

Client: Lite Consulting (Gauteng Department of Human Settlements)  
 Value: R1.9 billion  
 Services: Road geometry and stormwater management system  
 Project Duration: July 2015 – Ongoing

# Syferfontein Megacity Development, Gauteng

## Roads and Stormwater Design: Preliminary Stage

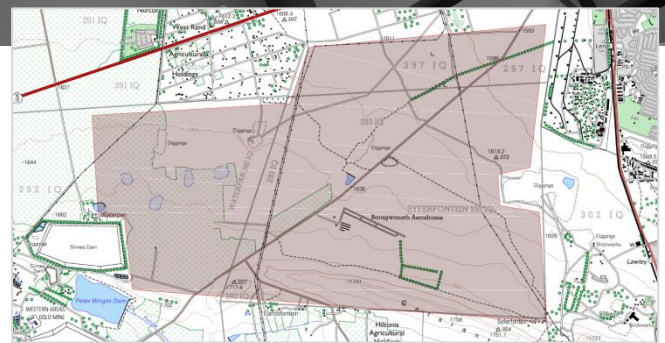
### The Task

The Gauteng Department of Human Settlements (GDHS) (Gauteng Provincial Government) released a 'radical' human settlements 'mega projects' strategy in April 2015 to cover housing development in the province over the 2014/15 – 2018/19 (5 year) period. The plan seeks to transform urban planning and coordinate housing development through the delivery of self-contained economies (residential, healthcare, education, recreational, retail, commercial and public transport facilities) of no fewer than 15,000 units and up to 60,000 units (low to high income residential units), compared to previously sporadic, small and isolated developments. This is also hoped to ease housing backlog pressures.

Development of the Syferfontein megacity in Gauteng's West Rand is one of a number of proposed developments, yielding 60,000 residential opportunities. Nurizon was appointed as a sub-consultant for LTE Consulting to undertake the preliminary design of the internal roads and stormwater for this development.

### Design Services

Preliminary designs for 332km of surfaced roads, and stormwater infrastructure were produced using City of Johannesburg standards, with 82 attenuation ponds designed to control the discharge of stormwater into bulk stormwater lines for site. Ponds were sized to accommodate 1:5 and 1:10 year flood recurrences, whilst carrier pipes were sized for a 1:25 year flood event. Preliminary geotechnical information indicated that the development was sited in a dolomitic area and all pipes, ranging in size (max diameter 1.2m), were



specified as HDPE. Ponds incorporated a HDPE liner.

Access to the development was via a number of existing routes (K13, K15, K208 and PWV5 provincial road, and the N12), which all required improvement to accommodate predicted traffic. Roads within the proposed megacity ranged from distributors to access loops as characterised in the South African TRH 26 document.

## The Result

Preliminary design drawings and cost estimates (BoQ) were provided to the client for the mixed-use Syferfontein development, within a highly condensed 1 month timeframe. The design is currently being evaluated and should all outstanding legal matters attributed the development be suitably addressed by the GDHS, designs for the mega project will continue – 3 phases over a 5-year development period.



Architectural image of envisaged Modderfontein Mega City  
(Engineering News, 2015)



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