Sir

ERF 660, DE DOORMS: UPDATED REPORT ON AVAILABILITY OF ENGINEERING SERVICES FOR THE PROPOSED DEVELOPMENT (REVISION 1)

1. INTRODUCTION

The proposed development consists of 38 erven, and is situated on the south-eastern corner of erf 660 adjacent to a school and the De Doorns Golf Course. The layout and locality is shown on the attached Figure 21436KS0 – Fig 2.

2. TOPOGRAPHY

The topography of the site can be described as flat with an average gradient of approximately 2.5%, and drains in a north-westerly direction towards the Hex River. No major earthworks are foreseen to ensure proper drainage routes.

3. ACCESS AND INTERNAL STREETS

There are two possible access roads to the development. The one is to upgrade the existing gravel access from Voortrekker Street to a surfaced road. To comply with acceptable standards, minor geometrical improvements will be required. The existing access needs to be relocated approximately 35 m to intersect Voortrekker Street opposite Barlinka Street. A splay needs to be introduced on the north-western boundary of this intersection to improve sight distances. The owner of this erf has given his consent to demolish the existing boundary wall, and rebuild it to ensure acceptable sight distances at the intersection.

The alternative access is also from Voortrekker Street via Le Serene Street. This would require that a section of concrete strip road has to be upgraded.

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Suitable storage facilities and turning circles for refuse vehicles should be provided at the entrance to the development.

A minimum road reserve width of 10m and a surfaced road width of 5m are proposed for the access and internal roads. The design of these roads will conform to at least the minimum standards of the local authority.

4. **STORM WATER DRAINAGE**

The topography of the existing vineyards is draining in a north westerly direction, and all storm water run-off generated by the development is eventually discharged into the stream which runs through the development. It is recommended that proper erosion protection measures be implemented where storm water is discharged into the stream. The minor 1:2 year storm will be accommodated in an underground storm water network consisting of catchpits and manholes.

A flood line study was done by Sinske Consult, and results submitted in a report "Flood line investigation, Romanze Development, Erf 660, De Doorns", dated October 2009. From this study it is evident that the 1:50 and 1:100 year flood encroaches onto Erven no. 1 to 5 and 38. (See attached drawing no. 21436KS0-Fig3). It is recommended that the minimum allowable floor level for each of the houses on these erven be specified to ensure that all floor levels are above the flood lines. No buildings will be allowed below these levels.

The proposed culvert crossing in the stream will be designed to accommodate the 1:10 year flood, which will overflow with storms of a higher recurrence internal.

5. **SEWER RETICULATION**

A new sewer line is proposed along the south western boundary of the development as shown on the attached Figure. This sewer line will be constructed in the short term, and will have sufficient capacity to accommodate the proposed development.

The internal sewer reticulation consisting of house connections, pipes and manholes will connect to the external line. The sewer pipe will be fixed to the culvert structure to cross the stream.

Breede Valley Municipality has confirmed capacity in the recently upgraded waste water treatment works (see attached letter dated 17 April 2009).

6. **WATER RETICULATION**

The development will connect to the municipal water reticulation network either via the existing access road in Voortrekker Street, or the proposed new access road via the Golf course. A water network analysis needs to be done to determine which is the best alternative from a capacity and pressure point of view. If the water connection is taken from the network at the existing access road, the access to the development will be via the Golf course road, as the available reserve width of the existing access road is too narrow to accommodate the road and services.
The internal network will consist of a reticulation main, erf connections, valves and fire hydrants as per specification of the local authority. It is foreseen that the development will be private with controlled access, in which case a bulk water meter will be provided at the entrance to the development. Each individual erf will be provided with a meter to facilitate the split of the municipal water account. This service will be provided by the, to be established Home Owners Association.

The owner of Erf 660 has transferred water rights of the farm to the local authority to ensure that the supply to the development can be met (see attached letter from Breede Valley Municipality dated 17 April 2009).

7. REFUSE REMOVAL

Refuse will be collected by the local authority at a central refuse room at the proposed entrance to the development. A water and sewer connection, as well as sufficient turning circles, need to be provided at this collection point.

8. TELKOM

Telephone services are provided by Telkom SA Limited. Telkom ducts, accessible junction boxes, and manholes will be installed with the civil engineering services. Telkom cables are installed when the first user applies for a telephone connection. This communication system can also be used for access control.

9. DAM SAFETY

A dam safety report and inspection was undertaken by Messrs Aurecon on the dam situated on the north eastern boundary of the proposed development. The report dated 5 October 2009 recommended the following:

- cutting of vegetation to facilitate further inspections of the dam wall at the pump house
- draining of water outlet valve to facilitate the inspection of possible seepage at the outlet valve
- a new drainage system at the toe of the dam
- monitoring of possible wave erosion and repair if necessary
- maintenance inspections to check seepage and stability
- normal maintenance procedures for dam walls are prescribed

10. ELECTRICITY

The bulk 11 kV infrastructure in the vicinity of the proposed development is adequate and can be extended to supply the required electricity (refer to the attached letter of Breede Valley Municipality dated 21 August 2008). A new miniature substation will be installed in the development. Internal services will consist of underground low voltage cables and sidewalk-mounted distribution kiosks. Streetlights will be installed as necessary.
As in the case of the external water connection, the access to the development will be via the golf course if the external electricity feed is along the existing access road. The following energy savings plan is proposed.

- Use of solar water heating for geysers.
- Gas ovens and stoves.
- Low energy streetlights using solar power with battery backup.
- Main access gates be solar powered with battery backup.

11. BULK SERVICES LEVIES

Bulk levies in respect of electrical as well as civil engineering services are payable to the local authority. These funds go toward providing and upgrading bulk services to supply new developments. The possibility of off-setting this levy, or a portion thereof, against the provision of external services to this development needs to be negotiated with the Municipality.

12. CONCLUSION

From the abovementioned it is evident that bulk services for the proposed development is readily available. A water network analyses needs to be performed to determine the most economical connection point. Similarly the electrical network needs to be investigated to verify the electricity supply point.

We trust the abovementioned meets with your approval. Please do not hesitate to contact us should you require any additional information.

Yours faithfully

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TECHNICAL DIRECTOR
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