

# RECOMMENDED EXEMPTION FROM FURTHER PALAEOLOGICAL STUDIES:

## Proposed Malabar Extension 6 Phase 2 Housing Development, Nelson Mandela Bay Municipality, Eastern Cape

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### 1. Outline of proposed development

The proposed development (DEDEAT Reference No: ECm1/LN2/M/12-36) entails the establishment of a subsidised housing development called the Malabar Extension 6 Phase 2 involving the construction of low cost housing units, public open spaces, community areas as well as associated infrastructure and bulk services. The proposed development is located within the area of Malabar Extension 6 and is situated to the west of Gelvandale and with Malabar to the east (Figure 1). Godetia Road borders the northern side and Beetlestone Road borders the southern side. The proposed development will be located on Portion of Remainder Erf 349, New Brighton and Erven 444 & 1806, Malabar within the Nelson Mandela Bay Municipality.

This palaeontological heritage assessment comment was commissioned by AECOM, Port Elizabeth who kindly provided the project description above (Contact: Ms Lucille Behrens. AECOM, 2 Fort Street, Central, 6000, Port Elizabeth, South Africa; T +27 (0) 41 585 2514 F +27 (0) 41 585 8478).

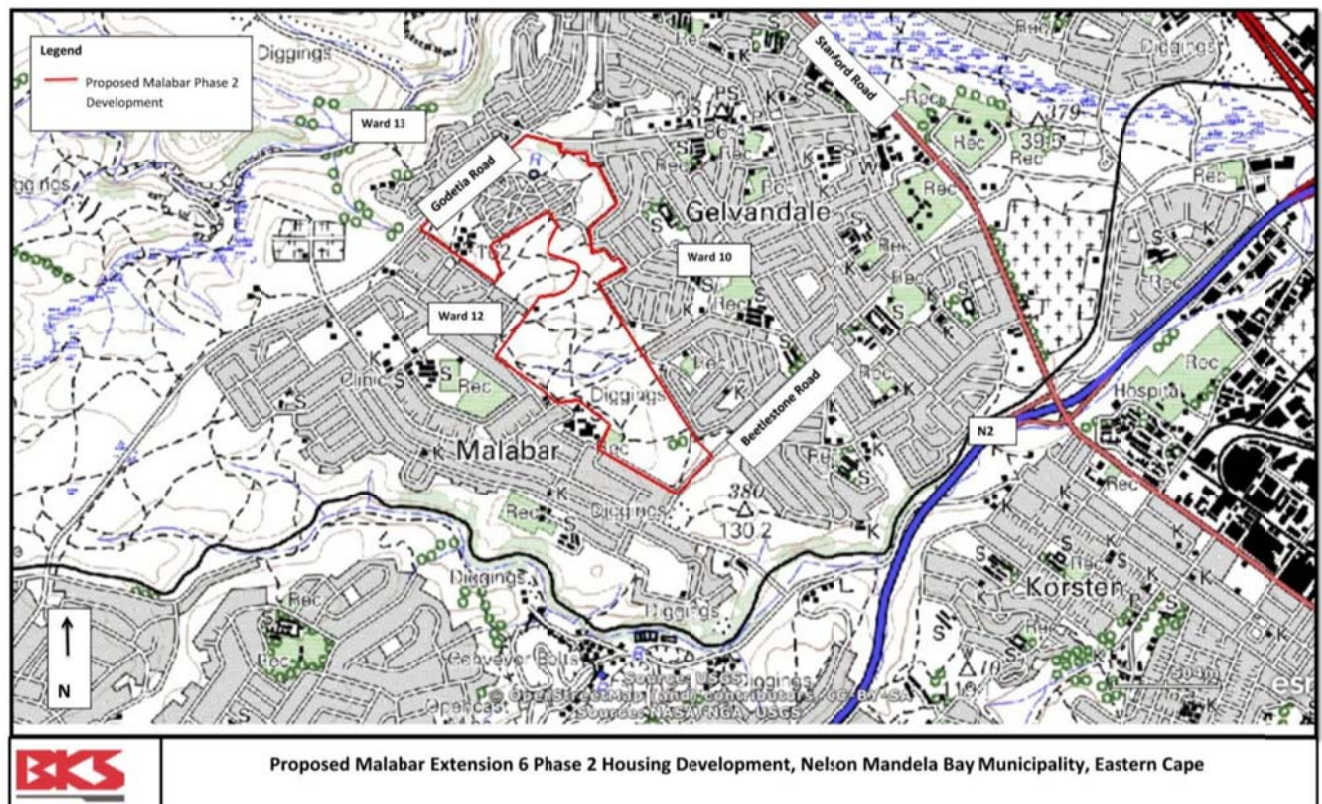
### 2. Geological background

The study area is located within Nelson Mandela Bay to the northeast of the N2 trunk road and between the existing suburbs of Malabar and Gelvandale (Figure 1). The geology of the area has been outlined by Toerien and Hill (1989) and Le Roux (2000) and is shown in map Figure 2 below. The entire area is underlain by quartzitic bedrocks of the **Peninsula Formation** (Ope, Table Mountain Group) of Ordovician age. This Ordovician succession was laid down by braided streams and comprises cross-bedded sandstones and quartzites with occasional mudrock intervals and pebbly conglomerates (Thamm & Johnson 2006).

### 3. Palaeontological heritage

The palaeontological record of the rock units represented in the study area has been reviewed by Almond (2010; see numerous references therein). Fossils in the Peninsula Formation consist only of a small range of trace fossils (burrows, trackways *etc*) and organic-walled microfossils associated with the occasional marine-influenced mudrock intervals, which are usually very poorly exposed at surface. The Table Mountain Group sediments in the Eastern Cape have often suffered high levels of tectonic deformation, compromising preservation of

fossils, especially within the less resistant mudrock horizons. The palaeontological sensitivity of the Peninsula Formation is considered to be LOW (Almond *et al.* 2008).



**Figure 1: Map showing the location of the proposed Malabar Extension 6 Phase 2 Housing Development, Nelson Mandela Bay, Eastern Cape (red polygon) (Image kindly provided by AECOM).**

#### **4. Conclusions and recommendation**

The impact significance of the proposed Malabar Extension 6, Phase 2 Housing Development, Nelson Mandela Bay Municipality on local palaeontological heritage resources is considered to be LOW.

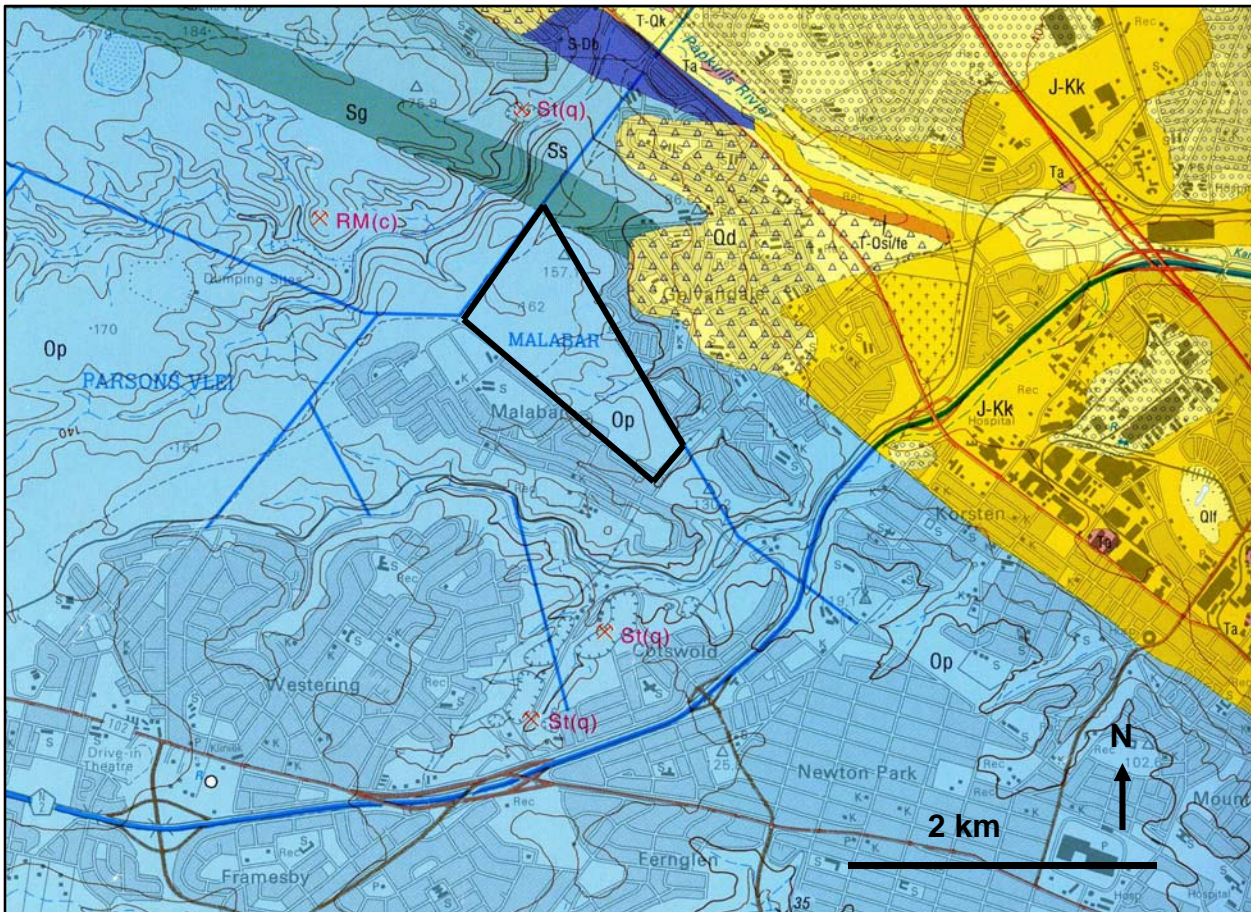
**It is therefore recommended that exemption from further specialist palaeontological studies is granted for the proposed Malabar Extension Phase 2 Housing Development.**

Should substantial fossil remains (e.g. dense concentrations of shells or trace fossils) be encountered or exposed during construction, however, the Environmental Control Officer (ECO) should safeguard these, preferably *in situ*, and alert the Eastern Cape Provincial Heritage Resources Authority, ECPHRA (Contact details: Mr Sello Mokhanya, 74 Alexander Road, King Williams Town 5600; smokhanya@ecphra.org.za) as soon as possible so that appropriate action (e.g. recording, sampling or collection) can be taken by a professional palaeontologist.

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**Figure 2: Extract from 1: 50 000 geological map 3425BA Port Elizabeth (Council for Geoscience, Pretoria) showing the geology beneath the proposed Malabar Extension 6 Phase 2 Housing Development, Nelson Mandela Bay, Eastern Cape (black polygon). The main bedrock geological unit represented here is the quartzite-dominated Peninsula Formation of Ordovician age (Op, pale blue; Table Mountain Group).**

## REFERENCES

- ALMOND, J.E. 2010. Palaeontological heritage assessment of the Coega IDZ, Eastern Cape Province, 113 pp. Natura Viva cc, Cape Town.
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- LE ROUX, F.G. 2000. The geology of the Port Elizabeth – Uitenhage area. Explanation of 1: 50 000 geology Sheets 3325 DC and DD, 3425 BA Port Elizabeth, 3325 CD and 3425 AB Uitenhage, 3325 CB Uitenhage Noord and 3325 DA Addo, 55pp. Council for Geoscience, Pretoria.
- THAMM, A.G. & JOHNSON, M.R. 2006. The Cape Supergroup. In: Johnson, M.R., Anhaeusser, C.R. & Thomas, R.J. (Eds.) The geology of South Africa, pp. 443-459. Geological Society of South Africa, Marshalltown.
- TOERIEN, D.K. & HILL, R.S. 1989. The geology of the Port Elizabeth area. Explanation to 1: 250 000 geology Sheet 3324 Port Elizabeth, 35 pp. Council for Geoscience. Pretoria.

## QUALIFICATIONS & EXPERIENCE OF THE AUTHOR

Dr John Almond has an Honours Degree in Natural Sciences (Zoology) as well as a PhD in Palaeontology from the University of Cambridge, UK. He has been awarded post-doctoral research fellowships at Cambridge University and in Germany, and has carried out palaeontological research in Europe, North America, the Middle East as well as North and South Africa. For eight years he was a scientific officer (palaeontologist) for the Geological Survey / Council for Geoscience in the RSA. His current palaeontological research focuses on fossil record of the Precambrian - Cambrian boundary and the Cape Supergroup of South Africa. He has recently written palaeontological reviews for several 1: 250 000 geological maps published by the Council for Geoscience and has contributed educational material on fossils and evolution for new school textbooks in the RSA.

Since 2002 Dr Almond has also carried out palaeontological impact assessments for developments and conservation areas in the Western, Eastern and Northern Cape under the aegis of his Cape Town-based company *Natura Viva cc*. He is a long-standing member of the Archaeology, Palaeontology and Meteorites Committee for Heritage Western Cape (HWC) and an advisor on palaeontological conservation and management issues for the Palaeontological Society of South Africa (PSSA), HWC and SAHRA. He is currently compiling technical reports on the provincial palaeontological heritage of Western, Northern and Eastern Cape for SAHRA and HWC. Dr Almond is an accredited member of PSSA and APHAP (Association of Professional Heritage Assessment Practitioners – Western Cape).

### Declaration of Independence

I, John E. Almond, declare that I am an independent consultant and have no business, financial, personal or other interest in the proposed development project, application or appeal in respect of which I was appointed other than fair remuneration for work performed in connection with the activity, application or appeal. There are no circumstances that compromise the objectivity of my performing such work.



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