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Our ref: 10ERM2015/0983
Your ref: DA/709/2015

Via email: council@parracity.nsw.gov.au
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Diep Hang
Development Assessment Officer
City of Parramatta Council
PO Box 32
Parramatta NSW 2124

12 October 2016

Dear Diep,

Re: Integrated Development referral under s.91A of the *Environmental Planning and Assessment Act 1979* for 2-6 Cowper Street & 5 East Street Granville

Reference is made to your request for a response in relation to the proposed development described as 2-6 Cowper Street and 5 East Street Granville and also identified as DA/709/2015.

Please be advised that, in addition to requiring development consent, parts of the development that intercept or extract groundwater are also required to be authorised under water management legislation. The information requirements for such an authorisation are explicitly detailed in the *NSW Aquifer Interference Policy*—including the need for the applicant to provide a thorough hydrogeological assessment of the predicted impacts of the proposed development and calculations of the volumes likely to be extracted. As defined in that policy, such requirements apply to activities interfering with *all aquifers*, including low yielding and saline groundwater systems.

The proposed development is deemed to be an aquifer interference activity requiring an authorisation under water management legislation therefore General Terms of Approval have been provided.

Please also be advised that the recipient and postal address details indicated on your correspondence require updating. It is strongly recommended that you update those details for all future referral letters to ensure that such correspondence can be delivered appropriately and that unnecessary delays will be avoided.

Please direct all related correspondence to the following address:

Water Regulation – Coastal (Parramatta)

Water NSW

LOCKED Bag 5123

PARRAMATTA NSW 2124

Yours Sincerely

Wayne Conners

Wayne Conners

Senior Water Regulation Officer

Coastal (Parramatta)

WaterNSW

Important: As a result of NSW water reforms, many functions previously provided by DPI Water have transferred to WaterNSW, effective 1 July. These functions include customer interactions for licencing, compliance and billing – as well as all in-field services and metering operations. Customers will experience streamlined, more convenient and efficient services. Over the coming months, you will begin to see WaterNSW branded materials for these services.

General Terms of Approval

General

1. An authorisation shall be obtained for the take of groundwater as part of the activity. Groundwater shall not be pumped or extracted for any purpose other than temporary construction dewatering at the site identified in the development application. The authorisation shall be subject to a currency period of 12 months from the date of issue and will be limited to the volume of groundwater take identified.
2. The design and construction of the building must prevent any take of groundwater after the authorisation has lapsed by making any below-ground levels that may be impacted by any water table fully watertight for the anticipated life of the building. Waterproofing of below-ground levels must be sufficiently extensive to incorporate adequate provision for unforeseen high water table elevations to prevent potential future inundation.
3. Sufficient permanent drainage shall be provided beneath and around the outside of the watertight structure to ensure that natural groundwater flow is not impeded and:
 - (a) any groundwater mounding at the edge of the structure shall be at a level not greater than 10 % above the level to which the water table might naturally rise in the location immediately prior to the construction of the structure; and
 - (b) any elevated water table is more than 1.0 m below the natural ground surface existent at the location immediately prior to the construction of the structure; and
 - (c) where the habitable part of the structure (not being footings or foundations) is founded in bedrock or impermeable natural soil then the requirement to maintain groundwater flows beneath the structure is not applicable.
4. Construction methods and material used in and for construction shall be designed to account for the likely range of salinity and pollutants which may be dissolved in groundwater, and shall not themselves cause pollution of the groundwater.
5. Documentation (referred to as a 'report') comprising measurements, maps, bore logs, calculations, results, discussion and justification for various matters related to the dewatering process must be provided. Information will be required at several stages: prior to construction commencing (initial report - which will accompany the application for the authorisation), at any time when an authorisation renewal is required or a significant change in activities occurs (intermediate report); and at the completion of dewatering and related operations (completion report). Reports need to be submitted in a format consistent with electronic retrieval without editing restrictions; raw data should be presented in Excel spreadsheets without editing restrictions.

Prior to excavation

6. The following shall be included in the initial report:
 - (a) measurements of groundwater levels beneath the site from a minimum of three relevant monitoring bores, together with details of the bores used in the assessment including bore logs and three-dimensional identification information.
 - (b) a map of the site and its immediate environs depicting the water table (baseline conditions) shown relative to the topography and approved construction footprint from the surface level and below. An assessment of the potential variation in the water table

during the life of the proposed building together with a discussion of the methodology and information on which this assessment is based.

- (c) details of the present and potential groundwater flow paths and hydraulic gradients in and around the site; the latter in response to the final volumetric emplacement of the construction.
 - (d) a schedule for the ongoing water level monitoring and description of the methodology to be used, from the date of consent until at least two months after the cessation of pumping. [Note that groundwater level measurements should be undertaken on a continuous basis using automatic loggers in monitoring bores.]
7. The Applicant shall assess the likely impacts of the dewatering activities on other groundwater users or structures or public infrastructure; this assessment will include an appropriate bore, spring or groundwater seep census and considerations relevant to potential subsidence or excessive settlement induced in nearby buildings and property, and be documented together with all calculations and information to support the basis of these in the initial report.
 8. Groundwater quality testing of samples taken from outside the footprint of the proposed construction, with the intent of ensuring that as far as possible the natural and contaminant hydrochemistry of the potential dewatered groundwater is understood, shall be conducted on a suitable number of samples and tested by a NATA-certified laboratory. Details of the sampling locations and the protocol used, together with the test results accompanied by laboratory test certificates shall be included in the initial report. An assessment of results must be done by suitably qualified persons with the intent of identifying the presence of any contaminants and comparison of the data against accepted water quality objectives or criteria for the intended dewatering purpose. In the event of adverse quality findings, the Applicant must develop a plan to mitigate the impacts of the hydrochemistry on the dewatered groundwater and present the details of all assessments and plans in the initial report.
 9. Groundwater quality testing generally in accordance with Clause 8, shall be undertaken on any anniversary or other renewal or alteration of any dewatering authorisation.
 10. A reasonable estimate of the total volume of groundwater to be extracted shall be calculated and included in the initial report; together with details and calculation methods for the parameters and supporting information to confirm their development or measurement (e.g. permeability determined by slug-testing, pump-testing or other means).
 11. A copy of a valid consent for the development shall be provided in the initial report.
 12. The method of disposal of pumped water shall be nominated (i.e. reinjection, drainage to the stormwater system or discharge to sewer) and a copy of the written permission from the relevant controlling authority shall be provided in the initial report. The disposal of any contaminated pumped groundwater (sometimes called “tailwater”) must comply with the provisions of the *Protection of the Environment Operations Act 1997* and any requirements of the relevant controlling authority.
 13. Contaminated groundwater (i.e. above appropriate NEPM 2013 thresholds) shall not be reinjected into any aquifer. The reinjection system design and treatment methods to remove contaminants shall be nominated and included in the initial report and any subsequent intermediate report as necessary. The quality of any pumped water that is to be reinjected must be demonstrated to be compatible with, or improve, the intrinsic or ambient groundwater in the vicinity of the reinjection site.

During excavation

14. Engineering measures designed to transfer groundwater around and beneath the basement shall be incorporated into the basement construction to prevent the completed infrastructure from restricting pre-existing groundwater flows.
15. Piping, piling or other structures used in the management of pumped groundwater shall not create a flooding hazard or induce mounding of groundwater. Control of pumped groundwater is to be maintained at all times during dewatering to prevent unregulated off-site discharge.
16. Measurement and monitoring arrangements to the satisfaction of the approval body are to be implemented. Weekly records of the volumes of all groundwater pumped and the quality of any water discharged are to be kept and a completion report provided after dewatering has ceased. Records of groundwater levels are to be kept and a summary showing daily or weekly levels in all monitoring bores provided in the completion report.
17. Pumped groundwater shall not be allowed to discharge off-site (e.g. adjoining roads, stormwater system, sewerage system, etc.) without the controlling authority's approval and/or owner's consent/s. The pH of discharge water shall be managed to be between 6.5 and 8.5. The requirements of any other approval for the discharge of pumped groundwater shall be complied with.
18. Dewatering shall be undertaken in accordance with groundwater-related management plans applicable to the excavation site. The requirements of any management plan (such as acid sulfate soils management plan or remediation action plan) shall not be compromised by the dewatering activity.
19. The location and construction of groundwater extraction works that are decommissioned are to be recorded in the completion report. The method of decommissioning is to be identified in the documentation.
20. Access to groundwater management works used in the activity is to be provided to permit inspection when required by the approval body under appropriate safety procedures.

Following excavation

21. Following cessation of the dewatering operations, the applicant shall submit the completion report which shall include:
 - (a) detail of the volume of water taken, the precise periods and location of water taken, the details of water level monitoring in all of the relevant bores; and
 - (b) a water table map depicting the aquifer's settled groundwater condition and a comparison to the baseline conditions; and
 - (c) a detailed interpreted hydrogeological report identifying all actual resource and third party impacts, including an assessment of altered groundwater flows and an assessment of any subsidence or excessive settlement induced in nearby buildings and property and infrastructure.
22. The completion report is to be assessed by the approval body prior to any certifying agency's approval for occupation or use of the completed construction.