

ATTACHMENT “C”

ENVIRONMENTAL SCIENCE COMMENTS

SUTHERLAND SHIRE COUNCIL

TO:	Carolyn King - Development Assessment Officer
FROM:	Daniel Robson - Environmental Scientist
DATE:	27 January 2011
FILE REF:	DN10/0007
SUBJECT:	Development Application No. DN10/0007 Description: Concept Plan for Mixed Use Residential and Commercial Development at 566-594 Princes Highway, Kirrawee Brick Pit, Kirrawee Property: 566-594 Princes Highway KIRRAWEE NSW 2232

Scope of Report

With reference to the proposed development at the above address, I have undertaken an environmental assessment of development application No.DN10/0007. In particular noting the following:

Information type	Drawings/Report	Prepared by
Report	Response to Drainage and Stormwater Management Matters	Northrop
Report	Groundwater Assessment	CMJA
Report	Dewatering Plan	CMJA
Report	Long Term Groundwater Management Plan	CMJA
Report	Site Contamination Management Plan	EIS
Report	Flora and Fauna Assessment	Cumberland Ecology
Report	Biodiversity Management Plan	Cumberland Ecology
Report	Experts Joint Statement: Ecology	Ian Drinnan & David Robertson (Cumberland Ecology)
Report	Experts Joint Statement: Contamination	Ian Drinnan & Adrian Kingswell (EIS)
Court Judgement	Restifa Pty Ltd v Sutherland Shire Council & ors (2009)	NSWLEC 1267
Architectural	Site Plans Project No. 09211902 Dwg. No. 0001-0604	Woodhead

Summary

The previous development application for the subject site raised a number of environmental issues which in turn formed important components of the subsequent NSW Land & Environment Court (NSW LEC) judgement. The main concerns surrounded the presence of remnant endangered Sydney Turpentine Ironbark Forest (STIF) located across the western and southern portions of the site, impacts upon two threatened species, the Grey-headed Flying Fox (*Pteropus poliocephalus*) and the Eastern Bentwing bat (*Miniopterus schreibersii oceanensis*), which are both known to utilise the existing pond as a water source, and impacts associated with potential contamination resulting from the previous use of the site. The aforementioned issues formed an integral component of the previous court case and therefore are ones which are once again pertinent to the application at hand.

Whilst a number of the aforementioned environmental issues have been discussed throughout the current suite of documentation, a number of uncertainties still surround the ability of the proposed development to accommodate

these essential components without having a significant detrimental impact. Each environmental issue of concern is outlined in the following sections of this report.

Ecological Impacts

Endangered Ecological Community

The subject site contains areas of remnant and regrowth vegetation which conforms to the Sydney Turpentine Ironbark Forest (STIF). STIF is listed as an Endangered Ecological Community (EEC) under Schedule 1 of the NSW Threatened Species Conservation Act 1995 (NSW TSC Act 1995) and has suffered serious declines in the extent of its distribution as a result of clearing for agriculture and urban development. It is now found as heavily fragmented pockets across Sydney, with only 0.5% of its original extent remaining intact (NSW DECCW). The STIF located on the subject site is the largest remnant found within the locality and given the recent clearing of STIF as part of the Cronulla rail duplication project, takes on increased importance as a viable local remnant of an endangered ecological community.

The proposal at hand proposes the removal of a portion of this community whilst retaining another section located in the south western corner of the site. In order to offset the loss of the STIF from the subject site, it is proposed to revegetate nearby Council reserves at a compensatory rate of 2:1. This reflects the agreement reached during the previous court case and would therefore result in a suitable outcome as part of the current proposal. It is important to note that this agreement is heavily dependant upon Council taking ownership of the proposed park. Should Council opt to decline the park, the required compensatory planting would need to be undertaken within the confines of the subject site. The recent Council endorsement of a rezoning application for the Public Open Space land increases the uncertainty surrounding the ability to adequately offset the loss of STIF as part of the proposed development. The subject site represents limited ability to accommodate the required compensatory planting and therefore it is unlikely that the 2:1 offset, as agreed in the previous LEC case, can be achieved.

Of particular concern regarding the retention of STIF is the proposed car park located within the proposed open space area in the south western portion of the site. A review of the plans indicates that excavation for the proposed commuter carpark will necessitate the removal of some portions of STIF to be retained and will encroach within extremely close proximity to other areas of STIF marked for retention. This would have obvious detrimental impacts upon the area of vegetation to be retained, involving direct removal in some areas, and therefore the amount and area of EEC to be removed and or impacted would be much greater than that documented.

As part of the previous court case, an agreement was reached that the effects of the development at that time were not considered to be significant, under the proviso that the areas to be retained were appropriately protected during construction and that the compensatory planting were to occur as agreed. It is of high importance that the area of STIF to be retained is protected from any adverse impacts associated with the development, especially given the areas of STIF to be removed. At present the proposal will involve detrimental impacts upon the area of endangered vegetation to be retained and relies heavily upon compensatory offset planting. As a result of the recent rezoning endorsement and the reluctance of Council to accept the park as proposed, a high degree of uncertainty surrounds the ability to provide the required offset compensatory planting. Given this uncertainty surrounding the endangered ecological community, the proposal cannot be supported.

Threatened Fauna

The current brick pit water pond provides a suitable drinking water source for both the Eastern Bentwing Bat (*Miniopterus schreibersii oceanensis*) and the Grey Headed Flying Fox (*Pteropus poliocephalus*), both of which are listed as threatened species under the NSW TSC Act 1995. The provision of a suitable drinking water source on the site in perpetuity is not only of immense importance for the identified threatened faunal species, but will also provide suitable habitat for a number of other species known to inhabit urban ponds. The construction of the pond in close proximity to the area of STIF to be retained will create suitable habitat for a large number of bird, mammal

and amphibian species known to inhabit urban areas and therefore will not only benefit the threatened bat species, but also a number of other faunal species.

With respect to the provision and availability of suitable drinking water in the compensatory habitat pond, it was determined, by way of expert agreement during the previous LEC case, that the constructed water body would need to be designed to incorporate a 40m "landing area" to enable the bats to swoop, drink and then continue to move in search of food on their nocturnal migration movements. The compensatory water body must be designed to maintain a surface area of 800sqm in order to provide a suitable habitat for the bats to utilise. At present it is unclear whether the constructed boardwalk will alter the dimensions of the water body, and therefore impact upon its potential to provide a useable and ecologically beneficial water source. It is of utmost importance that the constructed pond be designed and built to the dimensions required and agreed to by the experts if it is to maintain a suitable habitat component for threatened species. At present, it is unclear whether this is the case and therefore it cannot be supported.

A second major issue regarding the threatened bat species directly relates to the provision of sufficient water quantity to maintain the required water body surface area (800 sqm), and the provision of water at an appropriate quality which is suitable for the threatened bat species to utilise as drinking water. The water quality standard agreed upon by expert agreement in the previous LEC case was the *ANZECC Water Quality Guidelines for Freshwater Lakes and Reservoirs*. During the case an alternative water quality standard, based upon observations of bats drinking from other water bodies, was put forward however a number of uncertainties surrounded this standard. Based on the uncertainties and lack of concrete evidence to support a lower standard than the ANZECC guideline, the court decided that there were too many uncertainties surrounding an agreed standard and therefore the proposal was refused as it could not be determined that suitable water quality would be provided for the threatened faunal species.

The current design at hand for the compensatory water source does not propose the *ANZECC Water Quality Guidelines for Freshwater Lakes and Reservoirs* as the target water quality standard and instead proposes the water quality results obtained from a wetland located at Engadine where Grey-Headed Flying Foxes have been observed to drink. In this regard, the applicant's stormwater consultant acknowledges that the levels in that particular system do not meet the aforementioned ANZECC standards but instead meet the *ANZECC Water Quality Guidelines for Domestic Livestock*. This was then argued to represent a more suitable standard for utilisation by fauna and a more appropriate standard to adopt as part of the current proposal.

A major concern with this reasoning is that the data used to justify the lower standard of water quality utilised by the bats is based upon the inflow water quality data for the Engadine system. As part of the previous LEC case, water quality data was provided by Sutherland Shire Council for both untreated inflows and fully treated outflow water sampled from the wetland discharge point. In the current submission, the applicant has used the untreated inflow water quality data as their justification that the proposed design can supply suitable quality water for utilisation by the bats. It should be stressed that this data is the untreated inflow data and therefore is not an adequate representation of the water quality found within the pond post treatment, of which would represent a much more accurate indication of the water quality required for bats to utilise as drinking water. In this regard, it would be more appropriate to use the outflow water quality data which would provide for the improvement of water quality within the wetland system and would represent a more accurate indication of suitable water quality for the Grey-Headed Flying Fox. This has not been reflected in the proposed design.

A second concern to note is that in adopting the water quality standards of the Engadine system, a number of incorrect assumptions have been made on the quality of the water and the level of treatment contained within this wetland system. The first is that the pond that the bats have been observed drinking from is 800sqm, the same as that proposed at the subject site, however the system contains a large area of fringing macrophytes to the sum of 3,200 sqm. These play a crucial role in the maintenance of water quality in the wetland and whilst it is

acknowledged that the water the bats drink from may not receive treatment from the entire macrophyte bed, the water body does receive a good level of treatment as a result of their presence. The proposal on the subject site includes "an area of approximately 600 m²" of macrophytes which has been determined suitable to provide appropriate water quality to the compensatory pond. It is evident that this has been based upon the wrong water quality standard required for the bats and therefore may under represent the amount of macrophytes required to reach a quality which is actually suitable.

As demonstrated above, there are still significant uncertainties surrounding an appropriate water quality standard for the compensatory water body to provide suitable drinking water for the threatened bat species. Whilst a lower standard of water quality could be accepted, in the absence of adequate data supporting proposed lower levels, a more conservative approach must be adopted. Until it can be clearly demonstrated with appropriate data that the water quality proposed is suitable for bats to drink from, the *ANZECC Water Quality Guidelines for Freshwater Lakes and Reservoirs*, agreed to by the experts in the LEC, must be adopted as the appropriate water quality standard for the proposed habitat pond. To ensure that there is no significant impact upon the two threatened faunal species utilising the current brick pit water body, it must be clearly demonstrated that an appropriate quality of water can be provided in perpetuity. At present, too many uncertainties surround a suitable level of quality and therefore the proposed standards cannot be supported. This is consistent with the previous LEC judgement.

Groundwater

In order to facilitate the development of the subject site, the existing brick pit pond will require dewatering. This pond contains a large volume of water which will require dewatering of an extended period of time to ensure that the impacts associated with such works do not have a detrimental environmental impact away from the subject site.

The groundwater assessment and dewatering plan provided with the current proposal provides an adequate assessment and management regime for the dewatering of the subject site. Under the proviso that the proposed methodology is considered suitable by Council's Stormwater Manager, and the recommendations outlined in the Dewatering Plan (CMJA, 2010) and the Long term Groundwater Management Plans (CMJA, 2010) are adhered to, the dewatering of the existing pond is unlikely to have any significant environmental impact.

Contamination

The subject site has the potential to contain residual contamination given the previous use of the site as a brick manufacturing business. An agreement was reached between the respective experts during the previous court case which has largely been reflected in the current suite of documentation submitted with the application at hand. Under the provision that the recommendations outlined in the Site Contamination Management Plan (EIS, 2010) are adopted, the issue can be effectively managed.

Landscape Design

The proposal includes the construction of a park in the south western portion of the site. This park will contain the required compensatory habitat pond, in addition to the area of STIF marked for retention. As outlined in previous sections of this report, the provision of an 800 sqm water body forms an integral component of the proposed development. Given its importance in providing a suitable compensatory water source for threatened faunal species, it is of immense importance that any design does not impinge upon the functionality of the constructed wetland pond whose primary function must be to act as a suitable water source for the threatened bats and any other species likely to utilise the park area.

The plans indicate the construction of an elevated boardwalk around the periphery of the pond. It is important that this boardwalk does not reduce the available surface area of the pond. It has been deemed by expert agreement in the previous LEC case that a surface area of 800 sqm, comprising a minimum runway length of 40m, is required for the pond in order to make it suitable for use by the identified threatened bat species. If the pond is to provide

suitable foraging habitat for these species, then it must be demonstrated that the boardwalk or any other feature will not alter the required pond dimensions.

Conclusion

The environmental issues associated with development of the subject site are ones which formed integral components of the previous LEC case and subsequent judgement. These issues were discussed at length throughout the case and agreements on a number of the issues were reached between the respective experts. The environmental issues raised in this report are also ones which represented a significant reason for the previous refusal by the LEC. The major point of contention which remained unresolved following the court judgement revolved around an agreed water quality standard for the compensatory water body to be considered suitable as a drinking resource for the identified threatened faunal species. The proposal at hand has once again failed to ensure the provision of an appropriate quality of water in the compensatory water body and therefore some uncertainty regarding the ability to provide a suitable drinking water resource for the Grey-Headed Flying Fox and Eastern Bentwing Bat still remains. As such, the impacts upon these threatened species remain uncertain and once again warrant refusal of the application.

The retention of the endangered Sydney Turpentine Ironbark Forest is also not in accordance with the agreements formed throughout the LEC case and therefore does not represent an option which was considered suitable in the LEC judgement. In addition, the uncertainty surrounding the future park and the location of the required compensatory planting further increases the potential for increased impacts upon the remnant endangered ecological community located on the subject site.

Overall, the proposal at hand has failed to incorporate the agreements reached as part of the previous LEC case and satisfactorily address the outstanding issues identified by the court, and therefore represents an unacceptable development for the subject site. As such, the application cannot be supported.



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