

Lane Cove Council, 48 Longueville Road, Lane Cove NSW 2066.

12 October 2011

## ATTENTION:

#### MS MAY LI, SENIOR DEVELOPMENT ASSESSMENT OFFICER MR MICHAEL MASON, EXECUTIVE MANAGER OF ENVIRONMENTAL SERVICES

Dear Ms Li and Mr Mason,

Re:	Peer Review of Ecological Issues Relating to Proposed Multi-unit Development, 76-82
	Gordon Crescent, North Lane Cove (Development Application 11/79).
	Applicant: Hyecorp Property Group
	Applicant's Ecological Consultants: Keystone Ecological
	Applicant's Arborist: Treescan

Thank you for inviting me to professionally review the ecological advice that has been presented by Keystone Ecological and Lane Cove Council's environmental officers in relation to the proposed demolition of existing buildings and the construction and subsequent occupancy of up to 48 apartments, at 76-82 Gordon Crescent, North Lane Cove (the "subject site").

The current letter outlines the method by which the peer review was conducted, presents the results of the review and recommends potential future action by Lane Cove Council in relation to the Development Application.

## **QUALIFICATIONS AND EXPERIENCE**

The qualifications and experience that I have drawn upon in conducting the review are presented briefly below:

I have a Ph.D in zoology (University of Western Australia) and have over 27 years professional experience as an ecologist in south-eastern Australia. This includes employment as a senior ornithologist at the Royal Australasian Ornithologists Union, RAOU (now named Birds Australia) and five years as a university lecturer in zoology. I have worked as a full-time ecological consultant for the last 12 years, during which I have provided expert ecological advice in numerous NSW Land and Environment Court proceedings. I am the Immediate Past President of the Ecological Consultants Association of NSW Inc. (office held from May 2007 to September 2010) and remain a member of that organisation's board of executives.



Therefore, I am appropriately qualified and experienced to review and comment on the Applicant's and the Council's ecological assessment of the proposed development.

## DOCUMENTS REVIEWED

The following relevant documents were consulted as part of the review process:

## **Applicant's Documentation**

- Architectural drawings for Proposed Development at 76-82 Gordon Crescent, Lane Cove (dated 2 May 2011).
- METROPLAN (2011). Statement of Environmental Effects, 76-82 Gordon Crescent, Lane Cove. Report prepared by METROPLAN Town Planning Consultants for Hyecorp Property Group (dated May 2011).
- Ashby, E. (2011a). Flora and Fauna Impact Assessment: Lots 16-19 DP 27911, 76-82 Gordon Crescent, Lane Cove North, Lane Cove LGA. Report prepared by Keystone Ecological for Hyecorp Property Group (dated April 2011).
- Ashby, E. (2011b). Letter from Elizabeth Ashby, Keystone Ecological to Stephen Abolakian, Hyecorp Property, dated 7 October 2011 (including 7-part Test of Significance for Sydney Turpentine Ironbark Forest).
- Ford, D. (2011). Tree Report: 76-82 Gordon Crescent, Lane Cove. Report Prepared by Treescan Urban Forest Management Pty Ltd for Hyecorp Property Group (dated April 2011).
- Swain, G. (2011). Bushfire Protection Assessment for the Proposed Residential Flat Building on Lots 76-82 Gordon Crescent, Lane Cove North. Report prepared by Australian Bushfire Protection Planners Pty Ltd for Hyecorp Property Group (dated 22 March 2011).
- Bartel, M. (2011). Proposed Residential Development, 76-82 Gordon Crescent, Lane Cove: Geotechnical Assessment. Report prepared by Asset Geotechnical for Hyecorp Property Group (dated 19 April 2011).
- Demlakian, K. (2011). Structural Report of the Property at 76-82 Gordon Crescent, Lane Cove. Report prepared by Demlakian Engineers Pty Ltd for Hyecorp Property Group (dated 6 October 2011).
- Abolakian, S. (2011a). Response to Comments From Council's Consultants, 76-82 Gordon Crescent, Lane Cove. Letter from Stephen Abolakian, Hyecorp Property Group to May Li, Lane Cove Council, dated 6 September 2011.
- Abolakian, S. (2011b). Response to Open Space Officer Comments, 76-82 Gordon Crescent, Lane Cove. Letter from Stephen Abolakian, Hyecorp Property Group to May Li, Lane Cove Council, dated 22 September 2011.



## **Documents Provided by Lane Cove Council**

- Maish, P. (2011). Lane Cove Council's Tree Assessment Report: DA11/79, 76-82 Gordon Crescent. Memorandum from Mr Peter Maish (Senior Tree Assessment Officer) to May Li (Town Planner), dated 21 September 2011.
- Heatley, K. (2011). Lane Cove Council's Open Space Assessment Report: DA11/79, 76-82 Gordon Crescent. Memorandum from Ms Kerry Heatley (Open Space Officer) to May Li (Town Planner), dated 28 June 2011.
- □ Community letters of objection to the proposed development.
- Lane Cove Local Environmental Plan 2009 <u>http://www.legislation.nsw.gov.au/maintop/view/inforce/epi+49+2010+cd+0+N</u>
- McAllan, I. and Ondinea, D. (1995). Wildlife Habitat Corridor for Lane Cove Council (dated May 1995).
- Coe, S. (1995). Conservation of Wildlife Habitat Corridors in Lane Cove (dated January 1995).
- □ Harris, M. (2010). Native Vegetation of the Lane Cove Council Local Government Area. Report prepared by Storm Consulting Pty Ltd for Lane Cove Council (dated 16 September 2010).
- □ Lindsay, K. (2011). Letter from Kurtis Lindsay of Birds Australia to Lane Cove Council, commenting on the importance of Batten Reserve as habitat for birds (dated 23 September 2011).
- Lane Cove Wildlife Corridor Map (undated).
- □ Map of Vegetation Communities in Batten Reserve (dated 2009).
- □ Map of Vegetation Communities in Stringybark Reserve (dated 2009).
- SMCMA Vegetation Map for Lane Cove North (Draft 09), dated 27 September 2011).
- Location of Indigenous Trees 1: 5000 Map (Mowbray Road) (undated)
- □ Flora List for Lane Cove Local Government Area (Excel Spreadsheet)
- □ Fauna List for Lane Cove Local Government Area (Excel Spreadsheet).

## **Additional Information**

- □ NPWS (2002). *Native Vegetation Maps of the Cumberland Plain, Western Sydney*(National Parks and Wildlife Service, Hurstville).
- □ Tozer, M.G. (2003). Native vegetation of the Cumberland Plain, western Sydney: systematic classification and field identification of communities. *Cunninghamia* 8(1):1-75.
- Tozer, M.G., Turner, K., Keith, D.A., Tindall, D., Pennay, C., Simpson, C., MacKenzie, B., Beukers, P. and Cox, S. (2010). Native vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands *Cunninghamia* 11(3):359–406.



□ Final Determination of the NSW Scientific Committee for Sydney Turpentine Ironbark Forest: Endangered Ecological Community Listing under the schedules of the *Threatened Species Conservation Act*, 1995 (28 February 2011).

http://www.environment.nsw.gov.au/determinations/SydneyTurpentineIronbarkForestEndCo mListing.htm

□ Final Determination of the Commonwealth Scientific Committee for Sydney Turpentine Ironbark Forest: Critically Endangered Ecological Community Listing under the schedules of the *Environment Protection and Biodiversity Conservation Act, 1999* (20 June 2011). <u>http://www.environment.gov.au/biodiversity/threatened/communities/sydney-turpentineironbark.html</u>

I also met with Lane Cove Council officers, both at Lane Cove Council and on the subject site, on 7 October 2011 to discuss the proposed development. This enabled me to gain a first-hand appreciation of the ecological values of the subject site and the neighbouring bushland and the potential impacts of the proposed development on them.

Please note that the site inspection did not include detailed flora surveys of the site or neighbouring areas of Batten Reserve, but was rather meant as a "snapshot inspection" of the structure and general composition of the vegetation communities within these areas. I relied on the ecological reports produced by the Applicant and Lane Cove Council for more detailed descriptions of the communities.

## **VEGETATION COMMUNITY ON SUBJECT SITE**

The vegetation community on the subject site has been mapped by NPWS (2002) and Tozer (2003, Tozer *et al.* 2010) as Sydney Turpentine Ironbark Forest (STIF) (Figures 1 and 2) and by the Sydney Metropolitan CMA (2011) as Urban Exotic/Native (Figures 3 and 4). Although Heatley (2011) indicated that the vegetation on the subject site was mapped by Harris (2010) as STIF, I am less convinced because the scale of Harris' map is not detailed enough to make that judgment (Figure 5).

Areas of Batten Reserve immediately down-slope of the subject site have been mapped by Harris (2010) as an inter-grade between Coastal Enriched Sandstone Sheltered Forest and STIF with native planting/landscaping occurring to the east (Figure 6). The Sydney Metropolitan CMA (2011) identifies the vegetation community in this area of Batten Reserve as STIF, but the northern perimeter as Weeds and Exotics (Figures 3 and 4). NPWS (2002) and Tozer (2003, Tozer *et al.* 2010) also map areas of Batten Reserve that are immediately down-slope of the subject site as STIF.

The Final Determination of the NSW Scientific Committee for Sydney Turpentine Ironbark Forest states:

"The structure of the community was originally forest, but may now exist as woodland or as remnant trees." (Clause 3 of the Final Determination)



There is no remnant groundcover or shrub layer on the subject site. The two most abundant native canopy trees on the subject site, the Turpentine (*Syncarpia glomulifera*) and Sydney Red Gum (*Angophora costata*), are listed under this Final Determination as characteristic plant species of STIF. The other native canopy tree on the subject site, the Sydney Peppermint (*Eucalyptus piperita*), is not listed as a characteristic tree species of STIF under the Final Determination, and is not recognised by Tozer (2003) as usually or sometimes occurring in STIF.

Many of the native canopy trees on the subject site are similar in height and canopy spread, suggesting that they are in the same age cohort. This could mean that they are:

- (a) remnant canopy trees of similar age that have reached their maximum size within the physical constraints imposed by the subject site; or
- (b) landscape trees that were planted on the subject site across a short time period and have subsequently grown at similar rates.

Clause 8 of the Final Determination states:

"STIF typically occurs on areas with clay soils derived from Wianamatta Shale, or shale layers within Hawkesbury Sandstone."

I found no evidence that the client's consultants carried out a detailed analysis of the soils on the subject site. However, significant Hawkesbury sandstone boulders and cliff-lines occur on the subject site and Bartel (2011) indicated that "*residual soils comprising sandy clays and clayey sands could also be expected in some areas*". Therefore, it would appear that the geology and residual soil profile of the subject site provide suitable habitat for STIF. However, in examining photographs provided by the Applicant from around the base of native trees, and from observations I made during the site inspection, I am also of the opinion that the lower slopes in the southern half of the subject site also contain fill, which may overlay the residual soils.

In conclusion, it would appear that the native vegetation on the subject site contains some characteristics that enable it to be classified as STIF under the TSC Act. However, its precise classification is not definitive because there is no information about the structure and floristic composition of the of the groundcover, shrub and understorey layers that once occurred on the subject site.

It does not meet the definition for STIF in the Final Determination of the Commonwealth Scientific Committee under the EPBC Act because not all the vegetative layers are present, many of the diagnostic plant species are absent, and the size of the vegetation community on the site is less than one hectare in area.

Ashby (2011a) initially concluded that STIF was not present on the subject site, a viewpoint which she still held in providing additional written advice in Abolakian (2011a & b). However, Maish (2011) and



Heatley (2011), in reviewing the Development Application from within Lane Cove Council, appear certain that STIF occurs on the subject site.

Ashby (2011b) later adopted a cautionary approach by conducting a Seven-part Test of Significance under Part 5A of the *Environmental Planning and Assessment Act, 1979* (EP&A Act) for STIF in relation to the proposed development, in the event that an independent review of the data concluded that the native vegetation on the subject site is STIF.

In examining all the evidence, I have also adopted the cautionary approach and assume that STIF occurs on the subject site. Therefore, my attention now turns to the adequacy of the Seven-part Test provided by Ashby (2011b) and the arguments provided by Maish (2011) and Heatley (2011) for protecting the native trees on the subject site.

## IMPACTS OF THE PROPOSED DEVELOPMENT ON THE STATUS OF STIF

#### Overview

The proposed development would result in the removal of at least six Turpentines, five Sydney Red Gums and three Sydney Peppermints. Therefore, at least eleven STIF trees (the Turpentines and Sydney Red Gums) would be removed. An additional 10 exotic or non-STIF trees would also be removed. Ford (2011) claims that at least four of the native trees proposed for removal (Tree Nos. 7, 13, 15 & 18) are either in poor form, have been severely lopped or are close to existing houses and so should be removed.

Maish (2011) claims that one Sydney Red Gum (Tree No. 9), which the Applicant wishes to retain, will need to be removed because of its closed proximity to proposed apartment buildings. I do not have a professional opinion on this claim because I am not an arborist. However, my personal (non-professional opinion) is that this tree will probably need to be removed because it has very large, heavy limbs that would overhang the proposed apartment block. Although these limbs appear healthy now, Sydney Red Gums are well-known for limbs breaking off in storms, and it is possible that in the distant future one or more limbs on Tree No. 9 could become weakened, break off and cause damage to property.

I agree with the overall conclusion of the Seven-part Test provided by Ashby (2011b), that is, the proposed development would not have a significant impact on the status of STIF in NSW. My reasons for agreeing with this conclusion are:

□ The local occurrence of STIF is defined as areas of STIF where there is the potential for transfer of genetic material (pollen). Nectarivorous birds (e.g. Rainbow Lorikeet) and nectarivorous bats (e.g. Grey-headed Flying-fox) feed on nectar produced by flowers of STIF trees and act as vectors for pollen transfer. Ashby (2011b) correctly points out that Rainbow Lorikeets can travel up to 10 km/day while foraging and up to 35 km between night-time roosts and foraging areas by day. Similarly, Grey-headed Flying-foxes can travel up 80 km/night while foraging. Both the Rainbow Lorikeet and Grey-headed Flying-fox, as well as other nectarivorous (bird and insect) species, are



common in the Lane Cove area and are likely to feed on the nectar of STIF trees of the subject site. Therefore, one needs to take into account all the STIF that occurs within at least a 10 km radius of the subject site (minimum daily foraging range of a Rainbow Lorikeet). Using this logic, the number of STIF trees and the area of STIF habitat to be removed from the subject site is a negligible proportion of the total local occurrence of STIF.

- □ The removal of the STIF trees from the subject site will not fragment or isolate the local occurrence of STIF.
- No STIF plant species would disappear completely from the locality as a result of the proposed development. There will also be no substantial adverse change in the vegetative structure of the STIF community in the locality.
- □ No listed critical habitat of STIF would be removed.
- □ The proposed development is largely consistent with the proposed actions for the recovery of STIF because weeds will be removed from the subject site and there will be compensatory planting.

One criticism I have of the Seven-part Test is that it considers compensatory measures (e.g. replacement plantings) when assessing the impacts of the proposed development on the status of STIF. The Guidelines issued by the Department of Planning for conducting Seven-part Tests state explicitly that compensatory measures must not be taken into account when assessing the impacts of a proposed development or activity on threatened ecological communities, species or populations. Nevertheless, I am of the opinion that, even without consideration of these measures, the Seven-part Test conducted by Ashby (2011b) demonstrates adequately that the proposed development would not significantly impact on the status of STIF, at a local, bioregional or State level because of the small and relatively degraded area of STIF that would be removed from the subject site.

#### Recommendation

If the proposed development is approved, then the Applicant must provide a suitable biodiversity offset as a condition of consent. I am of the opinion that at least four STIF trees should be planted in the locality for every one native tree that is removed from the subject site. This is consistent with biodiversity offsets that I have been involved with in relation to development applications in residential zones of the Hornsby, Ryde and Ku-ring-gai Local Government Areas in recent times.

There is insufficient space on the subject site for this biodiversity offset. Therefore, it is recommended that sufficient funds be provided to Lane Cove Council to plant and maintain these trees in a nearby Council bushland reserve. The Applicant should be required to pay for the environmental management and the monitoring of the status of the planted trees (including the cost of replacing planted trees that have died and maintenance of planted areas as weed-free zones) for at least five years.



## THREATENED SPECIES

#### Flora

There are no threatened flora species or populations on the subject site. Therefore, the proposed development would not impact on these biota.

#### **Powerful Owl**

Lindsay (2011) states that a pair of Powerful Owls roosts in Batten Reserve. Home ranges of Powerful Owls are between 300 and 1500 ha in area and it is likely that the resident pair in Batten Reserve would forage for possums and flying-foxes on the subject site. However, the subject site is only a small proportion of the total likely foraging area of these owls and its development is unlikely to significantly limit foraging resources for them or their offspring. Ashby (2011a) quite rightly concludes that there are no hollows on the subject site that could potentially be used for nesting by Powerful Owls. Therefore, I agree with Ashby's (2011a) conclusion that the proposed development is unlikely to significantly impact on the status of the Powerful Owl.

Individual Powerful Owls have a number of preferred roosting sites within their territory and usually roost by day close to where they were hunting on the previous night. Powerful Owls selectively hunt in parts of their territory for varying periods of time and, when localised prey sources are diminished in these areas, they selectively hunt in other parts of their territory. Therefore, individual Powerful Owls rotate temporally between preferred roost sites.

Powerful Owls usually roost in dense sub-canopy riparian vegetation located low down on sloping creek or river banks. Therefore, it is possible that local Powerful Owls periodically use parts of Batten Reserve immediately down-slope of the subject site to roost by day. Consequently, if the Development Application is approved, then there is a risk that demolition and/or construction activities on the subject site could disturb day-time roosting behaviour of owls that are roosting down-slope of the subject site.

Therefore, I recommend that a suitably qualified and experienced ecologist monitor areas of Batten Reserve adjacent to the subject site for the presence of roosting Powerful Owls prior to, and at regular intervals throughout, the demolition and construction periods associated with the proposed development. If one or more Powerful Owls are observed roosting in these areas at these times, then demolition and/or construction activity must cease and the Lane Cove Council and OEH must be contacted for advice on how best to minimise or avoid disturbance to the roosting owls from that point onwards.



## **Grey-headed Flying-fox**

I also agree with Ashby's (2011a) conclusion and the subsequent advice that she provided in Abolakian (2011a & b) that the proposed development would not impact on the status of the Greyheaded Flying-fox. The reasons for agreeing with this conclusion are:

- □ There are no maternity or other significant nocturnal roosting colonies of Grey-headed Flying-foxes on the subject site or in <u>immediate</u> down-slope areas of Batten Reserve.
- □ As mentioned previously, Grey-headed Flying-foxes are known to travel up to 80 km in a single night while foraging and the proportion of potential foraging habitat for this species that is proposed for removal from the subject site is negligible.
- □ The Grey-headed Flying-fox is a highly mobile species, often flying high above tree canopies and over buildings. Therefore, it is most unlikely that the removal of trees from the subject site would significantly hinder the movements or dispersal of Grey-headed Flying-foxes through the locality.
- □ No critical habitat of the Grey-headed Flying-fox would be removed or modified by the proposed development.

## WILDLIFE CORRIDOR IMPACTS

Batten Reserve has been identified as a major wildlife corridor through Lane Cove (McAllan & Ondinea 1995; Coe 1995). The location of the subject site in relation to this vegetated corridor is shown in Figures 8 and 9. Heatley (2011) and several community objectors to the proposed development point out that the trees on the subject site are part of the wildlife corridor, and their removal would significantly narrow the corridor to the extent that it would impact on the dispersal of wildlife in the locality. Ashby (2011a & b) argues that the trees on the subject site are not part of the wildlife corridor and would only assist the movement of those species that are generally very mobile and are adapted to living in an urban environment.

I agree with Ashby (2011a & b) that the habitats in Batten Reserve are the most important features of the local wildlife corridor. I am of the same opinion that, although the trees on the subject site, do serve to widen the corridor, this part of the corridor would only be suitable for the movement and dispersal of highly mobile species such as parrots and cockatoos, corvids, artamids, honeyeaters, possums and flying-foxes. The proposed development would not impede the movement or dispersal of those species through the locality. Of particular note is my observation of Noisy Miners on the subject site at the time of the site inspection. This species chases other species from habitat areas when it is present in large groups. Therefore, it is my opinion that the presence of Noisy Miners on the subject site would further devalue the subject site as corridor habitat for local wildlife species.

More timid and less mobile species such as fairy-wrens, thornbills, scrubwrens, insectivorous bats and gliders are likely to move or disperse through Batten Reserve, rather than through the subject site. The proposed development would not impact on that part of the wildlife corridor provided that



adequate measures are put into place to prevent runoff of excess contaminants, sediment, waste and stormwater during the demolition, construction and residential occupancy of the proposed development.

## CONCLUSION

On a personal level, I consider that it is unfortunate that such a large multi-unit development has been proposed for the subject site. It is my personal opinion that it would not be aesthetically pleasing to have such a large, bulky development adjacent to a significant bushland corridor. However, I realise that this is a planning, rather than an ecological, matter and is beyond my area of expertise and scope for provision of advice.

Conversely, in assessing the ecological consequences of the proposed development, I am satisfied that the Applicant has demonstrated that the proposed development would have no significant adverse ecological impacts on the local environment, provided that the recommendations of Ashby (2011a & b) and additional recommendations that I have provided in this letter are implemented.

Yours sincerely,

Dr Stephen Ambrose Director AMBROSE ECOLOGICAL SERVICES PTY LTD



## Figure 1 MAPPED VEGETATION COMMUNITIES IN THE LOCALITY (NPWS 2002)

<u>Legend</u>

Subject site: area within red boundary. 15: Sydney Turpentine Ironbark Forest. 31: Sandstone Ridgetop Woodland. 33: Western Sandstone Gully Forest 43: Turpentine Ironbark Margin Forest. Hatched areas represent <10% native canopy cover. Solid areas represent >10% canopy cover. Grey areas: unmapped vegetation.





## Figure 2 MAPPED VEGETATION COMMUNITIES IN THE LOCALITY (TOZER ET AL. 2010)





## Figures 3 & 4 MAPPED VEGETATION COMMUNITIES IN THE LOCALITY (SYDNEY METROPOLITAN CMA, 2011)





# Figure 5 MAPPED OCCURRENCE OF STIF IN LOCALITY (HARRIS 2011)

#### STORM\_CONSULTING



# 4.6. Sydney Turpentine Ironbark Forest

Area within LGA (ha): 6.3 (the majority of which occurs as intergrades with other communities)

Red = this community Blue = intergrades involving this

community

Statewide vegetation class (Keith 2004): Northern Hinterland Wet Sclerophyll Forests, Cumberland Dry Sclerophyll Forests

**Biometric vegetation types:** 1. Turpentine - Grey Ironbark open forest on shale in the lower Blue Mountains, Sydney Basin; 2. Turpentine - Smooth-barked Apple moist shrubby forest of the lower Blue Mountains, Sydney Basin



## Figure 6 VEGETATION COMMUNITIES IN BATTEN RESERVE (HARRIS 2011)





# Figure 7 LOCATION OF WILDLIFE (VEGETATED) CORRIDORS IN RELATION TO SUBJECT SITE





Figure 8LOCATION OF WILDLIFE (VEGETATED) CORRIDORS IN RELATION TO SUBJECT SITE<br/>(MAGNIFIED AREA AROUND SUBJECT SITE)

