

Curriculum Vitae: Lauriston (Laurie) Barwell

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| Nationality | South African |
| Education | M.Sc. Engineering, Coastal (2009 - 2011) University of Stellenbosch B. Engineering, Civil with a focus on Hydraulics (1975 - 1979) University of Stellenbosch |
| Short courses | <ul style="list-style-type: none"> Advanced Leadership Programme (1997), Groman (Pty) Ltd Programme on Leadership Skills (1995), University of Stellenbosch Business School Facilitator Skills Course (1994), Business Presentation Skills Cape (Pty) Ltd Senior Management Course (1993), University of Stellenbosch Business School Integrated Environment Management (1991), University of Cape Town Diploma in Project Management (1991), Damelin College, Cape Town |
| Languages | English (fluent), Afrikaans (fluent) |
| Employment record | |
| 2019- Present | Director VulAmanz Water Systems (Pty) Ltd : Purveyors of a WRC-funded and patented water treatment and wastewater recovery system proven a high level of user-acceptance in South African rural areas (Point of Use in deep rural areas at households, schools and clinics in Limpopo, KZN and Eastern Cape). |
| 2016- Present | Director SharkSafe Barriers (Pty) Ltd – the only eco-friendly shark barrier to protect both humans and sharks |
| 2016- Present | Director Alternative Services Technology (Pty) Ltd – focus on nature-based solutions for real-time challenges such as using constructed wetlands and algae-based waste-water treatment technologies in appropriate context. |
| Apr 2014 – Present | Independent Contractor Laurie Barwell & Associates |
| Apr 2005- Mar 2014 | Contract Research and Development Manager CSIR- Natural Resources and the Environment |
| Apr 1986 – Mar 2004 | Coastal Engineer CSIR |
| Jan 1982- Mar 1986 | Hydraulic Engineer Department of Water Affairs, South Africa |
| Relevant professional experience | |
| 2014 – current | Department of Science and Technology (DST) via the Water Research Commission (WRC) and `Vulamanz Water Systems (Pty) Ltd. Commercialisation of the VulAmanz Water Filter System Project Coordinator and Specialist Contributor/Designer Engineering design, manufacturing, quality control, field deployment, user community liaison and performance auditing of a Point of Use water filter that provides potable water from untreated sources in deep rural areas of Limpopo, Bizana, Fort Beaufort, Ugie (Eastern Province), and Ixopo area in KZN, South Africa. |
| 2014 – current | The Water Research Commission (WRC), TIA, WRC (Wader) and `Vulamanz Water Systems (Pty) Ltd. Commercialisation of the VulAmanz Backwash Water Recovery Filter System |



Project Coordinator and Specialist Contributor/Designer

Engineering design, manufacturing, quality control, field deployment, user community liaison and performance auditing of large swimming pool wastewater recovery water filter systems that recovers and successfully filters and returns it for reuse of all pool wastewater at especially school-, municipal and gym pools in South Africa.

2010 – 2012

National Institute of Disaster Management (INGC), Mozambique Department of State Administration. Funded by French & Irish foreign aid agencies.

Mozambique Coastal Protection & Climate Change Adaptation and Response Strategy and Plan: Theme 2 – Coastal Protection

Project Co-Director, Contract Manager, Facilitator & Specialist Contributor

Coordination of a team of coastal engineering, GIS and remote sensing, coastal geology and management specialists for the assessment of Risk and Vulnerability to Climate Change scenarios and development of Climate Change Adaptations actions for 11 cities along the Mozambique coastline. Development of an R&V assessment and evaluation framework; in-situ assessment by a multi-disciplinary specialist team; integrative writing up of the results and presentation to Presidential Level steering committee. Liaison with the client on approach, progress and final plan. The resultant publication of the peer-reviewed document that forms one of the strategic documents in Mozambique.

[www.academia.edu/24289717/Responding to Climate Change in Mozambique theme 2 Coastal planning and adaptation to mitigate climate change impacts](http://www.academia.edu/24289717/Responding_to_Climate_Change_in_Mozambique_theme_2_Coastal_planning_and_adaptation_to_mitigate_climate_change_impacts)

2014

Transnet National Ports Authority (TNPA)

Risk and Vulnerability assessment to climate change of the South African National Ports

Specialist Contributor, Project, Contract Manager and Process Facilitator

Development of an R&V assessment and evaluation framework; In-situ assessment by a multi-disciplinary specialist team working with professional staff at each port; Integrative writing up of the results and presentation to Client.

2020 – 2021

Swakopmund Municipality, Namibia.

Swakopmund Coastal Vulnerability Assessment (Protection & Climate Change Adaptation and Response Strategy and Plan for Swakopmund coastline)

Project Co-Director, Facilitator & Specialist Coastal Environmental Engineering Contributor

Coordination of a team of coastal engineering, ecologists and management specialists for the assessment of Risk and Vulnerability to Climate Change scenarios and development of Climate Change Adaptations actions for Swakopmund in Namibia. Development of an R&V assessment and evaluation framework; in-situ assessment by a multi-disciplinary specialist team; integrative writing up of the results and joint presentation to municipal officials. Liaison with the client on approach, progress and final plan. The resultant publication of the peer-reviewed document that forms one of the strategic planning documents for Swakopmund.

2022

Overstrand Municipality, Hermanus, South Africa

Dune, beach and wetland Maintenance Management Plan for Sandbaai Beach, Hermanus.

Specialist Contributor

Design of assessment method, field work, data analysis and specialist coastal engineering report

2021/2022

CapeNature

Coastal, dune and beach Maintenance Management Plan for Waenhuiskrans Nature Reserve and Arniston coastline

Specialist Contributor

Design of assessment method, field work, data analysis and specialist coastal engineering report

2022

Moquini Beach Home Owners Association

Dune and Beach Maintenance Management Plan



Specialist Contributor

June 2020 – July 2021

Design of assessment method, field work, data analysis and specialist coastal engineering report
Baseline Assessment of the Orange-Senqu River Mouth (OSRM) Rehabilitation Demonstration Project in South Africa and Namibia

Orange-Senqu River Commission (ORASECOM) (under contract to OneWorld Sustainable Investments)

Coastal Engineer and Rehabilitation Specialist

This project involves undertaking a baseline and situational analysis for the rehabilitation and sustainable management of the Orange-Senqu River Mouth (OSRM). OneWorld adopted an integrated and participatory approach using the complementary principles of Integrated Water Resources Management (IWRM) and the Ecosystems Approach to undertake the relevant baseline assessment, including a situational analysis and prioritisation of management interventions through participatory analysis.

Laurie undertook the following activities: Recommend engineering and non-engineering actions to support the rehabilitation of OSRM, as aligned with and informed by the outcomes of the baseline and situational analysis. Develop Terms of Reference for ORASECOM to commission the construction of a culvert at the OSRM (or an alternate solution as recommended from the point above) that will resolve the impacts of the construction of a road by Alexkor to transport mining equipment and outputs. Cost key actions to inform prioritisation and planning.

Support activities include: Supporting the development and detailing of a Priority Implementation Plan for OSRM, including but not limited to institutional arrangements, management tools, priority actions to be implemented and maps indicating presence of causeway, old earth-moving equipment, alien invasive species in flood plain etc. The sub-consultant will be primarily responsible for the engineering aspects of the Priority Implementation Plan, including developing a Terms of Reference for ORASECOM to commission the construction of a culvert under the old causeway, breaching of the causeway amongst others; Conducting necessary fieldwork to assess the feasibility of priority rehabilitation actions and to cost these accordingly.

June 2019 – January 2021

Technical Advisory Services on the Piloting of Activities for the Preparation of GCF Country Programmes and Related Processes

Green Climate Fund (GCF) (under contract to OneWorld Sustainable Investments)

Coastal Engineer and Coastal Adaptation Expert

The project is providing technical advisory services to enhance the quality, as well as ownership, of funding proposals generated by countries attempting to access the GCF, with a view to ensure that climate finance being provided has maximum impact. OneWorld is responsible for building capacity and supporting country programming for GCF projects in Mozambique, Seychelles and Mauritius. Specifically, this is focused on improving bankability of GCF project proposals, strengthening the climate change rationale through climate change risk and vulnerability assessments, assessing economic risks of climate change, conducting policy analyses and finance gap assessments, and engaging with national and multi-lateral institutions to facilitate cooperation and maximise investment opportunities. Specifically contributing to the Seychelles' assessment, Laurie has contributed to the development of an integrated climate change risk and vulnerability assessment with the intention of aligning and synchronising this assessment with the Coastal Adaptation Framework which he also contributed to. The development of the Coastal Adaptation Framework involved the identification of a typology of coastal risks in the R&V assessment; collating and analysing data and co-develop a tool and/or framework for identifying nature-based solutions for coastal adaptation to coastal issues related to sea level rise; training key user groups.

2013 – 2014

African Union

Project Co-Director

Using Integrated Water Resource Management (IWRM) best practices to develop Appropriate Capacity and Training for the benefit of Sub-Saharan Africa Water Security (ACT4SSAWS).

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| | <p>The development of a successful project proposal and implementation framework amongst 8 research institutions from 6 African countries (Senegal, Malawi, South Africa, Mozambique, Zambia and Botswana). The project was successfully implemented under the leadership of CSIR.</p> |
| 2014 – current | <p>Department of Science and Technology (DST) via the Water Research Commission (WRC)</p> <p>Commercialisation of the VulAmanz Water Filter System</p> <p>Project Coordinator and Specialist Contributor/Designer</p> <p>Engineering design, manufacturing, quality control, field deployment, user community liaison and performance auditing of a Point of Use water filter that provides potable water from untreated sources in deep rural areas of Limpopo, Bizana, Fort Beaufort, Ugie (Eastern Province), and Ixopo area in KZN, South Africa.</p> |
| 2014 – current | <p>Technology Innovation Agency (TIA) of DST in collaboration with the Stellenbosch University's INNOVUS centre.</p> <p>Commercialisation of the SharkSafe Barrier Technology to Safeguard Beach, Swimming and Surf Spots from Sharks</p> <p>Project Coordinator and Specialist Contributor/ Designer</p> <p>Engineering design, manufacturing, quality control, field deployment, client liaison and performance auditing of the SharkSafe Barrier in South Africa and Reunion.</p> |
| 2004 – 2010 | <p>DST & CSIR</p> <p>South African Integrated Spatial Information System (SA-ISIS) project, an Innovation Fund programme</p> <p>Project, Contract Manager, Facilitator & Specialist Contributor</p> <p>The development of a successful project proposal implementation framework in response to a call from the DST's Innovation Fund. The project required collaboration amongst up to 20 scientists and technologists from three research institutions (CSIR, University of Pretoria and the Agriculture Research Council). The aim was to enable sharing, integration and value addition for decision support of spatial data located in independent databases. It was successfully implemented and forms the basis of the SAEON spatial data portal (http://www.saeon.ac.za/data-portal-access).</p> |
| 2005 – 2008 | <p>DST via CSIR</p> <p>National Information Society Learnership in Ecological Informatics (NISL-EI)</p> <p>Project Contract Manager, Facilitator & Specialist Contributor</p> <p>The development and implementation of an Honours-level Learnership delivered using distance-based resources and through a cooperation of University Western Cape, CSIR and SAEON. CSIR was the managing agent and UWC did the curriculum certification. A total of 20 unemployed graduates successfully participated in the course and subsequently found permanent employment.</p> |
| 2007 – 2009 | <p>CSIR</p> <p>Collaborative Spatial Analysis and Modelling Platform (CoSAMP)</p> <p>Project, Contract Manager, Facilitator & Specialist Contributor</p> <p>Coordination of a multi-disciplinary team of specialists to design and develop the (CoSAM) platform that is aimed at addressing a range of “collaboration divides and barriers” - including bandwidth constraints, other hard, technical interoperability barriers and a range of “softer” barriers (such as inadequate management and sharing of spatial analysis knowledge).</p> |
| 2016-2019 | <p>CMAI Architects for the Property Owner (Confidential)</p> <p>Design specification (including provision for climate change) for a buffer dune system at Kabeljous, Eastern Cape</p> <p>Specialist Contributor</p> <p>Specialist coastal engineering report as input to the environmental authorisation process.</p> |
| 2018 | <p>Mossel Bay Municipality</p> |



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| | Design specification (including provision for climate change) for the establishment of a wheelchair-friendly access pathway at Diaz Bay, Mossel Bay |
| | Specialist Contributor Specialist coastal engineering report as input to the environmental authorisation process. |
| 2017 | Property owner (Confidential) |
| | Design specification (including provision for climate change) for a buffer dune system at Pansy Cove, Mossel Bay |
| | Specialist Contributor Specialist coastal engineering report as input to the environmental authorisation process. |
| 2017 | Property owner (Confidential) |
| | Design specification (including provision for climate change) of the interface of retaining walls at Featherbed, Knysna |
| | Specialist Contributor Specialist coastal engineering report as input to the environmental authorisation process. |
| 2017 | Thesen Islands Home Owners Association |
| | Rapid assessment of perceived sedimentation in the Thesen Islands canals |
| | Specialist Contributor Design of assessment method, field work, data analysis and specialist coastal engineering report |
| 2016 | CMAI Architects for the Property Owner (Confidential) |
| | Design specification (including provision for climate change) for a gabion structure and seawall at Thesen Islands, Knysna |
| | Specialist Contributor Specialist coastal engineering report as input to the design and subsequent environmental authorisation process |
| 2016 | Property owner (Confidential) |
| | Design specification allowing for hazard level due to climate change at Crabs Creek, Knysna |
| | Specialist Contributor Specialist coastal engineering report as input to the environmental authorisation process. |
| 2007 - 2010 | DST |
| | DST Global Change Grand Challenge: National Research Plan |
| | Project Director Coordination of in excess of 100 specialist scientists, managers and researchers to develop the national research plan that forms the framework for research fund investment in global change in South Africa. https://www.gov.za/documents/global-change-grand-challenge-national-research-plan |
| 2010 | CSIR |
| | CSIR Water Sustainability Flagship Programme |
| | Project Coordinator Coordination and leadership within multi-disciplinary teams of specialists across research institute within CSIR |
| 2016/17 | West African Science Service Centre on Climate and adapted Land Use (WASCAL)/ German Federal Ministry of Education and Research |
| | Contract Research and Development Strategy for WASCAL |
| | Facilitator and Consultant to WASCAL Executive Director Assessment of existing research strategy and business plan, facilitating training and planning workshops with senior research and management staff to develop a complementary CR&D |



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| | <p>strategy. Assist senior WASCAL to develop CR&D proposals in response to formal calls from inter-alia the African Development Bank and the European Union's H2020 call.</p> |
| 2014-2016 | <p>CMAI Architects for the Knysna Municipality</p> <p>Knysna Integrated Strategic Development Framework (ISDF).</p> <p>Coordination and Specialist Contributor</p> <p>Coordination of a multi-disciplinary team of specialists, author of SEA and Climate Change risk and vulnerability assessment sections and compilation of overarching ISDF Report. Included strategic planning of sanitation infrastructure by following a 'Infrastructure-Follows-Strategy' approach.</p> |
| 2015 | <p>Betty's Bay Ratepayers Association and Local Authority</p> <p>Design of the Management Plan of the Betty's Bay Beach and Foredune system to allow for climate change</p> <p>Specialist Contributor and Designer</p> <p>Analysis of coastal processes and design of appropriate engineering and management detail and actions to incorporate CC related aspects such as sea level rise.</p> |
| 2014 | <p>Pringle Bay Ratepayers Association and Local Authority</p> <p>Update of the Management Plan of the Pringle Bay Beach and Foredune system to allow for climate change</p> <p>Project, Contract Manager, Facilitator & Specialist Contributor</p> <p>Analysis of coastal processes and design of appropriate engineering and management detail and actions to incorporate CC related aspects such as sea level rise.</p> |
| 2013 | <p>Hessequa Municipality</p> <p>Update of the Management Plan of the Lappies Bay Beach and Foredune system to allow for climate change</p> <p>Specialist Contributor and Designer</p> <p>Analysis of coastal processes and design of appropriate engineering and management detail and actions to incorporate CC related aspects such as sea level rise.</p> |
| 1995-2013 | <p>Facilitation</p> <ul style="list-style-type: none"> • Workshop to pilot the algae-based domestic waste water treatment at Mossel Bay which was successfully piloted by retro-engineering the Brandwacht WWTW along with CSIR scientist (Prof Paul Oberholster, now Dean of Science at University of Free State). • Strategy for Water Institute of South Africa (WISA) (2013) • Business strategy and implementation plan for the CSIR Water Sustainability Flagship (2011 – 2012) • Regional workshop to develop a multi-national and multi-disciplinary proposal (7 research institutions from 5 African countries) in response to the African Union Call on Integrated Water Resource Management (February 2011) • National workshop on Ocean Acidification research (Cape Town 2011) • WIOMSA workshop on coastal development set-back research (Maputo 2011) • Regional workshop on climate change research sponsored by JICA (February 2010) • Business Strategy and Plan for proposed Regional Centre for Spatial Analysis and Modelling (2010 - 2011) at the University of Limpopo • Human Capital Development Strategy the DST Global Change Grand Challenge (2009 - 2010) • Research Strategy for Climate Change for SANBI (2009) • Research Strategy for the DST Global Change Grand Challenge (2008 -2010) • Business Strategy for proposed African Centre for Climate and Earth System Science (2006) • African Health Care Workshop (2006) • Strategy for proposed CSIR Knowledge Commons (2006) • International Copper Association: Strategy Roundtable, Orlando, USA (2006) |



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- CSIR-NRE Research Strategy (2005)
 - CSIR-NRE Ecosystems Research Strategy (2005)
 - CSIR-NRE Pollution & Waste Research Strategy (2005)
 - C.A.P.E. Estuaries Management Strategy (2005)
 - Goukou River Management plan (2004, 2005)
 - Business Strategy for CSIR International Convention Centre (2004)
 - National Workshop on Estuaries, Dept of Environment Affairs and Tourism (2003)
 - Project Management Advance Course, CSIR Innovation, Leadership & Learning Academy. (30 Courses, 2000 - 2010)
 - Various workshops on aspects related to Environmental Reserve determinations for estuaries. (1995 – 2000)
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Publications and Conference Papers (selected)

Chapters in books

Barwell, L. 2015. State of the WIOC Coast: Coastal mining and its influence on coastline stability. In *Regional State of the Coast Report-Western Indian Ocean* (Bosire, J., Celliers, L., Groeneveld, J., Paula, J. and Schleyer, M.H). UNEP-Nairobi Convention and WIOMSA.

Journal articles

Lead author and presenter of a paper at the PIANC World Congress San Francisco, USA 2014: Responding to coastal climate change in Mozambique, a low data availability context.