visual impact assessment (VIA) for the proposed Meteor Estate in the Vredefort Dome area (Free State Province, South Africa) 12/2008 - 04/2009. *Specialist Landscape Architect (VIA task).* The project entailed visual assessment for a proposed residential estate on the boundaries of the Vredefort Dome World Heritage Site. This included site assessment, determination of visual baseline qualities, into modelling the changes the proposed development would have on the surrounding environment through geographic information systems (GIS) modelling and impact assessment. Responsible for project management, photo and impact assessment. Involved for 2 person-months. (AGES (Pty) Ltd Potchefstroom).

Environmental impact assessment (EIA) for Secunda Corridor (light industrial) (Mpumalanga Province, South Africa) 2008 - 2011. *Project Manager.* The project entailed an environmental impact assessment (EIA) and environmental management plan (EMP) for an urban development in Secunda. Responsible for conducting an EIA and compiling the EMP. Involved for 4 person-months. (Private Property Developer).

Environmental impact assessment (EIA) for The Hills Link Road (K40) (Gauteng Province, South Africa) 2008 - 2009. *Project Manager.* The project comprised an environmental impact assessment (EIA) and environmental management plan (EMP) for a new 5 km section of road. Responsible for conducting an EIA and compiling the EMP. Involved for 3 person-months. (Private Property Developer).

Visual impact assessment (VIA) for Benga mine and power plant (Tete Province, Mozambique) 08/2008 - 02/2009. *Specialist Landscape Architect.* Riversdale Mining, through their Mozambican arm Riversdale Mozambique Limitada (RML), appointed Golder for the full scope of feasibility and environmental assessment for the Benga Coal Resource adjacent to the Zambezi River. Part of the specialist studies included a visual impact assessment (VIA), complete with Viewshed analysis, digital terrain model, sections, artificial modelling of the mine process and infrastructure. Responsible for project management, site inspection and on-site photo assessments, report writing and impact assessment. Other duties included management of all geographic information systems (GIS) modelling. Involved for 5 person-months. (Riversdale Mozambique Limitada (RML)).

Mining end land use investigation for The Oaks Mine (Limpopo Province, South Africa) 06/2008 - 10/2008. *Project Leader.* The project entailed undertaking an investigation and public consultation process in order to identify alternative end land use options for their The Oaks Mine in Limpopo. This included advertisements in the prominent newspapers, and a detailed stakeholder engagement and tender process in

order to determine suitable candidates/communities with which to partner for end land use. Responsible for project management, identification of land use alternatives, stakeholder consultation, tender adjudication and recommendations. Involved for 4 person-months. (De Beers).

Waste site buffer zone feasibility studies (Gauteng and North West Provinces, South Africa) 06/2008 - 05/2010. *Specialist Landscape Architect (buffer zone planning).* Buffer zones required by legislation around general and hazardous waste sites cause the sterilisation of land. Feasibility studies for the alternative “some use” development options have been completed for Cape Gate in Vanderbijlpark (hazardous) and Mooiplaats private landfill site in Gauteng and Rustenburg Municipality (general waste), where health and safety perimeters per environmental media, and surrounding land use and social conditions are used to investigate and proposed feasible options for the use of such buffer zone land. Responsible for project management, master planning and reporting of findings. Involved for 6 person-months. (Cape Gate (Pty) Ltd/The Waste Group).

End land use plans for mine closure (Mpumalanga/Northern Cape Provinces, South Africa) 06/2008 - 10/2011. *Specialist Landscaper.* The end land use is a critical part of the Anglo Closure Toolbox approach for mine closure. Such a land use plan should take into account the environmental risks determined for closure and the socio-economic context of the mine site; and should identify a number of post-closure land uses, which would also be spatially represented in line with the closure strategy for each part of the mine site. Various end land use plans have been developed for the Mpumalanga coal fields, as well as for Namaqua Mines (De Beers) in the Northern Cape. Responsible for project management, master planning and reporting of findings. Involved for 8 person-months. (Exxaro/De Beers).

Environmental impact assessment (EIA) for Noordheuwel, Extension 20 (Gauteng Province, South Africa) 2007 - 2011. *Project Manager.* The project entailed an environmental impact assessment (EIA) for a proposed urban development in Noordheuwel, Extension 20. Responsible for conducting the EIA and compiling an environmental management plan (EMP). Involved for 2 person-months. (Private Property Developer).

Regional coordination for the National Microbial Monitoring Programme (NMMP) for Crocodile West Marico and Vaal Water Management Areas (WMAs) on behalf of the Department of Water Affairs (DWA) (Various provinces, South Africa) 2007 - 2008. *Project Manager.* The National Microbial Monitoring Programme (NMMP) provides information on the status and trends of the extent of faecal pollution, in terms of the microbial quality of surface water resources in priority areas; and provides information to help assess the potential health risk to humans associated with the possible use of faecally polluted water resources. Responsible for the regional coordination function between the Department of Water Affairs (DWA), local governments and other stakeholders regarding sample collection and distribution of the bi-monthly report for each water management area (WMA). Involved for 6 person-months. (Department of Water Affairs (DWA)).

Rehabilitation framework for the Pienaars River (Gauteng Province, South Africa) 06/2007 - 11/2007. *Project Leader.* The project was concerned with a rehabilitation framework for the Pienaars River in Mamelodi. This included site assessments with specialists, obtaining inputs from stakeholders from various communities and the City of Tshwane, status quo reporting, development of open space management, land-use and in-stream interventions and identification of pilot projects for further phases, and geographic information systems (GIS) mapping of all proposals. Responsible for project management and open space plan component. Involved for 4 person-months. (City of Tshwane Metropolitan Municipality (CTMM)).

Development initiative for Bloemhof Dam (North West Province, South Africa) 11/2006 - 05/2007. *Landscape Architect/Environmental Planner.* The project involved the development of a master plan and environmental impact assessment (EIA) plan for the Bloemhof Dam Nature Reserve. This included baseline studies, public participation, feasibility analysis, development of a master plan, architectural layouts for different use areas and the full EIA application process. Responsible for geographic information systems (GIS) mapping, project management and master planning. Involved for 3 person-months. (North West Provincial Government (NWPG)).

Environmental impact assessment (EIA) for River Falls Office Park (Gauteng Province, South Africa) 2006 - 2010. *Project Manager.* The project entailed an environmental impact assessment (EIA) and environmental management plan (EMP) for River Falls Office Park. Responsible for conducting the EIA and compiling the EMP. Involved for 8 person-months. (Private Property Developer).

Environmental impact assessment (EIA) for the widening of Simon Vermooten Road (Gauteng Province, South Africa) 03/2006 - 02/2007. *Project Leader.* The project entailed the widening of Simon

Vermooten Road in Pretoria East. A scoping process in terms of the Environment Conservation Act (ECA) was followed in order to widen this arterial road, which was eventually approved by the provincial authority. Subsequent work included the environmental authorisation for a main bulk water supply line adjacent to the road. An environmental management planning (EMP) was also drafted, and monitoring conducted during the construction process. Responsible for the environmental impact assessment (EIA) and EMP monitoring during construction. Involved for 7 person-months. (City of Tshwane Metropolitan Municipality (CTMM)).

Environmental impact assessment (EIA) for President Park Extension 44 (Gauteng Province, South Africa) 2006. *Project Manager.* The project involved an environmental impact assessment (EIA) for President Park, Extension 44, which is a medium-density housing development. Responsible for conducting the EIA and compiling an environmental management plan (EMP). Involved for 2 person-months. (Private Property Developer).

Environmental impact assessment (EIA) for Randjesfontein, Extension 1 (Gauteng Province, South Africa) 2005 - 2008. *Project Manager.* The project consisted of an environmental impact assessment (EIA) for Randjesfontein Extension 1, a residential estate. Responsible for conducting the EIA and compiling an environmental management plan (EMP). Involved for 8 person-months. (Private Property Developer).

Environmental impact assessment (EIA) for Provincial Road D419 (North West Province, South Africa) 2004 - 2011. *Project Manager.* The project entailed an environmental impact assessment (EIA) and environmental management plan (EMP) for a new 30 km section of road. Responsible for conducting an EIA and compiling an EMP. Involved for 5 person-months. (North West Provincial Government (NWPG)).

Environmental impact assessment (EIA) for various wildlife estates in the Hoedspruit and Bela-Bela areas (Limpopo Province, South Africa) 2004 - 2007. *Project Manager.* The project entailed an environmental impact assessment (EIA) environmental management plan (EMP) for various wildlife estates in the Hoedspruit and Bela-Bela areas. Responsible for conducting the EIA and compiling the EMP. Involved for 24 person-months. (Private Property Developer).

Ga-Rankuwa Extension 21 (Gauteng Province, South Africa) 2004 - 2006. *Project Leader.* The project involved an environmental impact assessment (EIA), environmental management plan (EMP), open space master plan and EMP auditing during construction for underprivileged community in the North of Tshwane Metro. The entire life-cycle of the project was overseen. Responsible for conducting the EIA, compiling the EMP, master planning and landscape architecture. Involved for 12 person-months. (City of Tshwane Metropolitan Municipality (CTMM)).

Galeshewe open space and landscape plan (Northern Cape Province, South Africa) 03/2004 - 08/2004. *Geographic Information System (GIS) Specialist.* The project entailed an open space assessment of Galeshewe Township in Kimberley, including on-foot surveys of each open space, detailed planning proposals for improvement, newspaper articles and geographic information system (GIS) databases. Responsible for project management and GIS. Involved for 3 person-months. (Sol Plaatje Local Municipality).

Frances Baard integrated environmental management programme (IEMP) (Northern Cape Province, South Africa) 02/2004 - 09/2004. *Geographic Information System (GIS) Specialist.* The project entailed the development of an integrated environmental management programme (IEMP) for the Frances Baard District Municipality (FBDM). The programme includes the status quo report, legal matrix of responsibilities, and an environmental issues and threats report for each local municipality. The end product was an interactive tool to officials with decision-making parameters and strategies for sustainable development. Responsible for project management and geographic information systems (GIS) mapping. Involved for 5 person-months. (Frances Baard District Municipality (FBDM)).

Environmental geographic information system (GIS) for Dr Ruth Segomotsi Mompati District Municipality (North West Province, South Africa) 01/2004 - 03/2004. *Geographic Information System (GIS) Specialist.* The project involved a strategic environmental analysis (SEAN) and guidelines for the Dr Ruth Segomotsi Mompati District Municipality in North West Province, as a specialist environmental study feeding into the integrated development plan (IDP) for the area. Responsible for project management, geographic information systems (GIS) environmental analysis and strategic guideline document. Involved for 2 person-months. (VISI Africa Town Planners).

Geographic information systems (GIS) digital terrain model (DTM) for Tshwane (Gauteng Province, South Africa) 08/2003 - 12/2003. *Geographic Information System (GIS) Specialist.* The project involved electronic 3D model for the City of Tshwane Metropolitan Municipality (CTMM) to be used in the integrated

development planning process, with specific reference to strategic spatial planning and analyses and decision making, as well as presentation purposes for the executive mayoral office. Responsible for project management, data gathering and analysis of current meta-database, presentation mapping and 3D analysis. Involved for 2 person-months. (City of Tshwane Metropolitan Municipality (CTMM)).

Environmental impact assessment (EIA) for Blue Crane Country Estate (Gauteng Province, South Africa) 2001 - 2011. Project Manager. The project entailed conducting an environmental impact assessment (EIA) for a proposed development for Blue Crane Country Estate. Responsible for conducting an EIA and compiling an environmental management plan (EMP). Involved for 24 person-months. (Private Property Developer).

Environmental impact assessment (EIA) for Wapadrand, Extension 36 (Gauteng Province, South Africa) 2001 - 2009. Project Manager. The project entailed an environmental impact assessment (EIA) and environmental management plan (EMP) for an urban development bordering the Bronberg protected area. Responsible for conducting an EIA and compiling the EMP. Involved for 20 person-months. (Private Property Developer).

Gauteng Open Space Study (GOSS), Phase 1 (Gauteng Province, South Africa) 03/2001 - 07/2001. Specialist Landscape Architect. The first phase of the Gauteng Open Space Study (GOSS) was a geographic information system (GIS) based strategic open space planning project for the entire Gauteng Province. The project was completed for the Gauteng Department of Agriculture, Conservation, Environment and Land Affairs (DACEL). Responsible for information gathering and GIS database information input, including assigning land use categories for land parcels. Involved for 4 person-months. (Gauteng Province).

Bronberg strategic environmental assessment (SEA) (Gauteng Province, South Africa) 2001. Geographic Information System (GIS) Specialist. The project involved a strategic environmental assessment (SEA) of the Bronberg Ridge in Pretoria East. The work included assessing the state of the environment to set up land use and conservation management guidelines for the effective conservation of sensitive natural and cultural habitats and management of developable areas. Responsible for all geographic information system (GIS) related work, including habitat modelling for rare and endangered species and map productions. Involved for 6 person-months. (Gauteng Provincial Government).

Dinokeng integrated environmental management plan (IEMP) (Gauteng Province, South Africa) 2001. Geographic Information System (GIS) Specialist. This project comprised the environmental planning component for the Dinokeng initiative, including conducting the environmental planning component for the North-eastern Gauteng Initiative (NEGI), a spatial planning initiative. This included the potential establishment of a big-five game reserve in the north-eastern part of Gauteng, with the Institute of Directors (IOD)/International Union for Conservation of Nature (IUCN) consortium. Responsible for environmental planning, all geographic information system (GIS) related work and map productions for the environmental team. Involved for 5 person-months. (International Union for Conservation of Nature (IUCN)/Gauteng Provincial Government).

Extension of Borakalalo National Park (North West Province, South Africa) 2001. Geographic Information System (GIS) Specialist. The project concerned the proposed extension of Borakalalo National Park. The work included conducting a physical infrastructure inventory and natural resource base and social inventory for the North West Parks and Tourism Board (NWP&TB) to facilitate the planning of the proposed extension of the national park. Responsible for environmental management and geographic information system (GIS). Involved for 1 person-month. (North West Parks and Tourism Board (NWP&TB)).

Bushmans River Game Reserve: Phases 1 and 2 (KwaZulu-Natal Province, South Africa) 2001. Geographic Information System (GIS) Specialist. The project entailed the planning and development of a proposed big-five game reserve in the Kwazulu-Natal Midlands, with Roger Collision (Collision Consulting) and Darryl Lombard (Lorton Consulting). Responsible for environmental planning, geographic information system (GIS) related work, including the creation of digital terrain model (DTM) and subsequent slope and aspect analyses. Involved for 5 person-months. (Private).

Tourism plan for the Maluleke area (Mpumalanga Province, South Africa) 05/2000 - 07/2000. Landscape Architect. The project involved developing a community-based tourism plan for the Makuleke tribe in conjunction with South African National Parks (SANParks) in the Pafuri area. Responsible for site suitability analysis, lodge site design and graphic presentation drawings. Involved for 2 person-months. (South African National Parks (SANParks)).

Museum Park initiative in Pretoria inner city (Gauteng Province, South Africa) 05/2000 - 08/2000.

Landscape Architect. The project entailed urban design proposals and street furniture design for the Museum Park initiative in Pretoria inner city. Responsible for site analysis, urban design and graphic presentation drawings. Involved for 2 person-months. (City of Tshwane Metropolitan Municipality (CTMM)).

Visual impact assessment (VIA) for the Samancor chrome smelter in North West (North West Province, South Africa) 12/1999 - 03/2000. *Specialist Landscape Architect.* The project included specialist tourism, land use and visual impact assessment (VIA) of a proposed chrome smelter in Mooinooi as part of the Council for Scientific and Industrial Research (CSIR) consortium for Samancor. Responsible for the VIA and information gathering. Involved for 3 person-months. (Samancor).

Implementation of Spiegelhaus Garden (Magdeburg, Germany) 04/1999 - 05/1999. *Landscape Contractor Staff.* The project involved the implementation of the Spiegelhaus Garden - BUGA 2000 Landscape Expo, Magdeburg - a R750 million landscape project hosted every two years in a different city in Germany. Responsible for landscape installation. Involved for 1 person-month. (BUGA 2000 Landscape Expo, Germany).

Academic experience

Institute for International Research

- Delivered a presentation named “Key Land Use Planning Considerations for Mine Closure” at the 5th Annual IIR Mine Closure and Rehabilitation Conference 2011, Johannesburg

Institute for Landscape Architects of South Africa (ILASA)

- Served on the adjudication panel of the two-yearly ILASA Merit Awards in 2011, which included assessing all northern province projects and providing feedback to the adjudication convener.
- Delivered a presentation named “Waste Site Buffer Zones: Alternative Land Uses” at the Institute for Landscape Architects of South Africa (ILASA) National Conference on 13, 14 May 2010.

International Federation of Landscape Architects

- Chaired session and discussion "Dealing with Mining Landscapes" at the 49th IFLA World Congress 2012 in Cape Town, South Africa.

South African Council for the Landscape Architecture Profession (SACLAP)

- Co-writer of the environmental section of the professional exam from 2009 to 2013, as well as co-examiner of this section of the exam for the same period.

University of Pretoria, South Africa

- External examiner for the 3rd year BSc (Landscape Architecture) students, First and Second Semester exams 2012.
- External examiner for the 3rd year BSc Landscape Architecture Students, 28-29 November, 2009

University of the Witwatersrand (Wits), South Africa

- Co-presenter of a lecture on “Food Gardens & Urban Agriculture” at the WITS Modernx Conference (2009) in celebration of the 50 year existence of the JB Moffat Building.

Education

1998 : Bachelors in Landscape Architecture, University of Pretoria, South Africa

Career enhancing courses

2013 : Level 1 SUSOP® Training Course, SUSOP (Pty) Ltd

- 2012 : Project Management Course (passed with distinction), Aurecon in-house training, South Africa
- 2009 : 2-Day Technical Writing Course, Golder Associates
- 2009 : 2-Day Level 1: First Aid Course, National Occupational Safety and Health Consultancy (NOSHC)
- 2009 : 2-Day Grass Identification Course, Bushveld Eco Services - Frits van Oudshoorn
- 2008 : 3-Day Project Management Course, Golder Associates
- 2008 : 1-Day Health and Safety Representative Course, National Occupational Safety and Health Consultancy (NOSHC)
- 2001 : 1-week Introduction to GIS Course, ESRI, South Africa

Professional affiliations

Member, International Association of Impact Assessment (IAIA)
 Registered Professional Landscape Architect, South African Council for Landscape Architectural Professionals (SACLAP)
 Member, The Institute for Landscape Architecture in South Africa (ILASA)

Languages

| | Reading | Writing | Speaking |
|-----------|----------------|----------------|-----------------|
| English | Excellent | Excellent | Excellent |
| Afrikaans | Excellent | Excellent | Excellent |

Publications

Bower J, 2010. "Technically Speaking". Contributor of an article on "Technically Speaking", the quarterly newsletter for Golder Associates worldwide - article on "Galeshewe Urban Renewal Project: Green Belt Project".

Referees

| Company | Contact Person | Telephone nr. |
|-------------------|-----------------------|---|
| Aurecon | Barend Smit | 012 427 2000/barend.smit@aurecongroup.com |
| Golder Associates | Nico Bezuidenhout | 012 364 4000/nbezuidenhout@golder.co.za |

By my signature below I certify the correctness of the information above and my availability to undertake this assignment.

Signature of Staff Member

Date

PUBLICATIONS (see attached list):

- Three refereed articles (S.A. Journal of Plant and Soil)
- Nine Congress papers/posters
- S.A. Soil Classification (1991) (Member of working group)
- Seven 1:250 000 Land Type Maps
- Three Land Type Memoirs
- More than 200 soil survey reports and/or maps

COURSES COMPLETED:

- Course in Project Management (University of Stellenbosch)
- Course in Junior Personnel Management (Dept of Agriculture)
- Course in Handling of Grievances and Complaints (Dept of Agriculture)
- Course in Marketing (ARC-ISCW)
- Course in National Qualifications Framework Assessment, ARC-CO
- Training Course in Ground Penetrating Radar (GSSI, USA)
- Introduction to ArcGIS 8, GIMS, 2004

PROFESSIONAL STATUS:

- Registered Natural Scientist: Soil Science (SA National Council for Natural Scientific Professions) – registration number 400463/04
- Member of South African Soil Classification Working Group
- Member of Soil Science Society of South Africa (1982-present)
- President of Soil Science Society of South Africa (2005-2007)
- Member of South African Soil Survey Organisation (2000-present)
- Council Member of South African Soil Survey Organisation (2002-2003)
- Scientific Referee, S.A. Journal for Plant and Soil
- External Examiner, University of Pretoria, University of Witwatersrand, University of Venda

MISCELLANEOUS:

Editor, Soil Science Society newsletter, 1993-present

Member, Clapham High School (Pretoria) Governing Body 1998-2002

Member, Northern Gauteng Football Referee's Association

Committee Member, Rosslyn Golf Club (Club Champion 2002 and 2007)

INTERESTS:

Sport, especially golf and soccer; wildlife; reading; music

REFEREES:

Mr T.E. Dohse, ARC-Institute for Soil, Climate and Water.
Tel: (012) 310-2504; 082 324 5389

Prof A.S. Claassens, Faculty of Plant Production and Soil Science, University of Pretoria
Tel: (012) 420-3213; 084 581 6488

Prof M.C. Laker (retired), (012) 361-2900; 082 785 5295

PUBLICATIONS LIST:

Refereed Articles:

BÜHMANN, C., KIRSTEN, W.F.A., PATERSON, D.G. & SOBCZYK, M.E., 1993. Pedogenic differences between two adjacent basalt-derived profiles. 1. Textural and chemical characteristics. *S. Afr. J. Plant & Soil*, 10: 155-161

BÜHMANN, C., KIRSTEN, W.F.A., PATERSON, D.G. & SOBCZYK, M.E., 1994. Pedogenic differences between two adjacent basalt-derived profiles. 2. Mineralogical characteristics. *S. Afr. J. Plant & Soil*, 11: 5-11

PATERSON, D.G. & LAKER, M.C., 1999. Using ground penetrating radar to investigate spoil layers in rehabilitated mine soils. *S. Afr. J. Plant & Soil*, 16:131-134.

Book:

SOIL CLASSIFICATION WORKING GROUP*, 1991. Soil classification. A taxonomic system for South Africa. Institute for Soil, Climate & Water, Pretoria.

* Co-author as member of Working Group

Thesis:

PATERSON, D.G., 1998. The use of ground penetrating radar to investigate subsurface features in selected South African soils. Unpublished M Sc Thesis, University of Pretoria.

Congress Papers:

PATERSON, D.G., 1987. The relationship between geology and soil type in the northern Kruger National Park. 14th Congress of the Soil Science Society of S.A. Nelspruit, 14-17 July 1987.

PATERSON, D.G., 1990. A study of black and red clay soils on basalt in the northern Kruger National Park. 16th Congress of the Soil Science Society of S.A. Pretoria, 9-12 July 1990.

PATERSON, D.G., 1992. The potential of ground penetrating radar as an aid to soil investigation. 17th Congress of the Soil Science Society of S.A. Stellenbosch, 28-30 Jan.1992.

PATERSON, D.G., 1995. The complex soil mantle of South Africa. ARC Wise Land Use Symposium, Pretoria, 26-27 Oct. 1995

PATERSON, D.G. & LAKER, M.C., 1998. Locating subsoil features with ground penetrating radar. 21st Congress of the Soil Science Society of S.A. Alpine Heath, 20-22 Jan. 1998.

PATERSON, D.G., 2000. Mapping rehabilitated coal mine soils in South Africa using ground penetrating radar. Eighth International Conference on Ground Penetrating Radar, Gold Coast, Australia, 23-26 May 2000.

PATERSON, D.G. & VAN DER WALT, M., 2003. The soils of South Africa from the Land Type Survey. 24th Congress of the Soil Science Society of S.A., Stellenbosch, 20-24 Jan. 2003

Land Type Maps:

PATERSON, D.G., 1990. 1:250 000 scale land type map 2230 Messina. Dept. Agriculture, Pretoria.

PATERSON, D.G. & HAARHOFF, D., 1989. 1:250 000 scale land type map 2326 Ellisras. Dept. Agriculture, Pretoria.

PATERSON, D.G., PLATH, B.L. & SMITH, H.W., 1987. 1:250 000 scale land type map 2428 Nylstroom. Dept. Agriculture, Pretoria.

PATERSON, D.G. & ROSS, P.G., 1989. 1:250 000 scale land type map 2330 Tzaneen. Dept. Agriculture, Pretoria.

PLATH, B.L. & PATERSON, D.G., 1987. 1:250 000 scale land type map 2426 Thabazimbi. Dept. Agriculture, Pretoria.

Land Type Memoirs:

PATERSON, D.G., PLATH, B.L. & SMITH, H.W., 1988. Field Investigation. In: *Land types of the maps 2426 Thabazimbi & 2428 Nylstroom. Mem. Agric. Nat. Res. S. Afr.* No. 10. Dept. Agriculture, Pretoria.

PATERSON, D.G., SCHOEMAN, J.L., TURNER, D.P., GEERS, B.C. & ROSS, P.G., 1989. Field Investigation. In: *Land types of the maps 2330 Tzaneen & 2430 Pilgrim's Rest. Mem. Agric. Nat. Res. S. Afr.* No. 12. Dept. Agriculture, Pretoria.

PATERSON, D.G., 1999. 1:250 000 land type survey of the former Ciskei (Unpublished). ISCW Report GW/A/99/24.

Also:

PATERSON, D.G., 1992. Ground penetrating radar applications in USA and South Africa. Report on an official study tour to USA, 13-29 July, 1991. ISCW Report GW/A/92/8

PATERSON, D.G., 2000. Report on official overseas visit to GPR2000 Conference, Broadbeach, Australia, 23-26 May, 2000. ISCW Report GW/A/2000/40

Plus ARC-ISCW Reports on:

- Ground penetrating radar investigations in: Kruger National Park; Enseleni, Natal; Weatherly, Maclear; Kleinkopje Mine
- Soil survey investigations at: Roodeplaat, Kathu, Steelpoort River, Palala River, Zeekoegat (Roodeplaat), Limpopo River, Lydenburg, Kendal, Clewer Sand (Witbank), Botha Sand (Witbank), Balmoral Colliery, Bafokeng (Rustenburg), Towoomba (Warmbaths), Hoefeld Stene (Middelburg), Quality Bricks (Witbank), Visagie Sand (Middelburg), Rosslyn, Coalbrook (Sasolburg), Stewart Coal (Delmas), Forzando Coal (Hendrina), Vaalgro (Vereeniging), Ratanda (Heidelberg), Elspark (Boksburg), Thorndcliffe Mine (Steelpoort), Jan Smuts Quarry (Boksburg), Ennerdale (Phase I & II), Thokoza, North Riding, Natalspruit (Alberton), Arnot, Kroondal (Phase I & II), Ga-Rankuwa, Hartebeespoort Dam, Kosmos, Assen, Grasmere, Magalies Moot (Pretoria), Valpre (Paulpietersburg), Cargo Carriers (Sasolburg), Waterval (Rustenburg), Rayton,

Bronkhorstspuit, Zwavelpoort (Pretoria), Pietersburg, Trojan Mine (Steelpoort), Platinum Highway (Rustenburg), Moutse, Centurion, Salique (Klaserie), Northam, Greenside Colliery (Witbank), South Deep Mine (Westonaria), Bank Colliery, Steelpoort Platinum, Gautrain Route (Pta/Jbg), Rietspruit Mine (Ogies), Potgietersrus Platinum, Atok Mine (Lebowa), Blue Ridge Mine (Groblersdal), Ngodwana, Estancia (Breyton), Twickenham Mine (Steelpoort), Marikana