

31 May 2013

Our Ref: 11-176

Pam Allen (Chair)  
Southern Joint Regional Planning Panel  
23-33 Bridge Street  
Sydney NSW 2000

Attention: Dean Hosking (Planning Officer, Regional Panels Secretariat)

**By Email:** Dean.Hosking@planning.nsw.gov.au

Dear Sir,

**PROPOSED NBN SATELLITE EARTH STATION FACILITY  
APPLICATION REFERENCE DA/2012/360 - JRPP REFERENCE 2012STH021  
LOT 3 WANATTA LANE, WOLUMLA  
RESPONSE TO CONDITIONS IN ASSESSMENT REPORT TO JRPP**

City Plan Strategy & Development ("CPS&D") acts on behalf of our Client, the National Broadband Network Company and the Applicant of the above application, Woods Bagot Architects.

This letter has been prepared in response to the assessment report prepared on behalf of Council to the Southern JRPP in relation to 2012STH021, and due to be considered on 6 June 2013.

The purpose of this letter is to respectfully request amendments to be made to some of the conditions of consent that have been recommended by the assessing officer.

Each of these is set out below:-

Condition 4

Condition 4 states:-

*"4. All roofing and building material shall be non-reflective. Details of proposed materials shall be submitted for approval by Council with the application for the Construction Certificate."*

*Note: White surfaces are not considered to be satisfactory for this purpose."*

We request that this condition be amended as the antenna are required to be white. Justification for this is provided below.

The proposed antenna consist of a number of aluminium panels that are aligned onto a backing structure. The way the antenna will work is that the panels will receive a signal from an orbiting satellite before reflecting this signal into a sub reflector and then back into a feed which is located to the centre of the antenna.

These panels need to be optically aligned onto the backing structure as the shape of the antenna at the very high frequency of operation (28GHZ) is critical to points of a millimetre. Any alteration to the shape of the antenna will mean that the signal level and quality is compromised

The antennas will be pointed north towards the equator as the NBN satellites will be on an equatorial orbit 36,000km from earth and will therefore appear stationary to the antenna at this distance.

As the antennas face north, the sun's heat is on the reflector all day.

The panels are painted white to minimise the effects of heat for two reasons:

1. Colours absorb heat. This will cause the panels to move slightly and change their alignment which in turn will then change the antenna focus and efficiency as they will lose their predetermined alignment. The alignment is essential to focus the signal onto the sub reflector which then focuses the microwave signal into the feed. Any shift in their alignment will lower the quality of the signal.
2. The proposed antenna will receive microwave frequencies from the satellite. This signal will be attenuated over the 36000kms as it travels through space to the antenna. Heat creates noise (thermal noise). In order to provide the network with the required data rates for high speed broadband service requires the optimised signal to noise ratio to be maintained. Colours other than white cause increase temperature and therefore increase thermal noise which will impact on the signal to noise ratio, the quality of signal and therefore the resultant speed of the broadband service required. The manufacturer uses a special paint for the antennas with special thermal and other characteristics specifically required by satellite antennas of this nature for the reasons stated. The manufacturer delivers the antennas to site already pre-treated/painted.

It is noted that all of the other SES facilities Australia-wide have been approved by the respective consent authority with the same materials, finishes and white colour for the antenna. The white colour of the antenna is critical to the function of the facility.

Aside from the antenna, NBNCo are happy for the other buildings within the compound to be non-reflective.

#### Condition 20b & 20c

Conditions 20b and 20c state:-

*"20. Conditions to be satisfied prior to Construction Certificate The following matters shall be completed prior to the endorsement of a Construction Certificate for any part of this development:*

*b) Approval of detailed construction plans and specifications for the access road works by Council's Director of Engineering Services or his delegate.*

*These works shall be designed and specified in conformity to the standards set out in Council's Technical Specifications (or other documents formally adopted by Council for the purpose of specifying standards for construction works, DCP No .2) as current at the date of approval, and sound engineering practice.*

*These detailed construction plans must include all erosion and sediment control works necessary to ensure that the quality of stormwater discharged from these works, both during*

*and after the construction period, will not result in erosion, sedimentation or pollution of any land or water. These plans shall be in accordance with Council's Development Design Specification D7, Erosion Control and Stormwater Management.*

*c) All public works (such as road work, kerbing and guttering, footway construction, stormwater drainage, water supply and sewerage works and environmental controls) shall be designed by persons holding suitable qualifications for the design of works of this type and current professional indemnity insurance."*

The road works to the facility, and outside of the NBNCo compound/site area as shown on the plans submitted with application, will be undertaken by Bega Valley Shire Council. To this end, we request that the above conditions be amended to preclude reference to the road works outside of the NBNCo site.

Condition 28

Condition 28 states:-

*"28. Any roof storm water and surface water from driveways and car parking area to be disposed of to the satisfaction of the consent authority."*

Whilst we do not object to the principle of this condition, it does not include any details of what the consent authority's requirements are and therefore is open to interpretation. We therefore request that this condition be amended to specifically refer to Council's requirements and/or relevant standards that are to be complied with.

Should you wish to discuss any aspect of the contents of this letter, please do not hesitate to contact the undersigned on (02) 8270 3500.

Yours Faithfully,



**CHRIS OUTTERSIDES**  
**DIRECTOR**  
**CITY PLAN STRATEGY AND DEVELOPMENT PTY LIMITED.**