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**Council for Geoscience**  
Leaders in Applied Geoscience Solutions



**Our Reference:** F4694.1  
Remainder of Erf 364, Wright Park Ext.1, Springs  
**Your Reference:** 11529  
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**No. of Pages:** 3

**19 August 2015**

Ekurhuleni Metropolitan Municipality  
P O Box 13  
Kempton Park  
1620

**ATTENTION: Mr. Pilusa Mashamaite**

*By Email: Pilusa.Mashamaite@ekurhuleni.gov.za*

Dear Sir,

**REMAINDER OF EFR 364, WRIGHT PARK EXTENSION 1, SPRINGS**

The firm, J Louis van Rooy Engineering Geologist (LvR) submitted their report: "Report on a dolomitic stability investigation for the proposed new shopping complex in Wright Park Extension 1, Springs, Ekurhuleni Metropolitan Municipality", dated 11 August 2015 on behalf of their client, Mr M. Masemola of Rebamoratiwa Property Investment Holdings, to this office for comment on 11 August 2015. This office acts as an agent to state authorities in reviewing dolomite stability investigations on their behalf.

The investigated site is located in the north-western corner of the intersection between Prince George Avenue and Pilansberg Road at the entrance to Wright Park, Springs. The land was previously used as a drive-in theatre and the countered parking ramps and projection room building is still present on site. Due to road servitude only the south-eastern part of the stand will be developed.

According to the 1:250 000 geological sheet 2628 East Rand, the site is underlain by sandstone, shale and coal beds of the Vryheid Formation, Ecca Group, Karoo Supergroup. LvR states that according to Council for Geoscience the area is regarded as being dolomite land due to possible dolomite bedrock within the upper 60 m below surface.

Two percussion boreholes were drilled on site. The required dolomite stability investigation includes the two boreholes which also serve as the footprint investigation for the proposed new shopping centre.

The stand is situated in the East Rand Groundwater Basin from which the major water abstraction component is contributed by the mines (24.5 million cubic metres per annum, DWAF, 2000). LvR indicates that groundwater was encountered at 19.3 m in BH01 with the rest level at 15.8 m below surface. Water was not observed during drilling in BH02 and the hole collapsed before the rest level, if any, could be measured. The general groundwater level in this area is generally located within the Karoo sediments. LvR states that the specific area can therefore be regarded as falling into an area where significant groundwater lowering will need to occur prior to any surface stability effects taking place.

The boreholes drilled on the site revealed the following:

- The first 3 m drilled returned reddish brown silty sand typical of the colluvial materials in the area.
- Very fine-grained powdery materials was returned with minor to traces of quartz grains and shale fragments between 3 m and 18 m in borehole BH01 and from 3 m to 36m in borehole BH02.
- The material was described as intercalated shale and sandstone of the Eccca Group.
- Between 18 m and 31 m in BH01 a weathered to fresh dolerite intrusion followed by carbonaceous shale and interbedded coal to 52m were intersected.
- Both boreholes were terminated in competent fresh quartzite (presumably Dwyka Group) from 52 m – 60 m in BH01 and 36 m – 52 m in BH02.

Having reviewed the report, we submit that:

- a) LvR classified the site as Inherent Hazard Class (IHC) 1 for both groundwater ingress and the dewatering scenarios.
  - ✓ The hazard assessment of the site is supported.
- b) LvR indicates that the proposed development of a new shopping centre classifies as a C3 type development in the SANS 1936-1:2012 document. C3 type developments requires footprint investigations on IHC 1 land with the implementation of a dolomite area designation D2 precautionary measures.
  - ✓ This office confirms that the geological conditions on the site are considered suitable for the proposed development.
  - ✓ This office confirms that the drilling of two percussion boreholes in the proposed footprint area of the structure is considered adequate and therefore satisfying the requirement by SANS 1936-1:2012.
- c) In Section 7.3 of the report, LvR indicates that the dolomite area designation of the site is regarded as D2 (based on SANS 1936-1:2012, for C3 type developments on IHC 1 land). LvR further indicates that it can however be argued that with no dolomite within the upper 60 m and the possibility of groundwater lowering to any significant extent being low that the site

can be classified as D1.


- ✓ This office is in agreement that the site can be considered as D1, since no dolomitic material was encountered in the upper 60 of the profile and the only reason why the site has been considered as being 'dolomitic' is based on the fact that the municipality, EMM, cannot guarantee the groundwater level. This office confirms that the hazard of sinkhole or subsidence formation on this site is regarded as very low and therefore confirms that a D1 can be motivated for this site.
- d) LvR indicates that the specific foundation measures will depend on the type of structure and the results from the shallow foundation investigation. This is supported.
- e) In Section 7.5 of the report, LvR states that an integrated dolomite risk management strategy would be required according to SANS 1936-4:2012. This is supported.
- f) The report's Conclusions and Recommendations (Section 7) are generally supported.

This Office confirms support to the proposed new shopping centre on Erf 364 Wright Park, Extension 1 in Springs, conditional to the points above and the following:

- g) The Local Authority must implement a risk management system. Commenting on the suitability of sites within its jurisdiction is based on the premise that this system will be implemented.

This letter reflects the Council for Geoscience's view and approach to development on dolomite at this time, as reflected by the above date. These comments may not be viewed as open-ended. If a property changes ownership or land-use changes are made, the comment may in part or wholly no longer apply. This Office should be informed of such changes and the Competent Person responsible for the dolomite stability investigation should be given the opportunity to indicate the influence such changes could have on the overall stability.

If you have any further queries, please do not hesitate to contact this office.

Yours faithfully,  
  
  
**A C OOSTHUIZEN**  
**Engineering Geologist**

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**CC:** J Louis van Rooy Engineering Geologist

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**Attention:** Prof. L van Rooy