ARCADIS Design & Consultancy for natural and built assets

Moorebank Precinct East Stage 2 Proposal Response to Submissions

Appendix G: Stockpile Management Protocol

SIMTA

SYDNEY INTERMODAL TERMINAL ALLIANCE

Part 4, Division 4.1, State Significant Development

July 2017

STOCKPILE MANAGEMENT PROTOCOL

This protocol outlines the procedures for the management of stockpiles on the Moorebank Precinct East (MPE) Stage 2 Proposal site during construction, relating to:

1. Materials characterisation
2. Material handling (stockpiling and recovery from stockpile)
3. Stockpile profile
4. Stockpile water management
5. Stockpile stabilisation.

This document is to be read and referenced in the preparation of the following sub-plans to the CEMP for the Proposal:

- Construction Air Quality Management Plan (CAQMP)
- Construction Noise and Vibration Management Plan (CNVMP)
- Construction Traffic Management Plan (CTMP)
- Construction Soil and Water Management Plan (CSWMP).

Materials characterisation

Imported material

Material to be imported and stockpiled on the Proposal site would comprise Virgin Excavated Natural Material (VENM) or Excavated Natural Material (ENM) sourced from existing infrastructure projects within Sydney, notably tunnel excavations. The material would typically be ripped sandstone with a maximum particle size of 200 mm, and potential for a low proportion of fines and siltstone to be present. Oversized materials that meet all other material type specifications, but have a particle size over 200 mm, would be crushed onsite into sub-200 mm particles.

Material characterisation would occur prior to being exported to the Proposal site, i.e. by the producer of the material at source, in accordance with the *NSW Waste Classification Guidelines* and the Earthworks Specification for the MPW Site.

In order to accept fill material onto site, material characterisation reports/certification showing that the material being supplied is VENM/ENM must be provided.

Each truck entering the MPE Stage 2 Proposal site will be visually checked and documented to confirm that only approved materials that are consistent with the environmental approvals are allowed to enter the site. Only fully tarped loads are to be accepted by the gatekeeper.

Environmental Assurance of imported fill material will be conducted to confirm that the materials comply with the NSW EPA Waste Classification Guidelines and the Earthworks Specification for the MPE site. The frequency of assurance testing will be as nominated by the Environmental assuror/auditor.

Site-won material

Stockpiles may also be formed from site-won materials such as surficial soils, unsuitable materials, unexpected finds of contamination and temporary excavation materials.

Stripped topsoil within areas of high quality vegetation would be stored and reused in future landscaping. Where necessary, topsoil may be required to be treated in order to increase its ability to support vegetation growth.

Excavated material would be tested in-situ and materials that are deemed suitable for beneficial re-use on site would be stockpiled for treatment/ processing. Unsuitable materials, that are not deemed suitable for processing/ treatment would be removed off-site to a licensed waste facility.

Material handling

Materials would be brought to site by trucks (approximately 15 tonne and/ or truck and dogs (approximately 30 tonne). All trucks accessing the site for the purpose of clean general fill importation would enter and exit via the existing main MPE Stage 2 site access located in the North-west of the MPE site from Moorebank Avenue. The trucks would be directed by the gatekeeper to follow a nominated site haul road, and upon arrival at the fill tip point the truck spotter would direct the driver to the unloading point. Material would be placed within the stockpile areas nominated by the site supervisor.

Imported fills to be stockpiled for future use would be directed to the stockpile location by the gatekeeper. The trucks would follow a nominated site haul road, and upon arrival at the stockpile the truck spotter would direct the driver via the two-way radio or visual communication to the unloading point.
The truck driver and truck spotter would ensure that the unloading point is a firm, stable, and level pad, suitable for the unloading operation. The truck spotter would ensure that no pedestrian or light vehicle is within the potential fall zone of a fully extended truck body. Once unloaded, the truck will exit the tip area and the imported clean general fill will be pushed out using a compactor, or similar, to achieve the required geotechnical compaction. Moisture conditioning will be conducted as required by a water cart spraying the soils. Windrows would be established on the stockpile to serve as a safety barrier for traffic movements on the top of the stockpile.

The importation of clean general fill to the Proposal site would be undertaken concurrently with the operation of the IMEX terminal and operation of some existing warehouses in the northern half of the MPE site. Clean general fill would be transferred throughout the Proposal site periodically as the earthworks activities are undertaken. Ingress and egress to the stockpiling areas would be arranged so that the reversing of trucks within the site is minimised.

On commencement of site fill activities, removal of material from an existing stockpile would progress in reverse of the formation process.

Stockpile profile

The formation of stockpiles would be in constant transition (i.e. established and then decommissioned as fill is spread across the MPE site). Stockpiles would not exceed ten-metres in height from the final site levels, with battered walls at gradients of 1V:3H. For any stockpile heights greater than 4 m, benching would be implemented. To minimise the potential for erosion and sedimentation of stockpile(s) stockpiling area, stockpile profiles would typically be at angle of repose (the steepest angle at which a sloping surface formed of loose material is stable) with a slight concave slope where reasonable and feasible, to limit the loss of sediments off the slope, or through the profile and the formation of a toe drain. The top surface of the stockpile(s) would be slightly sloped to avoid ponding and increase run off.

This progressive stockpile formation would enable the stockpile to form a barrier to airborne dust, light and noise resulting from tipping or subsequent remobilisation of fines from working faces and the movement and operation of construction plant and equipment. Further, water carts would be available as required to provide dust suppression.

Stockpile water management

Prior to the commencement of stockpiling activities on the site, the construction contractor would produce an Erosion and Sediment Control Plan (ESCP). Stockpile water management would vary depending upon

the material composition of the stockpile and its likely residence time. Topsoil stockpiles that are relatively low in height (i.e. no greater than 1.5 m) and used for temporary berms prior to reuse in landscaping would have minimal requirements relating to water management. Topsoil stockpiles would be vegetated to minimise erosion.

In accordance with the Blue Book[1], stockpiles would be protected from upslope stormwater surface flow through the use of catch drains, berms, or similar feature(s) to divert water around the stockpile(s). A sediment control device, such as a sediment fence, berm, or similar, would be positioned downslope of the stockpile to minimise sediment migration. Toe drains at the base of stockpiles would preferentially direct any stormwater surface flows to sediment basins.

Any water seepage from stockpiles would be directed by toe drains at the base of the stockpiles toward the sediment basins or check dams and away from the emplacement or extraction working face.

Stockpiled material is expected to be predominantly composed of ripped sandstone, with a maximum particle size of 200 mm[2]. Newly formed stockpiles would be compacted (sealed off) using a smooth drum roller at the end of each working day to minimise water infiltration.

Haul roads would be located alongside the stockpile to the work/tipping area. As per best practice, the catchment area of haul roads for surface water runoff would be approximately 25-30 m lengths, facilitated by the provision of spine drains which would convey water from the haul road to toe drains at the base of the stockpile, and then to sediment basins.

Temporary sediment basins would be established in accordance with the ESCP prepared for the site.

It is noted that an ESCP would be developed by the construction contractor to accompany the Stockpile Management Protocol which would further detail water management options to be employed during construction. The ESCP would outline standard controls to be installed, as well as a wet weather plan to be implemented prior to forecast heavy rainfall. Additional controls may include, but not be limited to, shaping of the stockpile, additional catch drains and dams, temporary stabilisation of stockpiles and/ or the installation of batter chutes to convey water from the top of the stockpile to the toe drains.

Stockpile stabilisation

Stockpiling of clean fill material is to be carried out during Works Period A (pre-construction) and Works Period D (bulk earthworks). The timespan for these two works periods are three and 18 months respectively. Long-term stockpiling of clean fill material is expected to be a practice used sparingly during the construction of the Proposal. Any imported clean general fill material that would be subject to stockpiling within the Proposal site for more than a 10-day period without being worked on, would be subject to stabilisation works, to minimise the potential for erosion. Stabilisation requirements would be dependent on the type of material stockpiled as outlined below.

Materials stabilisation for course stockpiles may include using options such as rock armouring.

Where the material being stockpiled is less coarse or has a significant component of fines then surface and slope stabilisation would be undertaken. Methods for slope stabilisation may include:

- Application of a polymer to bind material together. This is a medium-term temporary solution where re-application is not required within three months and where the batter of the stockpile would not be disturbed. The surface of the stockpile should be smoothed prior to application. A heavier polymer can also be applied to the haul roads to minimise dust generation during trafficking.
- Application of hydro-seed or hydromulch. This is a longer term solution, again only to be applied where the batter of the stockpile would not be disturbed. It is noted that hydro-seed should only be applied on

[1] Landcom: Managing Urban Stormwater: Soils and Construction (The Blue Book)
[2] Imported material with particle sizes greater than 200 mm (conforming with all other material specifications) would be sorted and crushed into sub 200 mm particles for use as clean fill.

to a surface already prepared with topsoil. Where seeding and/or mulching are applied the application surface needs to be profiled and freshly disturbed prior to any hydro-seeding or hydro-mulching to prevent washout of the seed or mulch. Stabilisation with vegetation would be undertaken with hybrid non-regenerative grasses where required.

- Covering batters with mulch to provide ground cover. Mulch must not be used within 40m of a waterway to minimise the potential for tannins entering the water system. This is a medium-term temporary solution where batters are not to be disturbed.
- Covering batters with geofabric.
- Use of a simple sprinkler system for temporary stockpiles, including use of radiating sprinkler nozzles to maintain fine spray over exposes surfaces.
- Other options identified by the Contractor.

Topsoil stockpiles would be seeded with a grass/legume or nitrogen fixing species (such as acacia) to assist in erosion control and reduce loss of beneficial soil micro-organisms.

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