

7 August

Astoria Group  
C/- Newplan  
Level 6, 432 Kent Street  
Sydney NSW 2000

Delivered via email to: [steven@newplan.com.au](mailto:steven@newplan.com.au)

**Attention: Steven Liaros**

**RE: Lakes Estate Project - Environmental and geotechnical matters**

I refer to our recent telephone conversation on 3 August 2012 regarding outstanding matters on the Lakes Project in Coffs Harbour. We understand that the project has largely been reconfigured and a new lot layout prepared. Coffey Geotechnics Pty Ltd (Coffey) has consulted the final project layout prepared as drawing series FSA-001 to FSA-014 (Revision A) prepared by Astoria Group.

The new lot layout limits further development of the lower lying water course and provides for generally gently to moderately sloped lots across much of the proposed development. Whilst internal road design has not been fully completed (which is expected for a pre approval project) we understand that the proposed road network will not require significant retention structures or supported cuttings. Further to this inter allotment retention structures are not likely to be required.

We understand that the project is currently seeking approval, and you require a synopsis of the geotechnical and environmental contamination issues that can be closed out following project approval and prior to provision of a subdivision certificate, as is the normal process for residential land development.

Coffey understands that the following outstanding matters are to be addressed:

- a) Environmental soil contamination issues on the former banana lands and around the associated structures identified in Coffey report GEOTCOFH02233AA-AE dated 27 February 2008.
- b) Geotechnical issues relating to development of steep slopes, road foundations in creek lines, and retention systems.

In Coffey's experience in undertaking residential land development in the Coffs Harbour Local Government area and surrounds, these issues are not unusual and normal development protocols and engineering advice can address these issues with sufficient time and funds. Such issues are normally identified in the planning stage of the project, and then addressed in detail following approval of the development, but prior to final approval for subdivision.

With regards to the environmental contamination issues we advise that the following steps be followed (in line with the NSW contaminated land guidelines):

- E1. Detailed site investigation of the areas of concern identified in Coffey report GEOTCOFH02233AA-AE dated 27 February 2008 should be undertaken by Coffey. The objective of this it to assess the extent and nature of soil contamination, and to inform the preparation of a Remedial Action Plan (RAP).
- E2. Based on the findings of the investigations Coffey will prepare a RAP to remediate the areas of soil contamination.
- E3. Following consultation with Coffs Harbour City Council (CHCC) the need for a development approval to allow implementation of the RAP will be established and the RAP will be implemented on site with appropriate contractors and Coffey overseeing the works.
- E4. Following completion of the remedial works Coffey will prepare a site validation assessment to assess that the land has been made suitable for its intended use.

With regards to the geotechnical issues, we note the Coffey Report GEOTCOFH02233AA-AE dated 27 February 2008 included guidance for planning level design of the project. Further detailed design input will be required once the final design of the development is defined and certainty that the project will progress been gained through planning approval of the proposal.

We expect further engineering input would be required on approval of the project, but prior to lodgement of a subdivision certificate. It is not generally feasible to undertake investigation for detailed design of retaining walls / roadways and culverts until initial approvals are gained. In light of this Coffey has considered the lot layout based on the plans supplied and expects that once approved further geotechnical advice will assist development in an informed manner.

As such we recommend:

G1. Following completion of detailed design and project approval Coffey would:

- a. Investigate the locations of proposed individual features such as retaining walls and road infrastructure, to allow structural engineers to undertake design of the features. Works would include preparation of detailed design parameters and pavement thickness designs as well as providing advice on foundations for culverts and other water sensitive infrastructure.
- b. Provide guidance on where controlled filling should be undertaken to meet the guidelines of AS3798-2007 *Guidelines on earthworks for commercial and residential developments*.
- c. Prepare site classification assessments to AS2870-2011 *Residential Slabs and Footings*. The site classification assessments can then be used to assess the site constraints at subdivision certificate stage. Where "P" classifications are noted, the reports shall include specific engineering advice on how to develop the site for residential use. This may include recommending further investigation an slope risk assessments on individual lots, or further investigation to allow provision of specific parameters and founding levels.
- d. Investigate individual lots where site classifications note the need. Slope risk assessments should be undertaken in accordance with the Australian Geomechanics Society Practice

Note Guidelines for Landslide Risk Management (known as AGS 2007). The risk assessment process should include definition of site specific development guidelines for the individual lots. Based on the lot layout provided we do not expect a significant number of lots to be affected by slope stability constraints.

We note that undertaking the above works will require significant investment in time and funds. Such works are normally undertaken once project approval has been provided and completed prior to subdivision approval. This allows these geotechnical and soil contamination matters to be addressed by the developer after they have some confidence that the project will proceed.

Given that the issues noted on this site are not extraordinary, a staged process as outlined above is reasonable. No further works are considered necessary to inform the initial project approval process.

Please contact the undersigned should you require further assistance with this matter.

For and on behalf of Coffey Geotechnics Pty Ltd



**Tom Nicholson**

Associate

Distribution: Original held by: Coffey Geotechnics Pty Ltd (Coffey)  
1 Copy (electronic adobe.pdf copy) Astoria Group