

Chris Brooker & Associates

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South African
Date of Birth : 1954.10.18

Qualifications:

- BSc(Eng) Witwatersrand, 1977
- MSc(Eng) (with distinction) Urban Stormwater Management, Witwatersrand, 1998
- Practical Techniques in Environmental Impact Assessment, University of Cape Town, 1987
- River Rehabilitation Course. CEAD University of Natal, Pietermaritzburg 2002
- Currently registered for a doctorate in River Rehabilitation, Wits Dept Civil Engineering

Professional:

PrEng No 820008, 1982

Positions Held:

Academic: 1992 - 2008

- External Examiner (post grad) and visiting lecturer Dept Civil Engineering, University of the Witwatersrand
- External Examiner and visiting lecturer Dept Landscape Architecture, University of Pretoria
- ECSA Accreditation Committee Wits Environmental Engineering
- External Representative on Review Committee Wits Civil and Environmental Engineering

Professional:

2001 to present

CBA Specialist Engineers (Chris Brooker & Associates)

1999 to 2001

Director, Phumelela Africa Professional Engineers

1985 to 1999

Director, Leech Price Associates (Pty) Ltd

1984 to 1985

Associate, Brian Leech Associates

1982 to 1984

Project Engineer, Brian Leech Associates

1981

Design Engineer, Hill Kaplan Scott

1979 to 1981

Design Engineer, Rand Water Board

1978

Hydrology, Hydraulics and Hydraulic Structures

- River Rehabilitation Upper Jukskei, Johannesburg, JRA
- Moroka Dam Wetland, JRA
- Unki Dam – Hydrological Yield and Flood Design Review, Arup
- Irrigation water resources investigations: Dainfern; Waterfall City
- Stormwater Harvesting: Inanda Greens, Tiber; Fourways Golf Park, RPP
- Zonkizizwe - surface water management, environmental water management for zero impact on 2 km² high density development, Old Mutual Properties
- Major drainage culverts: MTN Dome 600m Johannesburg, JRA; Parkmore 1,2 km 100 m³ /s capacity, Sandton Municipality; Carnival City flood diversion 300m, Sun International
- Sabi River Sun, Hazyview, reconstruction of flood damaged dam (Perry's dam), Southern Sun
- Flood control systems and detention ponds: 20000 m² capacity pond with siphon inlet and jacked pipe outlet, Booyens, JRA; special system Lifateng, Soweto, JRA; flood control embankment and jacked pipe outlet, Noordgesig, JRA; Sunward Park Ext 3, Boksburg, JCI Properties;
- Community driven flood control schemes, Tamboville (Benoni) & Denver Informal Settlement (Johannesburg)
- Goosebay Canyon Weir, Vaal River
- Hydrological Investigations and Stormwater Master Planning: Modderfontein (50km² PCSWMM Model), Heartland Properties; Booyens catchment, JRA; Robinson catchment, JRA; Braamfontein Spruit catchment, JRA; Johannesburg south flowing rivers, CoJ; Klip Spruit (major PCSWMM Model), JRA; Craighall Stream, CoJ;
- Riverbank protection: Braamfontein Spruit, Parkhurst, JRA; Craighall Stream, CoJ; Weltevreden Park, JRA; Jukskei River, Alexandra, JRA;
- Floodline determination on numerous rivers and streams eg. Vaal River, Klipspruit, Rietspruit, Klip River and Jukskei River
- Construction or repair of earth dams in urban catchments: Sunward Park, Little Falls, Lonehill, Sunninghill and Bryanston
- Stormwater drainage layouts and stormwater detention facilities, at planning and detail design stages, for numerous townships
- Stormwater retention facility for flood attenuation, Sunward Park Ext 3, Boksburg
- Hydraulic calculations for numerous bridges and culverts
- Hydraulic design 1 400 Ml/d purified water pump station and 600 Ml/d filtration plant, Zuikerbosch, Rand Water
- Hydraulic design for numerous pipe networks for township water supplies
- Deviation of outfall sewer with 1 200 diameter plastic pipe, Falcon Crest

Structures

- Pipe jacking: Noordgesig (75m soft & rock), JRA; Booyens

Assistant Resident Engineer, Rand Water Board

Publications:

"Risk and its Control in Urban Stormwater Management", The Civil Engineer in South Africa, December 1988

"Civil Engineer and Landscape Architect: Friend or Foe" Conference on Landscape Architecture, Sandton 20 September 1991 - also published in "Environmental Planning and Management"

Urban Road Stormwater Drainage Course - Notes and Presentation - South African Roads Federation, 1995 to 2008

Historical Context of Urban Hydrology in Johannesburg:

Part 1 Johannesburg, 1900 to 1990

Journal of SAICE Volume 37 No 3, 1995

Part 2 Case Study of the Braamfontein Spruit, Journal of SAICE Volume 37 No 4, 1995

Greater Johannesburg TMC Telemetered Rainfall Monitoring Project, Journal IMESA, March 1996

"Environmentally Sensitive Stormwater Management" The Urban Green File October 1998

"Stormwater Harvesting"
The Urban Green File November/December 1999

"Surface Water Management on Urban Golf Course"
Inanda Greens, Johannesburg
Urban Green File November/ December 2002

"Urban Stormwater Harvesting: A Rational Approach"
Built Environment Professions Conference on Sustainable Development May 2002

"Environmentally Sound and Aesthetically Acceptable River Crossings"
Urban Green File May/June 2004

Rd (25m mixed fill & soft), JRA; Klipspruit Valley Rd (65m very shallow, mixed fill & soft), JRA;

- Investigation and Repair of 1,8 km long Robinson culvert, Johannesburg, JRA.
- Structural design, Atlasville Shopping Centre, Boksburg
- Structural design, Ferndale Mews offices, Randburg
- Structural design of mine hostel buildings, cap lamp house, shaft offices, and hostel kitchen and store complex Doornfontein No 3 Shaft
- Structural design townhouses approx 100 units in various schemes Johannesburg, Witbank, Roodepoort and Sandton
- Structural design 1 400 Ml/d purified water pump station, 600 Ml/d filtration plant, and 100t elevated hopper, Lime Slaking Plant, Zuikerbosch, Rand Water.
- Repairs to failed reservoir, Blyvooruitzicht, Rand Water

Forensic Engineering and Expert Witness

- Zambesi Estate, storm damage
- Expert Witness Litigation, Dadelvlak Dam Failure, Malelane
- Failure Investigation Perry's Dam, Hazyview
- Failure Investigation, large diameter very flexible pipe, Pecanwood
- Television and Electrical Distributors vs City of Johannesburg Flood Damage Litigation
- Zuikerbosch Ave Pipeline Failure Investigation
- Flood investigation, Klip River Drive and Booyens Road Culvert, Johannesburg Municipality
- Flood damage litigation Sandspruit, Morningside.
- Stormwater management litigation, Craighall
- Investigation into fire damage to structure, Protea Piggs Peak Hotel, Swaziland
- Unicorn Container Depot crane failure, wind investigation
- Investigation into failure of welded spigot and socket joint of 2 100 mm diameter steel pipeline

Environmental and Water Quality

- Vesuvius contaminated stormwater management, Vesuvius, SA
 - Moroka Dam and Wetland Rehabilitation, Soweto, CoJ & JRA
 - Zonkizizwe, Midrand, surface water management, OMP
 - EMP for Casino bids: Nokeng; Goosebay Canyon Vaal River; Hunters Rest; and Potgietersrus .
 - Stormwater Management R for EIA's: Parkhaven Pan, Bohlweki; Isedleki, Oryx; Gardiner Ross, Bohlweki; Gautrain, Bohlweki.
 - Telemetered rain and stream gauge system, Johannesburg
 - Artificial Wetland for sewage treatment : BP Truck Inn, BP R22 Development; Bakubung, Makalali Private Nature Reserve;
 - Booyens Rowing Lake, feasibility study
- Cape McLearn Hotel Malawi, Preliminary Environmental Management Plan

Review

- Wetland Rehabilitation Manual, University of Natal
- Stormwater Management Schemes: Greenstone Hill,

Heartland Properties; Greenstone Mall, LC Consulting;
Fourways 39, Sivest;

Memberships:

Member of SA Institution of Civil Engineers
Member of SA Institution of Municipal Engineers
Member of International Association for Impact
Assessment SA Chapter
Member International Erosion Control Association
CBA is a Member Firm of the SA Association of
Consulting Engineers

Committees:

Braamfontein Spruit Trust Committee, 1986
Camera Club of Johannesburg, 1990 to 1993
Chairman, Fourways Residents and Ratepayers
Association 1998 to 2000
Fourways Management Forum Steering Committee
2000 to 2001
SAACE Southern Gauteng Branch Vice Chairman
2002/04
SAACE Southern Gauteng Branch Chairman
2004/06
IAIA (SA) Vaal Branch Treasurer 2003/06

Construction

- Resident Engineer on construction of 600 Ml/d water purification works, consisting of sedimentation tanks, filtration plant, pumping stations, associated small and large diameter steel pipework
- Engineer on may projects listed above

Computer Applications

Programmes written include:

- Water hammer analysis in pipelines
- Catchment modelling including hydrograph synthesis, reservoir routing, channel routing and flood attenuation
- Pipe network analysis

Extensive use of:

- Hydrological and flood modelling software, Hydrosim, BOSS-WMS, BOSS-RMS, HEC-2, HEC-RAS, PCSWMM, AutoCAD
- Commercial and utility software; database, spreadsheet, word processing etc. Proficient with MS Office and Lotus Smart Suite.
- GIS; hydrological modelling data base in ArcView