

Council's Ref: MC-06-1733
Your Ref: CP 06_0025 MOD 1

13 July 2012

Kerry Hamann
Major Development Assessment
NSW Department of Planning & Infrastructure
GPO BOX 39
Sydney NSW 2001

Dear Ms Hamann,

RE: Hanson Concrete and Asphalt Facility, Eastern Creek – Site Layout Modifications (CP 06_0025 MOD 1)

Reference is made to the application received by the Department of Planning and Infrastructure from Hanson Construction Materials Pty Ltd for site layout modifications to the concept and project approval for its concrete and asphalt production and recycling facility at Eastern Creek.

Please be advised that Council has no objection in principle to the proposed modification provided that all conditions in Schedule 4 and 5 of the Concept Plan Approval dated 3 June 2010 are met by the applicant to both the Department of Planning and Infrastructure's and Council's satisfaction.

In addition, Council raises no objection to the approval of the proposed modifications to Concept Plan Approval CP 06_0225, subject to the imposition of the following additional conditions:

General Conditions

1. Council will not be responsible for the ongoing maintenance of the diversion channel from Grevillea Street, the drainage line from pit 1/1 to pit 11/2, any areas using gabions or Reno mattresses, the proposed wetland, bioretention system or detention basin.

Prior to release of the Construction Certificate

2. An amended Concept Stormwater Management Layout Plan for drainage by Martens and Associates Pty Ltd addressing the following is required:
 - a) Delete any reference to "or equivalent" when referring to the CDS units.
 - b) On sheet 10 the collection pipes are to be un-socked slotted PVC. Provide a detail for an end riser using two 45 degree bends with short straight section un-slotted section of PVC in between and extending to a minimum of 300 mm above surface level with a screw cap for periodic flushing. All intermediate collection pipes are to have their own flushing points and are to be increased in size greater than 100 mm to carry the increased flow.

- c) On sheet 10 the cross-section through the bioretention system is completely wrong. A revised section is required comprising between 400 mm to 600 mm of filter material, a 100 mm transition layer of coarse sand and a minimum of 250 mm of 5 mm gravel all wrapped in HDPE or equivalent liner.
 - d) On sheet 10 delete the reference to "turfed" in section A-A.
 - e) On sheet 10 delete the reference to "Type B Geotextile" in sections A-A and B-B.
 - f) On sheet 10 provide scour protection to the 300 mm outlet from 1/1.
 - g) Consider a temporary bioretention detail that allows partial installation before 90% of development is complete upstream that replaces the top 75 mm of filter media with coarse sand underlain by geotextile as a sacrificial and replaceable layer.
 - h) On sheet 8 provide a minimum 3 m wide vehicular access at maximum 10% grade to the bioretention area and wetland for maintenance.
3. Where any new or relocated building works are to be provided an experienced engineer is to prepare and have approved a detailed rainwater supply, pipe and fixture plan for all non-potable water uses on the site including all concrete batching, toilet and urinal flushing and landscape watering. A minimum of 80% of non-potable uses are to be met through rainwater. The plan is to show the rainwater pipe arrangement including pre-treatment, pump, mains tank top up, meters, isolation valves and an inline filter on the outlet. Rainwater warning signs are to be fitted to all external taps.
 4. Where the non-potable water demand for the proposed development is very high and the 80 % reuse cannot be achieved, consideration is to be given for a duplicate dedicated drainage system that only collects roofwater from at least part of the subdivision to supplement the non-potable water supply.
 5. Details are to be provided for permanent interpretive signage minimum A0 size to be installed to highlight the water quality improvement process of the subdivision. The sign is to detail through a layout plan, cross-sections, words and pictures all the different water quality devices including the rainwater tank and the benefit to the subdivision and community. The sign is to be supported by post(s) or on an adjacent wall and is to be located adjacent to the wetland and bioretention areas. The wording and detail is to be approved by Council.
 6. Landscape plans are required that include appropriate species for the bioretention and wetland system in accordance with the BCC Handbook Part 5 - Vegetation Selection Guide (draft or as revised). Planting should incorporate several growth forms, including shrubs, tufted plants and groundcover species and be densely planted to ensure plant roots occupy all parts of the media. A minimum of 10 different species is required for each of the bioretention and wetland areas.
 7. The heights of the retaining walls are excessive in the Bulk Earthworks plans. An amended earthworks plan is required to limit any retaining wall rise to 3 m with a 1.5 m landscaped set back between additional rises to reduce the visual impact in accordance with figure 42 of SEPP 59.
 8. On sheets 11 and 12 of the Bulk Earthworks plans prepared by Martens and Associates Pty Ltd the footings of the retaining wall are to extend to a minimum of 300 mm below the invert of the adjacent pipeline to enable future excavation of the pipeline for maintenance and or replacement.

9. A Vegetation Management Plan is to be developed over the riparian area to ensure full restoration and ongoing maintenance of this area in consultation with the Office of Water and Council.
10. Calculations are to be provided to justify the dimensions and sizing of the scour protection aprons detailed on sheet 8 of the Concept Stormwater management layout Plan by Martens and Associates Pty Ltd for the basin and whether energy dissipation is also required. Where additional scour protection or energy dissipation is required the details are to be provided on the amended drainage plans. Reno mattresses are not permitted as scour protection within the riparian area.
11. The road, interallotment and internal pipe network is to be designed in accordance with the current Council's Engineering Guide for Development to carry the 20 year ARI storm flows and justified through DRAINS modelling.
12. The proposed channel through lots 4 and 5 draining a number of upstream lots above including Grevillea Street needs to be designed to capture and carry the 1 in 100 year upstream flows assuming no detention. Calculations and/or models need to be provided to justify the size and slope.
13. The on-site detention basin is to be designed to mitigate all post developed flows (assuming 95% impervious) from the site to match a pre developed rural catchment for all storm events from 1 in 1 year ARI to 1 in 100 year ARI. No storage is to be considered below the permanent water level of the wetland. This design is to be supported by DRAINS modelling and account for any bypass of the detention basin, however the riparian area can be excluded. The basin is to be designed to set the weir overflow a minimum of 200 mm above the peak 1 in 100 year ARI storage level. The spillway is to be designed to cater for the PMF event without scouring and ensuring the stability of the basin wall. An assessment is required by the design engineer as to whether the basin should be referred to the Dam Safety Committee considering future development downstream. A copy of the final DRAINS model is to be provided to Council.
14. Calculations/spreadsheets are to be provided to justify the H vs Q relationship used in the DRAINS model overflow based on the multiple orifice and weir combination for the detention basin. Where there are any differences between the calculations and the H vs Q DRAINS modelling, revised DRAINS modelling and amended drainage plans are to be provided.
15. The development will require the submission of an Integrated Water Cycle Management Strategy in accordance with the requirements of Part R of DCP 2006. This will also require the Stream Erosion Index to be under 3.5.
16. Water quality needs to be provided in accordance with Council's current Integrated Water Cycle Management standard in Part R of Blacktown DCP 2006 allowing for typical future development where the proposed lot development is unknown and justified through electronic MUSIC modelling. A copy of the final MUSIC model is to be provided to Council.
17. Electronic MUSIC modelling is required to address the following:
 - a) No exfiltration is permitted in Blacktown.
 - b) The maximum Saturated Hydraulic Conductivity permitted in Blacktown for bioretention is 125 mm/hr.
 - c) The maximum Extended Detention Depth for bioretention permitted in Blacktown is 400 mm.

- d) In the bioretention node allow for a TN content of bioretention filter media of 800 mg/kg.
 - e) In the bioretention node allow for an Orthophosphate content of bioretention filter media of 35 mg/kg.
 - f) The minimum filter media depth for bioretention permitted in Blacktown is 400 mm.
 - g) The bioretention system is to be encased in an HDPE liner or similar.
 - h) The surface area calculated for bioretention is to be assessed at half the Extended Detention Depth.
 - i) The rainfall used in MUSIC is to comply with the Blacktown Council's design rainfall data set including evapotranspiration data available electronically upon request.
 - j) The Source Node data is to comply with the Blacktown Council's specific Source Nodes for use in Blacktown. Council can provide the source node data electronically upon request.
 - k) No TSS, TP or TN removal is permitted through use of the trash rack within the detention discharge control pit, only removal of gross pollutants.
 - l) The whole site area is to be included when developing the MUSIC model. This includes any area of bypass.
 - m) Allow for a 20% loss in rainwater tank volume to allow for overflow levels and mains water top up levels.
 - n) Allow for rainwater reuse of 0.1 KL/shift per toilet/urinal in industrial/commercial developments and 0.05 KL/shift per disabled toilet. However where site is occupied say 5 ½ days per week the daily usage rate is to be multiplied by 5 ½ / 7.
 - o) Bioretention systems using submerged zones are not permitted in Blacktown.
18. The wetland as proposed is unacceptable and an amended design is required to address the following:
- a) Provide an inlet zone.
 - b) Provide macrophyte zones at varying depths to allow planting of a diverse range of plant species typically from 0.25 to 0.5 m.
 - c) Provide a deeper open water zone.
 - d) Provide an internal wall system to increase residence time and avoid short circuiting.
 - e) Provide a liner or a 300 mm compacted clay base under.
 - f) Provide vehicular maintenance access to the basin at 10 % grade.
 - g) Allow for an internal drainage system that will allow for the permanent pool and remainder of wetland to be totally drained for maintenance.
 - h) Design a riser that allows for a notional detention time of 48 to 72 hours for stormwater treatment. Allow for this storage when assessing the operation of the detention basin with the appropriate discharge control.
 - i) Provide a high flow bypass channel around the wetland.
 - j) When designing the wetland within a detention basin, the outlet control structure of the detention basin should be placed at the end of the wetland

high flow bypass channel. This ensures flood flows 'backwater' across the wetland thus protecting the macrophyte vegetation from scour by high velocity flows.

19. The drainage pits and pipelines within the proposed public roads are to comply with the requirements of the Council's Engineering Guide for Development 2005 (and as amended) including a minimum 375 mm pipe size. Pits with opposing pipe flows are prohibited and lateral pipes should join at an angle between 30 to 60 degrees. Amended plans are required.
20. A Maintenance Schedule is to be prepared for the Detention Basin and Stormwater Quality Improvement Devices including the gross pollutant traps, bioretention systems, wetlands and rainwater tanks. The maintenance schedule is to include details of the ultimate replacement of the bioretention basin and wetland and when.
21. Where Council is not the Certifying Authority, an independent engineering consultant is to assess the final drainage plans and certify that the pipe/pit systems DRAINS modelling and water quality requirements including MUSIC modelling meet Council's Engineering Guide for Development 2005 (and as amended) design standard and the consent conditions.

During Construction

22. The CDS Gross Pollutant Traps are not to be reduced in quantity or size, nor replaced with an alternate manufacturer's products.
23. The plants in the wetland are not to be installed until a minimum of 90% of the upstream catchment is developed.
24. Certification is to be provided that the bioretention filter media satisfies the soil specification available from the Facility for Advancing Water Biofiltration (FAWB) at Monash University: <http://www.monash.edu.au/fawb/>. The minimum hydraulic conductivity as defined by ASTM F1815-06 is to be 250 mm/hr. Where this cannot be certified amended design rates and MUSIC modelling based on half the tested rate will be required and the drainage plans amended.
25. The filter media in the bioretention area is not to be installed or plants installed until all the upstream building works, parking areas and driveways have been 90% completed.
26. Prior to planting, the top 100 mm of the bioretention filter medium is to be ameliorated with appropriate organic matter, fertiliser and trace elements to aid plant establishment as per the table below.

Table: Recipe for ameliorating the top 100 mm of bioretention filter media.

Constituent	Quantity (kg/100 m2 of filter area)
Granulated poultry manure fines	50
Superphosphate	2
Magnesium sulphate	3
Potassium sulphate	2
Trace Element Mix	1
Fertilizer NPK (16.4.14)	4
Lime	20

Prior to issue of an Occupation Certificate

27. A Positive Covenant is to be provided over the Stormwater Quality Improvement Devices including the wetland, bioretention basin and gross pollutant traps in accordance with the requirements with Council's Engineering Guide for Development (as amended). The Positive Covenant must be registered with Land & Property Information.
28. An accredited plumber or experienced hydraulic engineer is to certify that all the non-potable water uses are being supplied by rainwater and that all the requirements of the detailed Rainwater Supply, Pipe and Fixture Plan have been installed and are working correctly.
29. The Hydraulic Engineer is to certify that all the requirements of the approved drainage plan have been undertaken including all pipe and pit sizes, that the wetland and bioretention systems have been correctly constructed and the CDS gross pollutant traps have been installed as per the manufacturer's recommendations and that all the signage and warning notices have been installed for the site.
30. A Geotechnical Engineer is to undertake insitu Saturated Hydraulic Conductivity Testing of each of the bioretention systems in accordance with Practise Note 1 of the FAWB guidelines. Where the hydraulic conductivity of the soil differs from the rate specified in MUSIC (tolerance -20% to +200%), remediation works will be required over the whole filter area to restore the conductivity and the test repeated until the hydraulic conductivity is achieved. A Geotechnical Engineer is to then certify that in accordance with Practise Note 1 of the FAWB guidelines, the Saturated Hydraulic Conductivity is within tolerance to the rate specified in MUSIC for each of the bioretention systems.
31. Written evidence is to be provided that the owner/developer has entered into and prepaid a minimum 1 year maintenance contract with a reputable and experienced cleaning contractor for the maintenance of the bioretention basin, wetland and gross pollutant traps.
32. A drainage easement in favour of Council is to be provided over the tributary of Ropes Creek to the extent of the 1 in 100 year flow extents as per the Engineering Guide for Development. The easement must be registered with Land & Property Information.
33. A drainage easement is to be provided over each lot with an interallotment drainage line. The easement is to be in favour of all upstream properties draining through it. The easement must be registered with Land & Property Information.
34. A drainage easement in favour of Council is to be provided over the detention basin, all pipelines collecting discharge from any future public roads and from the channel through lots 4 and 5 draining a number of upstream lots from Grevillea Street as per the Engineering Guide for Development. The easement must be registered with Land & Property Information.
35. A covenant is to be provided over the channel through lots 4 and 5 draining a number of upstream lots including Grevillea Street, the drainage line from pit 4/1 to pit 8/1 and the drainage line from the basin near pit 1/1 to pit 11/2 stating that Council is not responsible for any ongoing maintenance of the channels or pipelines. The Covenant must be registered with Land & Property Information.

36. A Positive Covenant for the Vegetation Management Plan is to be provided over the riparian area to ensure full restoration and ongoing maintenance of this area. The covenant must be registered with Land & Property Information.
37. A covenant for Overland Flowpath in favour of Council is to be provided over the tributary of Ropes Creek to the extent of the 1 in 100 year flow extents as per the Engineering Guide for Development. The covenant must be registered with Land & Property Information.
38. A Positive Covenant is to be provided over the Detention Basin accordance with the requirements of Council's Engineering Guide for Development 2005 (and as amended). The Positive Covenant must be registered with Land & Property Information.

Should you require any further information regarding this matter, please contact the undersigned on 9839 6000.

Yours faithfully, ,



ALAN MIDDLEMISS
ACTING MANAGER DEVELOPMENT SERVICES & ADMINISTRATION