

Dunedin City Council

Review of Contamination Issues, Proposed Mitigation and NES Implications for a Proposal to Carry out Earthworks for Foundation Footings and Site Development at 401-403 High Street, Dunedin

Background

The following review memo has been prepared by Stantec New Zealand (formerly MWH) to assist Dunedin City Council with consideration of the implications under the National Environmental Standard for Assessing and Managing Contaminants in Soil to Protect Human Health Regulations (the NES) of the proposal by the Downie Stuart Foundation to construct a new three-storey residential building at the rear of 403 High Street, Dunedin. A land use consent application (LUC-2017-418) has been made for the proposed construction activities.

Discussion

Construction of the building will require quite extensive earthworks and the site is known to have a fill layer of approximately 1m depth, with the fill being of unknown origin. The site therefore has HAIL status, given that landfilling has previously occurred on the site (this is accorded category G3 in the Ministry for the Environment's HAIL). The NES applies to disturbance of soil on a HAIL site and, further, the proposed earthworks are of such a volume as to exceed the permitted activity criterion under the NES.

Environmental Consultants Otago (EC Otago) has carried out sampling and analysis of the fill layer material across the site and these results are documented and discussed in an Assessment of Environmental Effects (AEE). The AEE establishes that the preparation of the site and the excavation of the foundations for the proposed building will involve disturbance of soil in a volume to area ratio that will exceed the permitted activity criterion under the NES of 25m³ per 500m² of site area. It is also likely that off-site disposal in a volume to area ratio greater than the permitted 5m³ per 500m² of site area will be necessary and these two factors together establish the discretionary nature of the proposed activity under reg 11(1) of the NES.

The analytical results obtained for the soil sampling undertaken by EC Otago show that the majority of the samples had concentrations of lead as a contaminant that exceeded the Soil Contaminant Standard (SCS) for a residential land use. Some samples also showed SCS exceedances for polycyclic aromatic hydrocarbons (PAHs). EC Otago concluded correctly that there is a high degree of contamination variability across the site and that extensive hot spots of contamination are present.

The proposed site works will include removal of up to 210m³ of contaminated soil for off-site disposal and the replacement of much of this volume with imported cleanfill material. The necessary site activities required to excavate the contaminated material will create potential health, safety and environmental issues for workers and possibly the general public; EC Otago has therefore prepared a Contaminated Soil Management Plan (CSMP) to provide a thorough set of best practice requirements and actions to mitigate the H&S and environmental effects of the site works.

This CSMP is essentially a standard document that EC Otago has prepared and utilised previously (and which Stantec has also reviewed previously on a number of occasions), but with the document suitably rejigged to suit the purposes and context of the current situation. As such the CSMP document is thorough, complete and, provided that its provisions are conscientiously and competently applied by the site contractor, an appropriate level of site health and safety and environmental mitigation will be provided, both for construction workers and the general public.

A single consent condition relating to contamination issues is proposed by EC Otago; this is that earthworks should be carried out in accordance with the CSMP. Stantec supports this condition and does not believe that any additional conditions are necessary, at least with respect to earthworks activities at the site.

Conclusions

With respect to the NES the discussion set down in EC Otago's AEE and the conclusions reached regarding consent requirements in that document are correct and are endorsed following our review.

The disposal criteria for soils to be removed offsite are appropriately scoped and stated.

The precautionary approach and proposed content of a Contaminated Soils Management Plan (CSMP) is suitable for this work and the acceptance of such a peer-reviewed CSMP and the implementation of its provisions should be made a condition of consent.



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