

STORMWATER & CATCHMENT MANAGEMENT

The new Water Act (Act 37 of 1998) has imposed new obligations regarding the management of the water resources in South Africa, new procedures are required for the overall management of catchments in both the rural and urban settings. Among the disciplines that are important in catchment management are Flood Hydrology and Stormwater Management.

HHO Africa have extensive experience in analysing and designing stormwater systems in the urban context. The need to design systems that are cost effective, safe and efficient forms an integral part of the design of new urban infrastructure and the upgrading of existing systems to meet new requirements.

HHO Africa are also able to evaluate flood hydrology in both the rural context for dams and bridges and in the urban context to ensure safe disposal of the run-off. They also carry out flood line analyses to satisfy the legal requirements for the location of buildings on flood plains. The latest software such as PCSWMM, Stormwater, and HEC_RAS are available to the HHO Africa designers. Among the stormwater and catchment systems that HHO Africa have designed or evaluated are:

- Pringle Bay Stormwater Analysis* This study analysed the existing stormwater system and proposed alternative solutions.
- Birkenhead Street Outfall* This study carried out for the Strand Municipality analysed the urban catchment to establish the cause of regular winter flooding. A new outfall was designed and constructed and flooding has been eliminated.
- Cape Town Airport Precinct* The study modelled possible stormwater solutions for various development scenarios for the area around Cape Town International Airport. The needs for staged development of the area including the airport were examined and the model can be modified to take account of developments as they take place.
- Western Area of the Strand* The stormwater system for the residential area in the western area of the Strand municipality was modelled to determine the causes of flooding and recommend remedial measures.
- Forest Village Blue Downs* Specific limits on peak outflows from the stormwater system for this 1100 unit township development were imposed. The design of the system incorporated several attenuation ponds and other features to meet these requirements.
- Ysterplaats Air Force Base* The existing stormwater system was analysed to establish its capacity and modifications were recommended to alleviate flooding particularly in the adjacent residential areas.
- Salt River Catchment* The Cape Metropolitan Council Catchment Management division identified seven sites for flood recording stations. HHO Africa analysed these sites and did the first stage derivation of the rating curves for these stations. This study was an important first stage in the catchment management programme for the Salt River.
- Century City Stormwater Masterplanning* Since 2004, HHO Africa have been responsible for stormwater modelling and masterplanning at Century City. Hydrology and hydraulic analyses have been done using PCSWMM.
- Sustainable Urban Drainage System (SUDS)* HHO Africa are experienced in the planning and implementation of Sustainable Urban Drainage Systems (SUDS), having advised various Clients with regards to Water Sensitive Urban Design (WSUD).



Paarden Eiland prior to stormwater catchment measures