KU-RING-GAI COUNCIL SUBMISSION
October 2010

SYDNEY ADVENTIST HOSPITAL (SAN) WAHROONGA

Environmental Assessment
Staged Alterations and Additions

Application MP 10_0070

Table of Contents

Executive Summary

This submission provides comment from Ku-ring-gai Council to the Department of Planning on the *Environmental Assessment* (EA) for project MP 10_0070 *Staged alterations and additions to the Sydney Adventist Hospital* (described as the SAN for the purposes of this document).

Council strongly supports the expansion of the hospital facilities on the site. The Ku-ring-gai area, like much of Sydney, has an aging population, which will result in increased demand for such services. The SAN hospital however, draws from a much wider area than this LGA, and supports the health and recovery of people from the surrounding areas and much of the northern part of Sydney, extending to the Central Coast. There is a significant need for increased health services across this area, and the expansion of the SAN hospital is therefore an important component in the development of health services in Sydney.

In addition, as a large local employer, the expansion will support an increase in local employment and training opportunities, which will benefit the local community.

The capital value of the proposed works is estimated by the proponent to be $283.3 million. The proponent states that these works are expected to meet the needs for the short to medium term. The works involved will be part of the site, and the community for the long term and it is important that the best outcome for the site, and the community be achieved, taking into consideration: the setting of the hospital; the adjoining bushland and watercourse; climate change; the potential functional, social, recreational, employment and health connections to the surrounding community; the overall amenity of future users of the SAN site, and existing and future residents, students and businesses in the locality; and the economic and financial constraints and opportunities, including the ongoing financial costs to the hospital over the long term. As further intensification of the hospital facilities will be required in the long term, the site layout and design must also ensure that future expansion is not compromised - physically, or economically, by the satisfaction of shorter term needs.

The Director General's requirements (DGRs) set out the parameters for the EA, to guide the achievement of the above outcomes. This submission provides Council's comments on the potential to achieve the above desired outcomes, by considering the proposal in light of the DGRs. The submission is set out in the same structure as the DGRs.

While Council supports the expansion of the hospital facilities, it nevertheless has significant concerns that the proposal, as it stands, will fail to meet the requirements of the Director General and the above outcomes.

Council's key concerns relate to urban design and long term planning, and the relationship with the overall Wahroonga Estate concept masterplan.

Key issues include the following:

- The lack of key documentation such as the Biodiversity Management Plan and its components. This plan is required to be approved by DEWHA prior to the lodgement of an application for the site. Without this plan it is impossible to consider the consistency of the proposal with the approved measures in relation to weed and pest management, vegetation management, stormwater and fire management and management of public access to the E2 Environmental Conservation lands.
- The lack of plans clearly showing the relationship, spatially and in terms of staging, between the hospital masterplan and the approved Wahroonga Estate concept plan, the

lack of required detail on a number of plans, and inconsistencies between plans, make it difficult from a comprehensive professional planning point of view to comment. If this were a DA, Council would be seeking further information. This information should be submitted prior to minister making a determination.

- The proliferation of car parks and the concentration and massing of the built form, which result in the lack of adequate and useable outdoor areas and the poor amenity of the open space areas for patients, visitors and staff, including staff who live on site. The overall concept appears to be more appropriate in a densely urban environment and does not capitalise on its unique setting.
- The proposal has been designed, without incorporating the principles of ESD up front. This is evident in the fact that to achieve a 4 star Green Star Design rating the proposal relies very heavily on credits for on-going management, rather than design credits for the design of the structures within the landscape, almost half of which are 'to be confirmed'. Given the scale of the development, the likely life and cost of the structures, the number of patients and other people using the facility, the large ongoing financial running costs and the significant opportunities within such a site, this is unacceptable.
- The proposal is not an orderly and economic use of the land. The inclusion of extensive at grade, and above ground multi-level parking, rather than basement parking below the building footprints, limits, spatially and financially, the future long term potential for further sustainable hospital development.

Nevertheless the proposal also contains some positive elements. The arrival podium, the concourse and the loggia improve the visual and functional connection to and between the main hospital buildings. The internal layout generally improves the legibility of the hospital functions and its elements. The consideration of indoor air quality within the hospital buildings is also a positive element, for patients and staff. The re-use of the Bethel house within the site and the proposed interpretative strategy show a positive consideration for the heritage of the locality.

It is recommended that a Preferred Project Report be submitted addressing the concerns outlined in this submission. The amendment of the proposed expansion taking into account the concerns outlined in this submission, will not only support good planning outcomes, but the stated mission of the SAN - '*caring for the body, mind and spirit of our patients, colleagues, community and ourselves'.*

Comments against the Director General's Requirements

DGR 1: Relevant EPIs, Policies and Guidelines to be Addressed

Planning provisions applying to the site, including permissibility and the provisions of all plans and policies including:

- Objects of the EP&A Act;
- State Environmental Planning Policy (Major Development) 2005;
- State Environmental Planning Policy No.55 – Remediation of Land;
- State Environmental Planning Policy No.33 – Hazardous and Offensive Development;
- State Environmental Planning Policy (Infrastructure) 2007;
- State Environmental Planning Policy No.19 – Bushland in Urban Areas
- NSW State Plan;
- Sydney Metropolitan Strategy 'City of Cities';
- Draft North Subregion Draft Subregional Strategy;
- Ku-ring-gai Planning Scheme Ordinance
- Relevant Development Control Plans; and
- Nature and extent of any non-compliance with relevant environmental planning instruments, plans and guidelines and justification for any non-compliance.

Environmental Planning and Assessment Act 1979
The proposal is not consistent with the objects of the Act:

The orderly and economic use of the land:

- The hospital zone (SP1) is limited to a smaller area than the previous zoning and it is important that the existing hospital site be used to gain the best outcome for the hospital for the long term. The inclusion of extensive at grade, and other above ground parking is not the most orderly use of the land. The proposal claims to address short to medium term hospital needs only. In the long term, further hospital facilities will be required, and the proposed use of the land in this way would compromise, or make extremely expensive, more intensive use of the land. For instance, the Shannon car park should be relocated under the main Shannon wing, freeing up valuable area for more appropriate uses, such as landscaping and recreation areas, with potential in the long term for further redevelopment.

The protection of the environment, including the protection and conservation of native animals and plants, including threatened species, populations and ecological communities, and their habitats:

- A Biodiversity Management Plan was required as an approval condition for the concept plan for the Wahroonga Estate. The plan and its components are critical to any understanding of the future management of the conservation values of the site. It is not possible to assess whether the proposal is consistent with any approved Biodiversity Management Plan in its absence, and therefore to assess whether the proposal is consistent with the objects of the Act.

Ecologically sustainable development:

- The proposal is not ecologically sustainable development:
  - It fails to take into consideration the impacts of future climate change, by depending on management rather than design to meet minimal Green Star standards.
  - It fails to consider the long term ongoing financial costs of this short sighted approach.

- It fails to properly integrate external areas with the built form to support social and recreational outcomes, for the public generally, for patients and their families, or indeed for the staff who live in dormitory accommodation on the site.
- This issue is further discussed under DGR 7.

State Environmental Planning Policy (Major Development) 2005
SEPP (Major Development) 2005 provides the overall parameters for development on the Wahroonga Estate as a whole. The concept plan approval provides greater detail. The hospital plan sits within this overall development. However, while the plans do, to some extent, show the relationship between the hospital proposal and the existing development on the site, they totally fail to show the relationship between the future development under the concept plan approval and the hospital proposal. This makes it extremely difficult to assess the impacts of the proposal. For instance more information and plans setting the hospital works and staging into the wider context of the future relocated school and new commercial and high density residential areas is required, in order to avoid conflicting land requirements, and to assess pedestrian, cycle and vehicular access, parking and safety issues – both to the hospital and to the surrounding development in the future.

The proposal fails to comply with the following standards:

- *Land Use Zoning (Clause14)*:
  The temporary carpark to the east of the hospital encroaches on the E2 lands. Such a use is not permissible under the SEPP. Car parking should be set back from the bushland to avoid adverse impacts on the bushland.

- *Height and Gross Floor Area Restrictions (Clause 18)*
  It is not possible to verify the gross floor areas specified in the EA.

  The maximum building height of the education centre does not appear to comply with the maximum 14.5m height allowed under the SEPP. It appears to be more than 15m high, based on the sections. However, the drawings lack the detail required to accurately assess the height. For instance the sections do not include any RLs, and are not all to the stated scale. Council cannot confirm that the new Shannon building and the CSB expansion comply with the height standard.

- *Public Utility Infrastructure (Clause 25):*
  The proposal only states that it is in the process of seeking formal acknowledgement from the various providers regarding the requirements for this development. It is imperative that the required bodies be consulted and any structures that are required to be placed on the site are done so in an ordered manner. As mentioned already, it is unacceptable for any service elements such as substations, plant areas, water tanks, oxygen tanks to be placed above ground in full view of the surrounding areas of the hospital. All service structures must be placed within basement structures to avoid their negative impact on the campus style of the hospital. This is further discussed under DGR 15.

State Environmental Planning Policy 55 – Remediation of Land
The reports submitted as part of the EA appear to be preliminary only, and therefore are unlikely to meet the requirements of a Phase 2 Detailed Site Contamination Assessment in accordance with the SEPP and condition B13 of the consent for the concept plan. Site contamination is discussed under DGR 9.

State Environmental Planning Policy (Infrastructure) 2007
The application states that the proposed electricity substations do not require separate development consent. This is agreed, however the opportunity to consider the location of any

significant objects of infrastructure, such as the electricity substations discussed above under *Public Utility Infrastructure (Clause 25)* at the design stage, would ensure that they are located appropriately to avoid their impact on other aspects of the development such as the urban design and visual amenity.

State Environmental Planning Policy No 19 – Bushland in Urban Areas
The SEPP requires the consent authority to be satisfied that any disturbance to bushland zoned for open space is essential for a public interest and there is no reasonable alternative. It also requires that development adjoining such bushland take into account the need to retain any bushland on the land and the effect of the proposed development on that bushland, especially on the erosion of soils, the siltation of streams and waterways and the spread of weeds and exotic plants within the bushland.

The works proposed in this Project Application are setback from the established bushland, which is located within an E2 Conservation Zone under the provisions of the Major Development SEPP. A number of conditions of consent for the concept plan approval relate to the protection of these areas of bushland. Non-compliance with the condition requiring the prior lodgement of a biodiversity plan, with a number of components, means that it is impossible to accurately assess the impacts on this bushland.

Similarly, the Controlled Activity Approval requires the lodgement of a Conservation Interface Plan (CIP). While the CIP is not required to be lodged until the Construction Certificate state, the submission of a draft CIP prior to the lodgement of any Preferred Project Report would ensure that consistency is achieved between the plans and the Biodiversity Management Plan and the CIP. This will avoid future conflicts and poor development outcomes in relation to the natural values of the site.

As stated by the proponent, a number of trees in the area of the multi-deck carpark are to be removed. The relocation of the car parking under the new buildings, would improve the interface with the bushland as well as providing an appropriate amount of open area that can be landscaped into meaningful, accessible and useable garden/amenity areas for the workers, patients, visitors and local community.

This is further discussed under DGRs 7, 12 and 17.

NSW State Plan
The proposal states a number of key points from the *NSW State Plan*, however there is little or no delivery on these in the submission. The following three in particular have not been considered despite being aligned with the SAN mission statement:

- *Rights, Respect and Responsibility* – the justice system and services that promote community involvement and citizenship.
- *Fairness and Opportunity* – services that promote social justice and reduce disadvantage.
- *Environment for Living* – planning for housing and jobs, environmental protection, arts and recreation.

The *NSW State Plan* also promotes '*Stronger Communities'* and a '*Green State'*.

In terms of strengthening the community links, the proposal states that the links with the surrounding community include the yearly 'carols by candlelight' and possible fetes on the village green. While it appears that there is an intent to engage the community, providing them with recreation opportunities alongside the hospital staff, patients and visitors, plans identifying communal uses such as bike/walking tracks provide insufficient detail in regard to their location, design or staging and these facilities do not actively link with high quality open spaces within the

grounds. This issue is further considered under DGR 3. It is positive however, to see that it is proposed to link the recreation trail with the track through Coup's Creek.

Provision of a well landscaped garden to the north of the site, offering the unique bushland views, areas of respite and open playground facilities that staff, patients, visitors and the local community could enjoy, would foster the level of *respect, opportunity and environment for living* that the *NSW State Plan* seeks in its fostering of stronger communities.

The proposal states that the 'Faculty of Nursing will result in improved education opportunities', however successful education facilities provide basic on site ancillary facilities. Facilities such as underground carpark in the basement of the education centre and on site quality leisure breakout/park areas are required.

The proposal does not make any contribution to the *NSW State Plan's* '*Green State'* which looks to development incorporating innovations that improve its functioning and productivity. The proposal fails to incorporate environmental design measures, let alone innovation that support the reduction of greenhouse emissions. This is further discussed under DGR 7.

Sydney Metropolitan Strategy
The proposal is not in accordance with the Strategy objectives of protecting the environment and making Sydney climate change ready. The scale and nature of the development mean that is extremely important to take the opportunity to reduce reliance on fossil fuel and reduce water use. This would also be most cost effective at this early stage of the development process. However, the proposal fails to provide adequate design based measures to address this. This is further discussed under DGR 7.

Draft Subregional Strategy for North Subregion
The expansion of the hospital, and the increase in employment opportunities are consistent with the Draft Strategy. However, the proposal poorly addresses the Draft Strategy in terms of *Transport* and *Environment, heritage and resources:* These issues are discussed under DGRs 6 and 17.

Ku-ring-gai Planning Scheme Ordinance
With regard to the KPSO, there are no specific statutory controls that apply to hospital development, however, given the zoning of the site and surrounding sites, it is appropriate to consider its general aims and objectives. The overarching objective of the KPSO is to maintain a reasonable proportion of any development as soft landscaping to ensure that predominant landscape character of the locality is maintained or enhanced. Central to this aim is the minimising adverse impacts of car parking on landscaping character. It is considered that the proposal has not responded appropriately and instead shows a proliferation of car parking structures.

It is also considered that the locations of these structures have been less than optimal and have effectively alienated the site from its natural surrounds.

Development Control Plans
The proposal fails to comply with the following DCPs:

- *Ku-ring-gai Development Control Plan No 31 – Access:* The proposal fails to comply with the objectives of DCP 31 in that accessibility, including accessible parking is inadequate. This is further discussed under DGR 6.

- *Ku-ring-gai Development Control Plan No 43 – Car Parking Code:* The proposal fails to comply with DCP 43. In particular the provision of accessible parking spaces is grossly

inadequate, and the design of the spaces does not comply with the relevant standards. This is discussed under DGR 6.

- *Ku-ring-gai Development Control Plan No 47 – Water Management:* The proposal fails to comply with the stormwater management controls in DCP 47 – Water Management. In addition, it is unclear whether the setbacks to the temporary carpark comply with the requirements for riparian setbacks. These issues are discussed under DGR 12 – Drainage and DGR 7 – ESD.

DGR 2: Consistency with concept plan approval

- Consistency with the terms of approval of Concept Plan MP07_0166 and justify any areas of inconsistency.

The documentation on the proposal acknowledges the SAN hospital as a part of the Wahroonga development Concept Plan, however no connections are illustrated within the submission. Insufficient information has been provided to assess the proposal on social, economic and environmental grounds, particularly in relation to the overall Wahroonga development.

Additionally the proposal states that this submission deals with the short to medium term with a mind to expansion in the long term. The proposal needs to give due consideration to future expansion. This will enable the inevitable future development to be executed in a manner that is orderly and beneficial to the site by building on the structures and infrastructure now being proposed.

The proposal has a number of inconsistencies with the Concept plan approval:

- *Condition A2 - Development in Accordance with Plans and Documentation*
  - The proposal is required to be consistent with the preferred project report and concept plan for the Wahroonga Estate, which describes the landscaping for the hospital area as campus style (Wahroonga Estate Redevelopment, pg 51). This is described as:

    'the landscape treatment across these areas will help to create a 'campus' feel with high levels of pedestrian accessibility. Retention of existing vegetation together with avenue tree planting and larger areas of open lawn will provide a strong green structure within the wider forest setting. A number of key focal spaces related to the hospital church and residential communities will be inter-linked by a strong network of paths and cycle ways placing an emphasis on pedestrian movement.'

    The proposal fails to achieve this, as discussed in detail under DGR 3.

    The proposed development is not located within the existing footprint of the existing hospital development, including the ancillary car park. The proposed Shannon building and the proposed Shannon carpark building have a significantly larger footprint than the original Shannon building, male nurses' residence and workshops that are being demolished for their placement. The proposed CSB buildings are completely outside the existing hospital footprint and are replacing land currently used for recreation purposes. The proposed multi level carpark is completely outside the existing hospital footprint and requires the removal of established mature trees. The proposed at grade parking to the north and to the west of the site far exceed the footprint of the original surface parking, and along with the service roads require considerable retaining walls and landscape mitigation to deal with their regrading.

The demolition of the Shannon wing (retained on the Concept Plan) is supported in part only. Support is given for the rebuild of the hospital rooms and the benefit to the hospital is acknowledged; however, it is not accepted that the footprint of the Shannon building be extended to provide above ground parking adjacent to the building housing the hospital rooms. It is feasible for this parking to be provided under the new Shannon building within its basement levels, and be linked with additional parking provision under the adjoining truck service turning area and within the basement levels of the two new CSB buildings.

The provision of above ground parking is not supported. The new footprint of the two new CSB buildings is not supported unless the sizeable landscape amenity area that it replaces is relocated to an area equally accessible from the hospital and of equal high standard of the current space in terms of aspect and views/connections with the surrounding bushland.

- *Condition A3 – Gross Floor Area*
  There is insufficient detail on the plans to confirm the proponent's assessment of the gross floor area for the hospital and for the education centre.

  It is noted that the proposal includes non-hospital uses. Of particular concern are retail areas. The terms of the approval provide for a maximum of 2,000m^2 for retail in the Central Hospital Precinct. Retail areas are incorporated within the hospital buildings. While the specific uses may be appropriate, the amount of gross floor area for the retail uses is not provided. Further, the plans do not easily enable the calculation of the GFA in relation to the retail areas (let alone the overall GFA). However, Plan No A/E-011 for Level 2 of the CSB includes approximately 160m^2 of retail space on this plan alone. The retail uses should be specified and calculated separated from the hospital uses. This would ensure that future retail on the corner of Fox Valley Rd and the Comenarra Parkway is not excessive, while at the same time freeing up some GFA for strict hospital uses.

- *Condition B1 - Urban design*
  The proposal is inconsistent with footprint requirements of this condition:

  - The footprint of the two new CSB and Shannon buildings are greater and additional to the existing building footprint. It is accepted that this is necessary, however it is unacceptable that a large proportion of new footprint is above ground parking located adjacent to the Shannon building and to the north of the site.
  - It is vital that all new car parking, including both multistorey and at grade parking, be housed within the footprint of the two new CSB buildings, the new Shannon building and the new Education Centre, within their basement levels.

  The proposal is inconsistent with the concept plan approval which requires buildings to be sited to avoid critically /endangered ecological communities, achieve balance between cut and fill and to minimise earthworks:

  - The new fire centre and oxygen tanks are proposed to be located within an area of Sydney Turpentine Ironbark Forest, a threatened ecological community. This is further discussed under DGR 17.
  - While contours are shown on engineering drawings, existing ground levels are not shown on the survey plan. Further the survey plan does not include the area of the extensive temporary eastern carpark. The engineering drawings only state that minor regrading will be required for the new road adjacent to the E2 land behind the multi level car park, and for the large temporary carpark; however, this does not appear to be the case when looking at the contours and the extent of cutting across them. This is therefore also inconsistent with *condition B12 – Geotechnical issues*, and *B6 –Road design and construction* (1).

- Heights of retaining walls or berms are required to assess the extent or potential impact of earthworks on the E2 conservation areas. It is likely that these areas are too close to the bushland and should be setback further to towards Fox Valley Rd. The underground relocation of the at grade parking to the bushland side of the multi-deck carpark would allow the road to be further setback from the bushland.
- Again, it is unknown whether the proposal is consistent with the Biodiversity Management Plan in this regard, or indeed with the Conservation Interface Plan (CIP) required by DEWHA as part of the approval for the Controlled Activity. No CIP or draft CIP has been sighted.

The proposal is inconsistent with the condition requiring buildings with frontage to Fox Valley Rd to have an active street frontage. The fire centre and oxygen tanks are not active uses, but services that should be located where they do not visually intrude on the landscape or streetscape.

- *Condition B2 - Proposed hospital facilities*
  - The documentation on the proposal acknowledges the SAN hospital as a part of the Wahroonga Estate Redevelopment Concept Plan, however the relationship between the proposal and the concept plan is not illustrated within the submission. Insufficient information has been provided to assess the proposal on social, economic and environmental grounds, particularly in relation to the overall Wahroonga Estate development. Even the relationship with future development within the Hospital precinct itself is not included, such as with new nursing accommodation, highlighted by the SAN at a site visit, as urgently needing replacement.

  - Further the plans do not include the level of detail required to enable accurate assessment of compliance with the conditions of consent, such as GFA and height and earthworks. The drawings are not true in their elevations, the lines of bulk of building and structure beyond are omitted. Including these would show the irregularities that occur upon turning the corner and looking at a different elevation. The drawings are not cross referenced to written documentation with items stated in the written documents not evident in the drawings. In addition spot levels are not shown on the plans making it difficult to determine the relationship between internal-external, and accessibility and slope across the site.

  - It is recommended that plans at a scale sufficient to understand the overall layout of the buildings by floor, in relation to each other be included within the Preferred Project Report. 1:400 may be suitable.

  - Additionally the proposal states that this submission deals with the short to medium term with a mind to expansion in the long term. The proposal needs to give due consideration to future expansion. This will enable the inevitable future development to be executed in a manner that is orderly and beneficial to the site by building on the structures and infrastructure now being proposed.

  The relationship of the proposal with the surrounding development and the visual impact are poorly addressed through the design of the buildings and surrounding open space and landscaping. This is discussed in detail under DGRs 3, 4 and 5.

  - The proposal's traffic management lacks information on upgrades that are to be made to items that need consideration in light of the increase in the flows of pedestrian/vehicles. Such as bustop waiting areas on Fox Valley Road, a separate and safe pedestrian access into the hospital that links into the new pedestrian concourse, pedestrian/vehicular pathway separation and crossings on the site.

- *Condition B4 - Biodiversity*
  The proposal is inconsistent with B4 of the Concept plan approval in that no *Biodiversity Management Plan* is included. While it is understood that negotiations are underway with DECCW in relation to some of the land to be transferred for conservation, and that the finalisation of the plan will require these and potentially other negotiations to be completed, it is not possible to assess the consistency of various measures with the *Biodiversity Management Plan* without access to the plan. This applies to a number of aspects of the proposal in relation to specific components of the plan, including the *Vegetation Management Plan*, *Fire Management Plan*, the *Hydrology and Nutrient Management Plan* and the *Management Plan* relating to public access to the E2 Conservation lands. At the least, a draft Biodiversity Management Plan should have been submitted. It is noted that a number of sections of the EA claim that the proposal is consistent with the Biodiversity Management Plan. This seems somewhat farfetched, when no such plan has been made. This omission is a critical issue in relation to the proposal.

- *Condition B5 - Bushfire protection*
  The Clinical Services Building does not comply with the APZ requirements. There are also a number of other concerns in relation to compliance with Planning for Bushfire Protection are outlined under DGR 14.

- *Condition B6 - Road design and construction*
  As previously stated, concerns with Planning for Bushfire Protection, flora and fauna and earthworks, are discussed under DGRs 6 and 14 and DGR 17.

- *Condition B8 – Transport*
  Issues in relation to the Work Place Travel Plan and Transport Access Guide and pedestrian and bicycle linkages and other transport infrastructure are discussed under DGR 6.

- *Condition B9- Car parking*
  The proposal fails to consider Council's DCP 43 – car parking. This is discussed under DGR 6.

- *Condition B11 – Stormwater Management*
  The proposal fails to comply with Ku-ring-gai's DCP 47 – Water Management. These issues are discussed under DGR 12 – Drainage and DGR 7 – ESD.

- *Condition B13 – Contamination*
  No Phase 2 Detailed Site Contamination assessment appears to have been provided.

- *B14 – Construction management and staging*
  The proposal fails to comply with this condition, as the staging plans are inadequate, and no construction management plan has been submitted. These issues are discussed under DGRs 16 and 18.

DGR 3: Built Form and Urban Design

- Height, bulk and scale of the proposed development within the context of the Sydney Adventist Hospital Campus and adjoining development;
- Details of proposed open space and landscaped areas; and
- Design quality with specific consideration of the façade, massing, setbacks, building articulation, appropriate colours/materials/finishes, landscaping, safety by design and public domain.

Height, Bulk and Scale

The new CSB, Shannon, and Education Centre buildings are of necessity at a large scale. They will be seen from Fox Valley Road, from the surrounding areas and from the site itself. It is therefore vital that the buildings are designed in an interesting way to present their bulk and scale in an aesthetic manner.

It is imperative that the infrastructure of underground parking levels be constructed as part of this development when large substantial buildings are being constructed with substantial foundation works. Creating a carpark under the entire new expansion CSB footprint stage 1a and 1b spanning across the at grade service area and joined underneath to the basement of the new Shannon building, would not only be efficient in utilisation of ramping and access, but enables the ground level areas to be clear of structures whose bulk against the bushland cannot be mitigated at the higher levels through the proposed screening, planting or otherwise.

The Visual Impact Analysis recognises that the bulk of the development impacts on the view from local streets and residences in a one-two kilometre radius, to a greater or lesser extent. The analysis states that there is opportunity to 'reduce building bulk towards the top of the development, thereby reducing the visual bulk adding to the merit to the proposed development'. Reducing the floor plate of the higher elements of the CSB and Shannon wing, providing articulation and/or stepping back the top floor/s would assist in reducing the bulk of these buildings.

The design of the CSB expansion and the Shannon Wing façades should reduce the visual bulk and to break down the monolithic structures into smaller components through the use of significant façade articulation. The vertical rhythm as expressed currently acts to mask the lack of significant articulation within the design of both the Shannon Wing and CSB expansion. The façade should be designed with significant articulation to break down the bulk and scale of the two new wings to minimise the visual impact of the development.

Currently the open spaces reflect the 'left over' character as identified in the assessment of the existing landscape character. Most of the identified open space areas suffer from large amounts of overshadowing and are not connected with each other. Some areas currently dedicated to at-grade parking should be used as linking corridors of landscaping and/or to consolidate an outdoor landscaped area sited in an optimal location for solar access and amenity.

Open space and landscaped areas

There are a number of issues that this proposal has not addressed in the landscape documents and that are not acceptable in terms of the landscape of this site. These include the following:

General Issues:

- It is not possible to accurately check whether the maximum heights comply with the standards in the *SEPP (Major Development) 2005*. The education centre appears to be too high, exacerbating the impact of the poor façade presentation to the Comenarra Parkway.
- In general the hospital site lacks areas of quality open space directly accessible to hospital users, for recreation and for respite/rehabilitation.
- The structure of the existing core hospital buildings, and the proposed expansion, does not lend itself to establishing a direct relationship between external areas and various wards/ hospital functions and public areas.
- Apart from the village green, the most significant areas of open space are located in a piecemeal fashion between roads/ existing car parks, which physically isolate these areas from the hospital.

- The proposed scheme does not improve the existing situation. The hospital core area will continue to be dominated by multistorey buildings and surrounded by car parks and roadways with minimal quality centrally located, well oriented or accessible open space adjacent to the main hospital buildings or elsewhere within the hospital precinct.
- Areas around the hospital are dominated by roads, service access ways, multi-storey hospital buildings, with open space largely the areas leftover rather than planned spaces.
- The hospital setting currently contains extensive areas of bushland and a perimeter edge containing open grassed open space, to the north and west. These areas are physically remote from the core areas of the hospital. The surrounding bushland and perimeter open spaces, provide visual amenity rather than practical and accessible recreational / rehabilitation opportunities for the majority of hospital users. This opportunity needs to be provided on the site.
- The majority of the perimeter open space is located between areas between existing and proposed carparks, roads and bushland, and is are relatively narrow. Some areas quite steeply sloping towards the bushland and or have significant detention structures located within them, thus limiting their potential as useable open space.
- The landscape design statement indicates that a key objective of the landscape design is to reinstate the original values of the site, in which the landscape setting and extensive access to recreational opportunities within the landscape played a key role. The idea of a "sanatorium", an area for healing and rehabilitation by way of a direct relationship to the natural environment. The landscape design and the design fails to achieve this objective with key areas of potential open space built upon (tennis court precinct and car park area to the north), minimal areas of easily accessible open space provided adjacent to the main hospital complex, and areas surrounding the main complex dominated by buildings, roads and new and existing car parks.
- The proposal mentions the importance of the landscape setting but has not preserved it on the immediate site, nor acknowledged it through the placement of the design elements. In particular, the above ground carparks turn their backs on the greater landscape setting and they create a barrier at ground level where good landscaping could be provided.
- The amount and quality of landscaped areas falls far short considering the size of this development and the potential for landscape to assist in the healing and wellbeing of patients and their visitors. Consideration of a variety of quality landscape gardens with varying degrees of access and enclosure should be considered for this site.
- No consideration is given to the provision of rooftop gardens that have the best potential to provide private recuperation areas for patients and visitors, particularly as the lower roof tops have the best site aspect to the north with its associated views. Rooftop gardens can also be utilised as staff breakout areas, particularly important in this type of high pressure hospital environment. Rooftop landscapes are synonymous with many practices of green building and should be incorporated into this proposal. Coupled with this is the inevitable future expansion of the hospital and the necessity to consider open and landscaped areas in an innovative way for that future expansion.
- The new CSB courtyard appears very unlikely to be used in the manner stated by the proponent. It is unclear how this small landscaped area adjacent to the new CSB building area can be utilised 'to provide a useable outdoor area to be enjoyed by staff and visitors' as stated in the proposal. The only room opening onto it is a small portion of the day infusion centre, and the two blank walls of doctor's suites 9 and 12 flank the other side of it. Whilst the elements of the garden may be thought out, the access to the garden is limited and its small size and location adjacent to a frequently used roadway, alongside the placement of three substations at its northern end, make it a poor space and unlikely to fulfil the 'recuperation, relaxation and respite for patients, staff and visitors' that the proponent seeks to provide.
- The proposal document states that *"the Sydney Adventist Hospital is a campus-style hospital development with a series of buildings of various ages, heights and configurations located within a landscaped setting".* Innovative landscaping is an important requirement on

this site to maintain the 'campus style' that the proposal documents describe. In addition good landscape is necessary to acknowledge the historical bush connection and setting. The landscape provision and initiatives on this site are minimal.
- Apart for usage for large community functions (eg fetes, carols by candlelight) the Village Green appears unlikely to be utilised by the patients/visitors/staff as an area for relaxation and recuperation.
- The landscape design does not show how the existing and proposed/expanded drainage bio-retention basins will be integrated into the landscape design. These structures have implications in regard to finished earthworks, recreational use, access, vegetation impacts.
- No detail has been provided in relation to landscape planting. It is considered that use of native locally occurring species form the two local endangered vegetation communities which occur nearby, (Sydney Turpentine Ironbark Forest and Blue Gum High Forest), would be appropriate from an ecological and environmental standpoint.

Earthworks for car parks
- Insufficient detail has been provided in relation to earthworks necessary for the construction of the new on grade carparks (both temporary and permanent) and associated perimeter roads. This is important in relation to open space design particularly in the narrower and steep areas to the northern perimeter adjacent the new roadway and car parks.
- The proposal indicates that earthworks will be minimal. However given the steep nature of some of the edge areas and the need to integrate drainage structures (bio retention basins and the like) as well as the proposed pathways/cycle ways recreational areas, it is considered that significant change to the topography of the area will be necessary. Indeed, the Geotechnical Investigation report by Jeffery and Katauskas Pty Ltd states that:

  '*We note that significant earthworks and stormwater diversion works will be required, particularly for the lower new ring road extension and the temporary parking.'*

  It is essential that the area of new earthworks and associated structures be designed to ensure no impact or encroachment to the bushland edge.

Northern car parks Stage 1A
- The proposed on grade car park and multi storey car park building to the north of the CSB building physically and visually isolates this building from the bushland to the north.
- There is excellent potential for a large high quality open space area within this zone, which could benefit both hospital users and future residents of the Wahroonga precinct. It is considered that the location of on grade and multilevel car parks within this area is a substantial lost opportunity in relation to open space provision.
- Provision of car parking elsewhere on site, as an underground facility and the provision of an integrated area of open space to the north of the CSB building directly connected to the CSB should be explored.

Tree removal/ impacts/ tree protection
- The Director General's Requirements included (under Landscape Plan) "tree protection measures both on and off the site". The documents provided do not address this issue.
- No tree management plan/ tree protection plan or environmental site management plans have been provided with the submitted documentation.
- A tree management plan developed with the site management plan is essential in this regard to ensure appropriate tree protection measures are undertaken throughout the demolition and building stages.
- No arborist report has been provided with the documentation detailing trees on the site, tree impacts.
- Numerous trees both exotic and native will require removal as part of the proposed works. While it is acknowledged that this is necessary and that the majority of these trees are

planted specimens with few being of particular significance, it is considered essential that remnant native and other significant trees on site are retained wherever possible.
- Due to a lack of detail in relation to the drawings submitted and an absence of a detailed arborist report and Tree Management Plan is not possible to analyse tree impacts and the feasibility of the proposed tree retention in any detail.

Impacts on STIF vegetation
- These trees are large and prominent remnant native specimens and form part of the state listed endangered vegetation community. The location of tanks and the fire control centre within this area will damage the trees over the medium term, even if their immediate removal is not required. This issue is further discussed under DGR 17.

Inconsistencies
- There are other inconsistencies, such as the retention of trees in seating area between the concourse and San Clinic (Trees D34 – 39 Spotted Gums, Corymbia maculata) is in conflict with the proposed bio retention basin within this area indicated on the hydraulics drawings.

CSB expansion / Existing tennis court precinct
- Opportunity exists for a functionally meaningful open area to be developed within the site in relation to the existing tennis court precinct, which is more centrally located within the site, and also the area to the north of the hospital where the existing on grade parking is located.
- The redevelopment of the hospital will result in virtually all of the tennis precinct being developed for expansion of the CSB stages 1A &1B.

Courtyard to the North West corner of the CSB building
- Given the size of the CSB building this new courtyard, which is the only on ground courtyard/ passive outdoor space for this building, is very small. The courtyard is not centrally located and is not well located (functionally to the majority of the users of the building.
- Electrical substations located immediately adjacent to the north could also detrimentally impact the courtyard. The courtyard has less than ideal orientation due to overshadowing from the CSB building to the east and north east during the morning ,and exposure to afternoon sun during summer

Village Green
- The existing village green area to the front of the hospital is the only large area of developed open space immediately adjacent to the main hospital buildings. Currently this area is isolated from the CSB building by roadways and is therefore not particularly easily accessed, nor does it relate well to the hospital in general as a key open space.
- While the loop road has been deleted from this area as a part of the proposal, the fundamental problems with the village green as a key area of open space for the hospital remain. That is that this area remains relatively inaccessible for rehabilitation or passive recreational purposes, nor does it easily service or flow onto areas which patients and families might use, eg hospital wards or a cafeteria/ café. The design will result in the removal of all but one of the existing trees within the village green area.
- In relation to the design concept the lawn area lacks a human scale and , is overlooked / dominated visually by the large scale hospital buildings. There is an absence of trees(most existing trees are removed)/ furniture and space articulation which could create comfortable places for individuals or small groups.
- Rather it appears that the design intent is to continue its visual function as a entry feature and for the use of this area for larger community events.
- While these functions are acknowledged, the provision of useable well oriented and intimate open space close to the core hospital buildings and users is not therefore well addressed by the village green design.

- Further there appears to be no access for wheel chairs to the two turfed upper terraces from the concourse. There appears to be only access to the lower village green area for wheelchairs, and this would be by way of the pathway past the clinic building. The length of this route is of concern ie in excess of 50m – 70m. No proposed levels for the village green have been indicated to assist in confirming access/ useability of this area.

Landscape /sitting area north of San Clinic
- This area east of the concourse and north of the San Clinic will conflict with the proposed bioretention area indicated on the hydraulics drawings.
- The area comprises existing tall spotted gums (noted as large tall canopy trees in the (landscape opportunities plan) to be retained and a gravel seating area. The bio-retention area would result in removal of these trees and seating area and access would not be able to be installed.

Upgrade of existing open space corridor
- Area between maternity wing and nurses' residence is indicated on landscape design proposal drawing as being upgraded. This appears to conflict with the provision of nine water tanks within this area.

Design Quality

The concourse and arrival podium are ideally located to take advantage of the sweeping continuous line of bushland landscape that is unique and is one of the strengths of the hospital's historical setting. The proposal acknowledges this with a good strong design element in the arrival podium. However, the reality of this visual connection does not exist when the proposed context is considered: the landscape is only a backdrop to the proposed carpark building which sits in the view forefront when exiting the hospital entry.

The concourse is a link connecting to the village green and the entry forecourt however it is unclear how it "provides a direct engagement with the natural environment in line with the hospital philosophy" as stated in the submitted documents. It does not connect any natural environment element to the hospital, nor does it strengthen the connection with Fox Valley Road into the hospital. These could be done through the placement of a high standard landscape garden to the north instead of a carpark, giving weight to the nodal points of the concourse.

However the concourse itself, is a positive element, providing clear access and connection through the main hospital buildings. It is recommended that this element be extended to link to Fox Valley Road to provide a separate and visually distinct entry gate from Fox Valley Road, close to the bus stop area for pedestrians entering the site from public transport, other parts of the san site and neighbourhood.

The provision of the loggia at ground level is a positive element creating connections between the buildings, however consideration must be given to ensure that weather canopies provided for rain/sun shielding are functional. If they are too high they do nothing to protect people from the weather.

The provision of at grade parking, above ground parking structures and above ground parking within the new parking stations is not appropriate in this high profile development. All car parking should be provided underground within multi-level basement parking. Parking can be linked below ground between the new blocks to provide more than the required parking area that is provided in the new northern car park structure, the new Shannon car park, and the at-grade car parking to the west of the site, as well as removing existing at grade parking on the site. This will enable these lands to revert to landscaped gardens that will improve the hospital building setting and provide spaces for the casual meeting or relaxation of staff and patients. It

is vital that open areas are not taken up by services or car parking, which essentially prevent the potential for direct access to, and visual links with, the site and its setting.

As with any new buildings or substantially altered on-site buildings, the Faculty of Nursing/Education Centre building also needs to design and incorporate underground basement parking for staff, students and visitors. Council requires basement parking to maximise the landscaped area for all residential flat buildings of three storeys and above. This project is at a much larger scale, and there is no reason that this cannot also be done.

The height and blank façades of the Education Centre are not compatible with the character of the low density residential area on the opposite side of the Comenarra Parkway. The education centre is over 15m high, and up to 16m in some locations, beyond the maximum height permitted under the SEPP. It is recommended that the building be lowered and greater articulation and interest in the facade be provided. Stepping back the building above the second floor would also improve this interface.

The arrival podium between the hospital building and the proposed multi-deck car park contains blank walls to both sides. It is recommended that the hospital building include more activation along this facade. The relocation of parking underground would open this area up to the bushland views, making it into a dramatic but peaceful entrance to the hospital, consistent with the documentation in the proposal.

Internally the main entry from the podium to the main reception desk and then to the lifts is excessively long, and likely to result in confusion for patients and visitors. It is recommended that the main reception area be located at the podium entry.

In general, waiting areas are internalised and not adjacent to daylight/outlook/garden areas. Where natural light cannot be provided, consideration should be given to the use of innovative design techniques such as light wells, atria, and recessing portions of the façades to provide landscaped terraces giving access to natural ventilation and outdoor spaces to upper levels. These types of innovations would ensure a healthy internal environment and quality break out areas for staff and patients.

A perimeter road is required for bushfire however, this road can serve as bike trails and walking track connecting to open spaces on the hospital site when there is no emergency. This would allow for a reduction in hard surface areas. This is discussed under DGR 14.

Since this is a “campus-style” design proposal, it must be considered visually from all angles, there is no particular front or rear elevation treatment; therefore, the placement of services elements (fire water tanks, oxygen tanks, substations etc) in full view of the site access roads and from Fox Valley Road is not congruent with the basic design composition and has adverse impacts on the streetscape. For example, the location of tanks and fire services in view of the approach from the Fox Valley and Comenarra Parkway crossroad, as well as in view of the internal roadway will create a poor visual impact from the existing school, and what will eventually be a housing and retail area. Further, their location does not comply with the requirement for all new building facing Fox Valley Rd to provide for active uses. All services must be located within building basements or underground with clear signage for their use and maintenance.

Plant rooms would be better located in building basements or within the central core of buildings, allowing external facades and rooftops to be utilised by patients/staff who would benefit from the amenity of natural light and environment, as well as and improve the appearance of building. Location of plant rooms in building basements would enable the use

of tri-generation technology, and allows the best floors to be used by patients/staff and potential for access to a staff amenity cafeteria rooftop garden and patient recuperation areas.

The bunker spot levels need to be shown at every level including the top of the roof slab. It appears that the roof is external and exposed. It unclear how this fits into the building apart from being wrapped in precast concrete panels and having a flat roof that has not been resolved, therefore appearing as a 'left over' area that is looked down upon from the upper levels.

DGR 4: Environmental and Residential Amenity

- Impacts of the proposal on solar access, acoustic privacy, visual privacy, view loss and wind impacts on surrounding development and environment; and
- Details of the measures to be implemented to achieve a high level of environmental and residential amenity.

In general the proposal appears not to consider the amenity afforded by the design to people on or off the site. The proposal has focussed on the provision of the required hospital accommodation and has not provided any meaningful facilities for the amenity of the users of the site. The application has failed to properly address amenity impacts for outdoor areas. It is virtually silent on solar access and wind impacts on outdoor areas.

An entire section of the *Social and Economic Benefits Assessment* is highly misleading. The section on architectural design of new buildings, claims that the architecture of new and refurbished buildings is based on the principle of providing 'healing and healthy environments,' as was specified in the hospital's brief to Morris Bray Architects. While some of the principles for 'wellness and healing' outlined in this section, are clearly included in the design, such as through the provision of ample space in patient rooms for family and visitors, the new concourse design and a mix of casual meeting places for patients and visitors, other principles are poorly addressed. The principles outlined also require:

- High quality landscaped areas inside and outside the hospital buildings, to support good design of these spaces
- Taking advantage of the natural beauty of the bushland at the rear of the concourse through the design of the building and placement of openings
- Maximisation of the flow of light and fresh air through the building
- The use of natural materials.

Indeed the claim that the hospital redevelopment uses 'biophilic architecture' is not substantiated, as these claims are far from being borne out in the design:

- Due to the large amount of at grade parking, the amount of open space is only those remnant spaces between buildings. A particularly poor example of one of these spaces is the 5m very long strip between the Shannon Wing and the existing annexe to the Clifford Building. The amenity for both the annexe and the Shannon wings will be poor along these portions of the buildings, while the space between the buildings is a poor outcome both from an amenity point of view and from the perspective of Crime Prevention through Environmental Design.
- Inadequacies in regard to light and ventilation and views to the bushland are discussed under DGR 7.

The proposal alludes to "large landscaped spaces". There is only one large area retained on the entire site, this is the existing Village Green which is proposed to be terraced and grassed. Its use for occasional large functions such as 'carols by candlelight' or a village fete are commended, however, given its location and aspect to busy roadways and thoroughfares, it is unlikely to be used as a peaceful breakout area by patients, staff or visitors. The second landscaped area is the

garden adjacent to the new CSB building which has little merit of size or quality. It is therefore vital that the application provide actual meaningful large landscaped areas.

Assessment of the shadow diagrams shows them to be inaccurate and not a true representation of the shadow patterns on this site. Of particular concern is the shadow on the existing childcare centre.

Neither does the proposal adequately consider the impact on the amenity of the nursing accommodation, either the existing accommodation, or as redeveloped in the future. The poor open space provision will have a significant impact for nurses living on the site.

While the noise and vibration of plant is considered, the sites used to test noise during construction do not include the nursing accommodation or the childcare centre. This is also discussed under DGR 18.

While the provision of a new playground area for young children is supported, the location of the proposed play area to the south of the existing SAN Clinic building is not desirable. The playground will lack sun for substantial portions of the day due to overshadowing from the clinic building and this will affect the amenity of this area in general, but particularly during autumn, winter and spring . This falls short of the type of modern imaginative children's playgrounds, such as a 'Fairy Garden' or 'Secret Garden', located in bright, uplifting settings within hospitals.

No indication of wind impact along the concourse through the building is given; being a pedestrian and seating area, wind studies should indicate what standards will be created for pedestrian movement and seating. In addition, wind impact around the site along pathways and bike and vehicular roadways should be mitigated using trees (which also serve to create shading on hard surfaces reducing heat build up).

The open, continuous design of the pedestrian link combined with the characteristics of the site could combine to create an unpleasant wind-tunnel. Wind mitigation measures need to be implemented down the length of the pedestrian link.

Growth in the use of the hospital requires a proportional growth in supporting facilities and growth in on site amenities. Given the large increase in population utilising this site as a result of the proposed expansion, insubstantial amenity and facilities have been provided to ensure the support of the people when on the site working, visiting or as a patient.

DGR 5: Visual Amenity

- Impacts on views into / out of the site.

The view line analysis from a distance from the site is generally supported. The proposed built form, by virtue of its size, height and placement on a site that has an elevated position in the local landscape, will be visible and therefore should be treated as such. Visual amenity can be preserved and enhanced through the creation of a visually inspiring collection of building forms and facades; rather than, the impossible task of merging such a large collection of buildings into the landscape by trying to use sympathetic colours, material and finishes.

The buildings cannot provide an interface with the surrounding bushland as is proposed. The only interface that is meaningful on this site is the provision of landscaping and green areas around the buildings and connecting to the bushland beyond. This interface creates the setting for the hospital and has more meaning in its treatment than a token effort to create interface through the buildings materials and colours.

The proposal states it seeks to "retain existing vegetation and individual valuable trees on site where possible and practical, to soften the visual prominence of development from edges of site and retain the existing visual character", however there is no evidence of this having been considered.

The views to the hospital from approach road, across the valley to the north and walkways around the building are ill considered. Placing an above ground parking station to the north of the hospital building presents poorly to the northern side, it is a poor and insensitive element of interface between the built and bush environment. The Shannon carpark presents poorly to the site in general. Since the site is not of urban/industrial character, elements such as metal mesh screening, blank facades, green walls covering walls that lack interactive and personable qualities more akin to this site location and use.

The visual impact of the façade of the Education centre has been discussed under DGR 4.

Views from the upper levels of the hospital buildings have been considered in the documentation provided. Views from and connections with ground to second levels have not been considered. Views across and around the site itself to the hospital buildings have not been considered. The placement of blank facades to primary movement and visually prominent areas such as the arrival podium facing the car park façade of the new above ground parking station, and the carpark façade of the Shannon building parking facing the new education centre and existing childcare centre and what will eventually be nurses living quarters with communal areas, are ill considered. The experience of people passing through the site is as important as those viewing the hospital from afar, and needs consideration. Equitable visual amenity needs to be ensured for all groups including the community, patients, staff and visitors, in line with the hospital ethos.

DGR 6: Transport and Accessibility Impacts (Construction and Operational)

- Provide a Transport & Accessibility Study prepared with reference to the Metropolitan Transport Plan – Connecting the City of Cities, the NSW State Plan, the NSW Planning Guidelines for Walking and Cycling, the Integrated Land Use and Transport policy package and the RTA's Guide to Traffic Generating Development, considering the following:
- Demonstrate how users of the development will be able to make travel choices that support the achievement of relevant State Plan targets;
- Detail the existing pedestrian and cycle movements within the vicinity of the site and determine the adequacy of the proposal to meet the likely future demand for increased public transport and pedestrian and cycle access;
- Identify potential traffic impacts during the construction stage of the project, and measures to mitigate these impacts;
- Describe the measures to be implemented to promote sustainable means of transport including public transport usage and pedestrian and bicycle linkages in addition to addressing the potential for implementing a location specific sustainable travel plan;
- Daily and peak traffic movements likely to be generated by the proposed development, including the impact on nearby intersections and the need / associated funding for upgrading or road improvement works (if required). The traffic impact assessment should consider base models with future traffic generated by the Sydney Adventist Hospital; and
- Appropriate levels of on site car parking for the proposed development having regard to the Concept Plan Approval (MP07_0166), local planning controls and RTA guidelines (note: The Department supports reduced parking provisions, if adequate public transport is available to access the site).

Transport and Accessibility

The Sustainable Transport Initiative sets out opportunities to increase travel choices for the SAN population. While visitors, some nurses and some patients would be the prime targets for behavioural change and mode shift, the nature of hospital work and timing of work shifts are generally not conducive to alternative modes of transport, particularly where morning/night shifts are involved and where relatively high numbers of elderly day patients/visitors are present. As a result, the population of the proposed development is still likely to be highly vehicle dependent for their travel needs, and may result in the failure of the proposal to achieve the relevant State Plan targets.

An analysis of bicycle and pedestrian paths within the hospital site has been provided as part of the Transport Access Guide and Workplace Travel Plan. However, this should have also been considered and integrated with the pedestrian and cycle needs of the rest of the Wahroonga Estate, including the portion of the Estate on the south-east side of Fox Valley Road. In fact, it is not clear how the hospital development transport plan fits into the overall concept plan and what the final configuration of the roads/paths/bike tracks would be.

While the draft statement of commitments includes a commitment to pedestrian and bicycle connections shown in the Sustainable Transport report, the Pedestrian and Cycling Opportunities Plan is at too high a level to adequately understand how pedestrian and cyclists will access the hospital, or its facilities. The Preferred Project Report should clearly show these linkages in the site plans. Details are required for clear pedestrian access from Fox Valley Rd, as well as within the site. Similarly, clear routes for cyclists to bike parking and showers are required. Distances should be minimised.

The series of road upgrades that form part of the Department of Planning approval of the Wahroonga Estate concept plan (subject to further assessment) includes the requirement to provide two southbound travel lanes on Fox Valley Road, from Pacific Highway to the site. Consideration needs to be given to the impact this may have on the space requirements for bicycle riders, and allowance should be made where possible, for a dedicated bicycle lane or other equivalent bicycle facility on Fox Valley Road.

Appropriate bicycle secure parking (both staff and visitors) and shower/locker/change room facilities (for staff) should also be provided for the proposal, to encourage bicycle use. Austroads guidelines suggest 1 space per 15 beds (for employees) and 1 space per 30 beds (for visitors).

There is some public bicycle parking shown outside the Medical Records section of the CSB Floor Plan (Level 1), but this is unlikely to be adequate. Also, bicycle parking for visitors should be located in an area where there is sufficient casual surveillance. The type of parking facility provided should be in accordance with Austroads guidelines, and should enable the whole bicycle frame to be locked, not just a wheel. Separate facilities should also be provided for staff/employee bicycle parking.

The main entry to the hospital is at the rear of the building and therefore not obvious from the street. A clear pedestrian path from the Fox Valley Rd and the bus stop on Fox Valley Rd is required.

There should also be direct and convenient access from the new concourse/main pedestrian entrance to the bus stops on Fox Valley Road, to encourage bus use. Details and a schedule of public transport infrastructure improvements (e.g. bus stop signage, shelter upgrades, improved timetable information, lighting and security upgrades) should be included as part of the requirements of the Sustainable Transport Initiative.

Temporary car park
The temporary car park to be constructed in the north-east corner of the site at Stage 1A (256 spaces) is indicated (in Appendix F of the Assessment of Traffic and Parking Implications) as being in place until the completion of the hospital (2020). The Masterplan, however, indicates that this area will be occupied by proposed residential and school uses. The number of spaces in this car park is being relied on as contributing to the total availability of parking according to the Assessment of Traffic and Parking Implications, yet the effects of its future removal to accommodate the residential and school development has not been considered. Its removal would reduce the total parking provision from 2058 spaces to approximately 1,800, but there is no analysis of whether this is adequate provision.

Promotion of alternative transport modes
The sample Access Guide ("How to Find Us") shown in the proposed Workplace Travel Plan should highlight and prioritise alternative modes of transport over private vehicles. Also, walking/cycling distances from nearby rail stations (including Warrawee and Normanhurst stations) should be indicated, to encourage integration of walking/cycling and rail.

Commitments to increase public transport access, access by alternative modes, and reduce private vehicle use should be clear and measurable, and a monitoring program should be implemented and the results reported and reviewed to ensure the projected benefits are achieved. The proposed Workplace Travel Plan indicates how the program is to be implemented, measured and monitored, but the Plan should also indicate some remedial measures should the indicated targets not be met, and the results of the various surveys and monitoring should be shared with Ku-ring-gai Council, for information.

Traffic and parking implications
It is difficult to agree with the statement at the top of p21 of the Assessment of Traffic and Parking Implications, which suggests that there will generally be no increase in clinical services, and that this is one of the factors that would not justify a pro-rata increase in traffic generation. Clearly, from the material provided, floor area related to clinical services is set to expand by over 18,800m^2. Furthermore, it is also considered that this would result in the need for additional staff and nurses to service the expanded uses, and as such, would also attract additional visitors. The projected SAN Population Schedule is also unclear, and this makes it difficult for Council to undertake its own traffic generation assessment (see "Appropriate levels of on site car parking…" below). Clearly, a detailed combined assessment of the whole Wahroonga Estate and the SAN should be undertaken so that the cumulative effects of both proposals can be known. It is not adequate to consider either in isolation. However, a series of road upgrades form part of the Department of Planning approval of the Wahroonga Estate concept plan (subject to further assessment), and this, to some degree, governs the extent of road improvements. Therefore, the scope for additional roadworks, or expansion of the approved works may be limited if traffic impacts are higher than those forecast in the Assessment of Traffic and Parking Implications.

A clear indication of where any gates are to be installed, where parking fees or limited entry is to be allowed, is also required, to assess the impacts of the proposed access routes on the surrounding development now and in the future.

A new access point to the site has been shown to the north-east of the existing traffic signals on Fox Valley Road. Due to its proximity to the traffic signals, it is likely that access to Fox Valley Road would need be restricted to a left in/left out arrangement to avoid potential conflicts.

The changes to parking numbers at the bottom of the table after page 7 in the Assessment of Traffic and Parking Implications are not consistent with the timings and the sum of the changes shown in Appendix F (Stage Car parking) of the Assessment of Traffic and Parking Implications. As a result, it is unclear and difficult to independently ascertain the quantity of parking spaces that

would be provided at the various stages, and whether these spaces would be adequate to cater for the needs of the development at that point in time.

Furthermore, there are inconsistencies in the upper and lower sections of the SAN Population Schedule shown in Appendix B of the Assessment of Traffic and Parking Implications. This makes it difficult for Council to undertake its own assessment of the parking needs (based on travel mode splits and vehicle occupancies) and to determine what the potential impacts may be of the adopted 9% reduction in traffic generation due to the proposed travel demand management measures.

Accessible parking on the site should be provided at a minimum rate of 3-4% of total parking provision, or more (subject to needs analysis). Therefore, for a total provision of 2,058 spaces, there should be approximately 62-82 accessible spaces. However, the only accessible spaces shown are the 26 spaces on level 2 of the multi-deck car park, which would be inadequate. Also, the design of these spaces should be in accordance with AS2890.6 (2009), which requires a shared area adjacent to parking spaces. In other parking areas, such as that within the Shannon building, there are no accessible parking spaces indicated, not is there any lift access or direct access from the car park to the adjacent building.

Differentiation of parking needs to be made: for example, hospital paid parking for visitors, long and short term parking, staff parking, student parking, service vehicles, bicycle and motorcycle parking.

The Environmental Assessment acknowledges the need to reduce the impact of the northern multi-deck car park and the multiple at-grade car parks. The assessment provided states:

'The proposed treatment of the multi-deck car park and the permanent and temporary at-grade car parks are also considered in detail, taking into account opportunities to soften their potential visual appearance.'

The EA recognises the visual impact of the carpark to the extent that they intend to consult on how to reduce its impact with screens etc.

As previously stated, the provision of at grade parking, above ground parking structures and above ground parking within the new buildings is not supported in this high profile development as they prevent the potential for direct access to, and visual links with, the site and its setting, and in some cases, may compromise future intensification of hospital uses on the site. Issues in relation to the location of carparking are discussed under DGR 3.

Accessibility
The accessibility report includes the following statement:

'Notwithstanding the accessibility of the design it is also evident that further detailing of various areas shall be undertaken by construction certificate stage to ensure compliance with AS1428.1, AS1428.2, AS1735.12 to satisfy Parts D3, F2.4, E3.6 of the BCA, Council's DCP 31 and the DDA.'

A condition of consent in relation to internal design of accessible toilet facilities, evaluation of slip resistant floor materials, lift specification, door schedule, tactile ground surface indicators, lighting levels, decor, signage, hearing augmentation facilities, furniture/counter fitout and the like, is required to address this requirement.

DGR 7: Ecologically Sustainable Development (ESD)

- Detail how the development will incorporate ESD principles in the design, construction and ongoing operation phases of the development;
- Include a description of the measures that would be implemented to minimise consumption of resources, water and energy, including an Integrated Water Management Plan which details any proposed alternative water supplies, proposed end uses of potable and non-potable water, and water sensitive urban design; and
- Demonstrate that the development can achieve a minimum 4 Green Star rating, or any other suitably accredited rating scheme.

General

The proposal is on a major land use site and the hospital, being the largest employer in this area, will be a large scale development with long term usage which will both impact on and be affected by future climate change. There will be very high ongoing energy and water consumption, and waste output and emissions. Therefore it is recommended that this development achieve a minimum 5 Star Green Star Rating, but preferably a 6 Star Green Star Rating, under the GBCA Green Star Healthcare Tool.

This would then encourage the provision of energy reduction measures, such as tri-generation, that were included for consideration in the initial proposal for state significant development. It is short-sighted (from an energy and financial viewpoint) not to incorporate such measures within a development of this scale and expected life.

The CSB floor plate, approximately 55m wide for the first five levels, cannot possibly meet the principles in relation to the flow of light and fresh air through the building. While the higher ward levels are on a narrower plate of about 25m wide the north/south orientation turns its side to the natural beauty of the bushland and the best aspect from an energy and light point of view. The fact that these principles are not well incorporated into the design is noted in the environmental assessment in regard to ESD, in which less than half the required credits are achieved through the actual design of the buildings. In particular, to meet the indoor environmental quality to achieve only 4 Green Stars, can only be achieved with a number of add-ons yet to be confirmed.

A better outcome would result from increased basement parking. The CSB wing could then be reduced in height and oriented east/west to capture the views of bushland without impacting on the views from the Shannon Wing and to gain design credits under GBCA Green Star design rating. However it is acknowledged that these buildings have been located so that views are predominantly maintained for the wards in the existing building, and if retained in this manner, other measures to deal with the E-W aspect and heavy thermal load need to be employed.

The Statement of Commitments should require evidence that the works, as a whole, meet the requirements of the appropriate Green Star rating, rather than one building at a time. There is no equivalent rating available, and only Green Star should be specified.

The proposal outlines 20 possible façade systems. It is unclear how these facades relate to the creation of a green building as they are referring to construction rather than implementation of ESD principles. No mention is made of any of the façade materials being from sustainable sources.

The proposal states that the *'façade is to implement clever climate control technology to heat and cool the interior of the building, maximising the amount of light entering the building*

without compromising energy efficiency' and mentions overhangs/sunshades, recesses, angled glazing or external louvers, however none of these are indicated on the drawings.

The proposal states the provision of '*natural ventilation to rooms – as patients may have little or no mobility, natural ventilation is to be integrated into each room to avoid any feeling of claustrophobia'* but no indication is given on how this is proposed to be achieved.

Other aspects, such as acoustic considerations, safety glazing, wind loading and maintenance are mentioned in the proposal's ESD section, but they seem to be related more to safety and maintenance than aiding in the creation of a green building.

NSW Health: Technical Series TS11 - Engineering Services & Sustainable Development Guidelines

The proposal fails to demonstrate how it meets the *NSW Health* key sustainable development aims and objectives of:

- a more innovative approach to engineering services design
- making buildings healthier
- reducing the impact of buildings on the environment
- reducing pollutants and greenhouse gas emissions
- comfortable and healthy indoor environment (in terms of thermal comfort, visual comfort and indoor air quality)
- minimising non-renewable resource consumption (e.g. energy, water) and environmental impacts (e.g. greenhouse, other air and water emissions, solid waste)
- cost-effectiveness over its whole life cycle.

The foundation of *NSW Health* and *Green Building Council* thinking and alliance lies in the incorporation of ESD principles at the design onset to achieve a green building. It is not about how a building once designed can be made to achieve a minimal star rating through stating broad concepts that can be slotted into the existing design as this proposal does. It is about designing and developing systems in the buildings that address short, medium and long term ESD issues. This consultant has failed to create integral systems that will deliver the best outcome. The options presented in this proposal are ad hoc and disjointed and have no real value or ability to deliver the best outcome for the site or the environment.

Both *NSW Health* and the *Green Building Council* see the primary value of the Green Star tool as one that enables the building's passive design and engineering services to complement each other through an integrated design process involving all disciplines right from the beginning, to achieve the sustainable design outcomes for the whole building. The approach of this proposal is in direct contrast to this. It takes the attitude of outlining initiatives in its ESD Concept Report, then stating that they "*have been broadly adopted and incorporated into the other specialist documentation to enable a cohesive and rational approach to achieving an Ecologically Sustainable Development*". However, there is little evidence of meaningful ESD measures in the plans for the development. The proposal's building form, floor plate size and E-W orientation does not incorporate passive design considerations or integrated design systems to minimise the intervention of engineering services and to minimise energy use.

The proposal has not provided evidence of the proposed use of environmentally sound materials (with minimal impact on the environment, minimised use of non-renewable resources, non-hazardous substances, minimised impact on indoor air quality and high recycled/recyclable content).

The proposal has not demonstrated responsibility according to the NSW Health Guidelines which aims to achieve greater definition of engineering services at an earlier stage of the

project and to clearly define the responsibilities of both user groups/briefing teams and the engineering designers. Neither has it sought to justify variation from the guidelines.

NSW Health requires a minimum 4 star Green Star rating for all healthcare projects valued over $10m. This 4 star requirement is a base rating aimed at smaller healthcare facilities that are at the lower end of the spectrum and do not have the capacity in terms of economy of size to meet the higher 5 or 6 star rating. Such projects would include developments that may cost between $10m to $100m, that may have restrictions on them such as small sites, congested locations, limited aspect and limited finance that is needed to ameliorate poor sites.

The SAN hospital is a $283.3m + GST, about 30 times greater than the $10M threshold. In addition to this, it does not have any major constraints that justify the absence of significant measures in building sustainability being incorporated into the design.

The size of the proposed hospital development, its use, the necessity for mechanical systems to control the internal environment, the reliance on high energy usage to ensure the high quality functioning of the institution to name a few, will create an extremely high burden on energy and water usage at the least. Equally, the sheer size of the development will have a very high emissions output even if the best air conditioning/heating units, low voltage lighting etc are utilised. The Green Star requirement does not mandate that all systems across the existing hospital be altered, therefore it can be assumed that the old hospital will retain its low level of sustainability. In light of this it is imperative that the new development aim for a minimum 5 star Green Star rating to ensure that meaningful systems are incorporated into the proposal.

Further, the reliance on management systems to achieve a 4 star Green Star rating means that energy and water consumption are not minimised. The proposal therefore fails to comply with the Director General's requirements in this regard.

Serious and genuine consideration must be given to the long term impacts of this large institution, and due responsibility must be taken to address the NSW Government's aims at reducing emissions as stated in the *NSW Government Energy Efficiency Strategy* and the *NSW State Plan 2000.*

Integrated Water Management Plan and minimisation of water use

The MUSIC model includes a 150 000 litre rainwater tank for Area 2, and a 50 000 litre tank for Area 1. These tanks are not dimensionless. It is not clear where they are to be located and what the captured rainwater is intended to be re-used for. Items WAT-3 and WAT-6 of Table 2 of the ESD Report state that landscape irrigation is proposed (since a xeriscape is not listed in the Landscape Design Statement) and that non-potable water may be used to cool medical and lab equipment. Elsewhere in the documentation, toilet flushing in selected areas is mentioned.

Issue 7 of the Director General's Requirements requires an Integrated Water Management Plan which details any proposed alternative water supplies and proposed end uses of potable and non-potable water. The Stormwater Management Plan does not detail the proposed end uses of potable and non-potable water, but just states:

> *'We expect that daily usage can be achieved via a number of various uses such as irrigation of lawns and other landscaped areas, hosing in wash down areas and for toilet flushing in selected areas. The appropriate uses of rainwater will be determined during the detailed design phase of the project in conjunction with the Hospital to achieve the water quantity objectives for the project.'*

The Environmental Assessment states: "Non potable water will be used for irrigation purposes and sanitary flushing throughout the CSB extension." The Environmental Assessment does not specify the re-use of the rainwater in the 50 000 litre tank for Area 1.

A development application for a single dwelling, accompanied by a BASIX Certificate, is required to show proposed rainwater tanks on the DA drawings and list the re-use commitments. There should be no reason why a large development such as this should not also show the locations of proposed rainwater tanks and list the proposed re-use purposes.

The approved Statement of Commitments for the concept plan includes a commitment to investigate sewer mining opportunities. No reference to sewer mining has been found in the documentation, and it is therefore assumed that no such investigations have taken place. This should be undertaken as part of the preparation for any Preferred Project Report, as it has the potential to significantly reduce water use for the life of the project.

Permeable pavements for car parks at grade would have been desirable as part of a water sensitive design.

Aspects of the IWMP related to drainage are considered under DGR 12 – Drainage.

Green Star Rating

A well known consultant has been employed to consider the ESD of the hospital development. It is recognised that they have achieved a 6 star Green Star rating for an office interior project in Melbourne, and taken further initiatives in line with the Green Building Council. In light of the company's competence in this area this submission is extremely disappointing as it fails to reflect the ethos and approach that the Green Building Council have to the design of Green Star rated projects.

The proposal mentions the use of the Green Star Healthcare and Green Star Education Tools to achieve ESD within the proposal. The Green Star Office Interiors Tool should also be utilised in the internal fitout of the new and existing buildings.

The proposal mentions seeking confirmation from *NSW Health* as to whether the Green Star *Design Rating* or the Green Star *As Built Rating* is required; however the achievement of the latter without the former is unlikely at best. The Preferred Project Report should be submitted with the relevant Green Star Design Rating from the GBCA. A condition of consent could be imposed to require the As Built Rating prior to the issue of an occupation certificate.

The Green Star Rating Healthcare Tool has been developed to design systems that deal with environmental, social and economic sustainability of such developments, and this is the reason only qualified *Green Building Council* recognised consultants are used to create submissions for buildings seeking Green Star rating. Without a qualified consultant doing this in accordance with their training, any ESD effort is tokenistic and not in line with the NSW climate change strategies which Green Star is seeking to address.

The proposal mentions items such as solar hot water collectors, but there is no evidence of them in the design or documentation, further, the ESD documentation tells us how things could be done but does not explain how this development will fulfil those criteria. There is no evidence of any overall ESD concept, nor the integrated servicing that a development of this size requires.

The Green Star framework establishes nine categories of ESD principles with points being awarded across each category for credits that are incorporated into the project. The nine

environmental categories are indicated on the horizontal axis of Figure 3 below. Figure 3 (from the proposal's ESD report)

Figure 3 from the consultant's report illustrates how the assessment across each of the Green Star categories. The dark blue is the maximum achievable within each category. The dark grey indicates what this development is achieving. The light grey are the ambiguous 'possibly achievable' areas and cannot be counted on at this stage. When Green Star principles are integrated into a building development it is clear what the measures achieved will be with a small margin of extras. Where no systems are integrated into the design there is no real measure for what can be achieved. At this stage, the level of documentation should have clear indications of what the incorporated systems are, where they are located and how they will function.

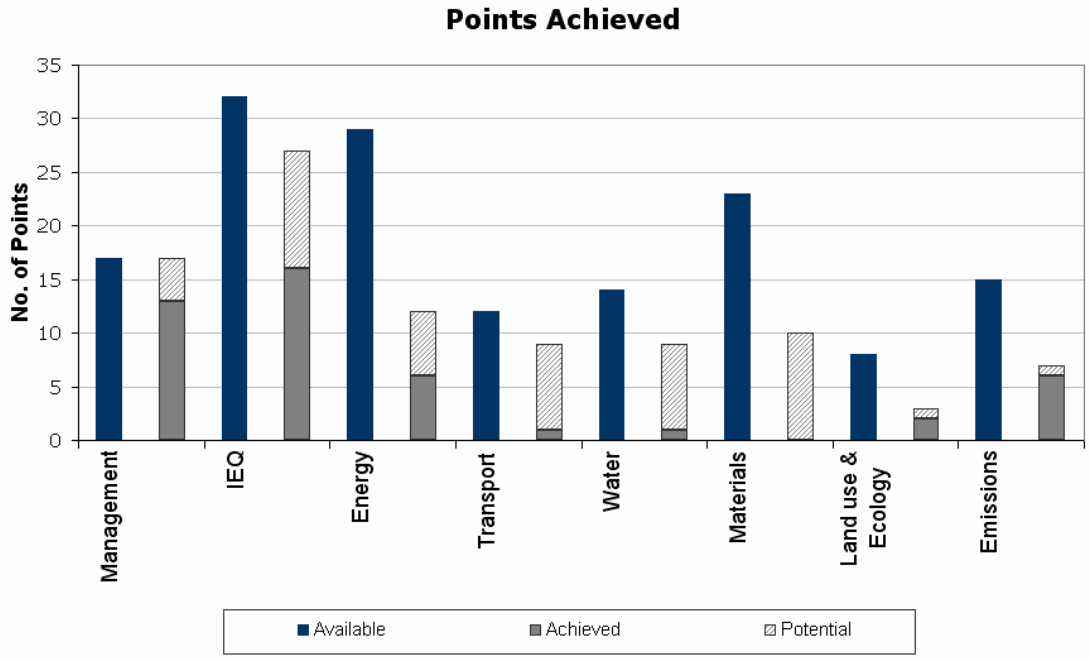


Figure 3 *The projected points by category.* (source: pg 6 App K)

The Green Star tool also allocates additional points in the following categories:
- Innovative strategies and technologies
- Exceeding Green Star benchmarks
- Environmental design initiatives

This development makes no attempt in these areas and has scored zero points for these.

The proposal's ESD report assessment has stated "*that 27 points can be achieved with little or no additional impact on the project*" with an additional 32 "*points to be confirmed*" being identified as potentially achievable across the eight categories. The 27 points required for the 4 star Green Star rating appear to have been achieved by designing a building apparently devoid of any consideration of integrated systems and design features to create a sustainable building, which is far from the intent of both *NSW Health* and *Green Building Council*. This assessment appears to have been done on a preconceived design whose primary aim appears to be the achievement of accommodation required to maximize the financial value of the facility, and little consideration of the long term and broader costs to the environment or to the ongoing running costs to the hospital.

It is concerning that the highest proportion of Green Star points are gained only through credits for 'management' and 'indoor environmental quality' categories rather than the design

of the buildings within the landscape. While the incorporation of these measures is supported, the important areas of alternative energy production, water usage reduction, material selection, transport and environmental considerations all score extremely low, as indicated in Figure 3. Given the scale of the development, the likely life and cost of the structures, the number of patients and other people using the facility and the significant opportunities within such a site, and the on-going financial running costs from energy and water use, this is unacceptable. The most cost-effective method for the long term, is to ensure that the credits are achieved in the first instance through building and landscape design, as these features, achievable at a reasonable cost in the short term, would be likely to be prohibitively expensive to retrofit.

A Design Rating of 5 star Green star Design rating, incorporating high energy, water, materials and transport credits, should be the absolute minimum standard.

DGR 8: Contributions

- Address Council's Section 94 Contribution Plan and/or details of any Voluntary Planning Agreement.

As a hospital this development does not fit the categories of contribution in the 2004-2009 Contributions Plan and are not in the area of the Town Centres Contributions Plan. The site provides childcare and car parking which are the only elements still live for commercial development in the 1993 Contributions Plan.

DGR 9: Contamination

- Demonstrate compliance that the site is suitable for the proposed use in accordance with SEPP 55.

The two reports which have been reviewed are:

1. Report to Sydney Adventist Hospital LTD on Stage 1 Environmental Site Assessment for Proposed Hospital Upgrade development (Stage 1) at 185 Fox Valley Road, Wahroonga. By Jeffery & Katauskas P/L
2. Contamination Assessment : Sydney Adventist Hospital, 185 Fox Valley Road, Wahroonga NSW. Prepared by Coffeey Geotechnics P/L for Taylor Thomson Whitting (Project reference: GEOTLCOV23462AA)

Jeffery & Katauskas report:
This report was developed to assess the likelihood of contamination of the subsurface soils and ground water for Stage 1 of a proposed hospital upgrade. The investigation was confined to two separate areas of the hospital grounds. Investigation area one included the central north visitors car park located to the north west of the San Clinic and the area between and to the north west of the San Clinic and A.K. Tulloch Theatre Block, into the central north visitors' car park. Investigation area two was located in the north section of the hospital grounds and included an existing car park area and surrounding unpaved areas.

Potential contamination at the site identified in the report would be anticipated to be associated with:

- Potentially contaminated, imported fill material
- Historical use of pesticides in areas of former agricultural use
- Migration of contaminants associated with storage of fuel in the central section of the site.

Findings in the report include:
- An above ground fuel storage tank (possibly containing diesel) was located to the east of the physiotherapy/maternity building, adjacent to the emergency bays.
- Information provided by site staff indicated that a former bowser and underground fuel storage tank was located in the vicinity of the north-west section of the Maintenance and Engineering Building. However, no evidence of the bowser, storage tank or any other fuel infrastructure was identified during the site inspection.
- The stratigraphy of the site is expected to consist of residual clayey soils overlaying relatively shallow bedrock. Based on these conditions groundwater is not considered to be a significant resource in the immediate area of the site.

The boreholes drilled for the investigation have enabled an assessment to be made of the existence of significant, large quantities of contaminated soils. The conclusions based on this investigation are that, while major contamination of the site is not apparent, problems may be encountered with smaller scale features between boreholes.

Coffey Geotechnics Report
This report was developed to carry out a Geotechnical Investigation and Contamination Assessment at the SAN hospital site. The report identified four areas where works were proposed:

Building 1: A new five story multi-deck car park to be built in the same area as an existing car park at grade
Building 2: A new four storey reinforced concrete framed building to replace an existing car park at grade
Building 3: A new building with possible three storey basement
Building 4: An existing three storey brick building with modifications to load bearing internal walls within the eastern corner. The building will appear unchanged from the outside.

Findings in this report include:
- No obvious evidence of contamination was noted and samples selected for analysis for a suite of potential COCs did not record concentrations exceeding the adopted SILs for a commercial land use.
- A direct assessment of the groundwater quality was not made as part of the study. Based on the soil laboratory results, the anticipated depth to ground water and lack of nearby contamination sources, the likelihood of groundwater contamination adversely affecting the proposed development is considered low.
- No breaches or notices have been issued for the site under Section 308 of the Protection of the Environment Operations Act 1997.
- Site history information suggested that fuel or chemical storage was unlikely within or in very close proximity to the proposed building sites.
- A WorkCover search of the Stored Chemical Information Database for licences to keep dangerous goods indicated that a licence (No. 35/0174066) for the SAN hospital to store a number of dangerous goods at various locations throughout the SAN hospital for hospital related activities. The closest (non gaseous) storage area to the current study area is approximately 100m.
- Fill of unknown origin and quality: Buildings 1 and 2 have a low likelihood of contamination from fill and Building 3 has a low to moderate likelihood of contamination
- Based on anecdotal evidence and a review of historical aerial photographs, the western areas of the study area appeared to possibly have been previously used for agricultural purposes such as the growing of crops. Low likelihood of contamination due to the activities and also due to the time lapsed since these activities took place.

Based on the results of this study it is considered that the potential for the areas assessed to be affected by land contamination that would adversely affect the proposed de elopement is low and therefore the areas are considered suitable for proposed commercial use.

Conclusion
Each of the reports conclude that the likelihood for the areas assessed to be affected by contamination is low and the sites are suitable for the proposed use.

Key recommendations from these reports include:

- Any unexpected problems during the proposed construction activities areas that are encountered between boreholes should be immediately inspected by experienced environmental personnel.
- During demolition and excavation works, the site should be inspected by experienced environmental personnel to assess any unexpected conditions or subsurface facilities that may be discovered between investigation locations.

However, neither of these reports appears to meet the requirements for a phase 2 contamination assessment under SEPP 55 – Remediation of Land, as required by condition B13. It is recommended that the Department of Planning seek the advice of a contamination specialist in relation to the adequacy of the contamination reports.

DGR 10: Heritage

- Consider any potential impacts of heritage, including a Heritage Impact Statement in accordance with the NSW Heritage Office publication "Statements of Heritage Impact".

Heritage significance
The hospital site has been identified as having strong attachments to the local environment and a strong sense of place. The following is taken from the Heritage Impact Statement (HIS) for the proposal:

The opening of the Sydney sanitarium, not the Sydney Adventist Hospital, represents the beginning of the health industry in the northern suburbs of Sydney. The Sanitarium was the first hospital in Australia to train male nurses, and played an important role in developing alternative approaches to good health, based on the Seventh Day Adventist philosophy of healthy living and holistic wellbeing. The extension of the environment to include accommodation for the medical and church community on Fox Valley Road; the timber-framed weatherboard cottages, villas, hostels, and, the Administrative Headquarters, was a contributing factor in the establishment of the township of Wahroonga. The Seventh Day Adventist community continues to have a strong attachment to their local environment and a strong sense of place.

The historic buildings within the site are important in demonstrating aesthetic characteristics which are uncommon in the local area. In particular, the historic Shannon, Bethel, Administrative Headquarters, and the residential and accommodation buildings on Fox Valley Road are demonstrative of the historical development of the Seventh Day Adventists in Wahroonga, as well as the prevailing tastes at the time of their construction. The archaeological resources associated with the Sydney Adventist Hospital site have a high degree of integrity and a high research potential. The artefact assemblage at the site has the potential to provide an insight into the daily lives of the people who lived and worked at the hospital, school and church as well as those who used services provided by the hospital and mission accommodation.

Administration Building
The site contains one listed heritage item at 146 – 148 Fox Valley Road, the Administration Building on opposite side of road from the hospital. The proposal is acceptable with regard to the impact on the Administration Building.

Shannon Wing
The Shannon Wing, built in 1920 represents an early phase of expansion of hospital services. It currently houses offices. It is a handsome tree-story face brick building, originally with a veranda on at least three sides. Brick pillars support the first floor veranda while the upper floor veranda and roof is supported by turned timber columns. The upper verandah has a pressed-metal ceiling, deep timber fascia and the balustrades are simple timber posts. The building retains much of its original fittings and fixtures, including moulded plaster ceilings, staircase balustrades, windows, floors, skirting boards, and some doors.

The HIS submitted with the application states the building has lost its original setting and context and the integrity has been eroded by a series of additions, including removal of the balcony wrapping around the eastern façade, to allow construction of the Clifford Block, the removal of the roof level, replacement roofing, the portico and Radiation/Oncology additions, and covered links to the other hospital buildings.

It is agreed that the demolition of the Shannon Wing is supportable and that photographic recording is appropriate. The submission includes an archival photographic recording prepared in accordance with the Heritage Council guidelines.

Bethel House
This building is probably the earliest surviving hospital building on the site, dating from 1915. It was built as a maternity building but has been modified and re-used as a museum for the hospital's collection.

The HIS states that its original setting, context and integrity has been compromised and supports its relocation on this basis.

While it acknowledged that Bethel House is not listed as a heritage item, it is important to the site and its re-use on the site is encouraged. It is a lightweight framed building and easily capable of relocation on the site. Conservation principles discourage relocation of buildings as the location and setting of a building is part of its significance, however in this case it is proposed to retain it on the hospital site and undertake conservation works. Its relocation in the circumstances can be supported.

The existing position of the building allows it to be viewed from recreational and residential areas. However, the proposed location does not consider its curtilage. It appears to be relocated to a 'left-over' space. It is recommended that Bethel House be relocated to a more prominent place on the hospital site, for instance near a pedestrian entry to the site.

Photographic Archive
The EA states that:
An archival photographic recording of 'Bethel' House and the Shannon Wing has been completed in accordance with the Statement of Commitments for the Wahroonga Estate Concept Plan. It is considered that this adequately mitigates the impact of the relocation and demolition. A Copy of the Archival Recording Report is attached as ***Appendix P****. Hard copies of the photographs are provided for the public exhibition of the Project Application. Digital copies are also submitted with the documentation package.*

While the Interpretation strategy (Appendix Q) contains some photos, the list of photos outlined in Appendix P was not provides as part of the exhibition. The statement of commitments has not been met in this regard. It is recommended that they be included in the Preferred Project Report.

Archaeological resources
There is a high potential for archaeological resources on the site. A detailed archaeological survey should be prepared and all excavation works undertaken with appropriate archaeological management. It is recommended that an archaeological management plan for the site be prepared.

Agricultural/natural setting
The agricultural use of the site and its natural setting was important a key component in the Seven Day Adventist concept of wellness and healing. While the agricultural use of the site ceased many years ago, the setting of the site in a treed and landscaped environment remains. As proposed the development includes large multi level car parking structures that have considerable visual impacts on the landscape quality of the site. While necessary, they should have minimal impact on the landscape and it is recommended that they be located below ground.

The SAN could also investigate the inclusion of community gardens, not only for the benefit of improving links with the community and potential good quality food supplementation for the hospital, but also for its connection to the past.

Interpretation Strategy
The Wahroonga Estate Redevelopment Preferred Project Report and Concept Plan, dated January 2010 includes a commitment to provide an interpretation strategy. It states:

An Interpretation Strategy is to be prepared for the Sydney Adventist Hospital and associated buildings. It is to refer to identified historic themes and provide guidance in the development of a meaningful interpretation of the site. Contributing interpretative elements, including archival photographic recording and recovered relics, are to be housed on site, preferably in the "Bethel Museum".

The Interpretation Strategy Plan was prepared by a recognized heritage consultant and included in the Masterplan submission for the Part 3A Wahroonga Estate Redevelopment.

The report makes a series of recommendations that interpretative devices should include:

- Relocated Bethel House with museum
- Provision of interpretative signage and sculpture elements in the perimeter open space network.
- Relocation of the memorial sundial, rose garden and memorial element from Jacaranda Lodge.
- Grid planting of small trees to reflect the previous vineyard and orchard.
- Interpretative text fixed to mesh at southern façade of the car park
- Interpretative panels, pavers, mosaic, mural or text along the new concourse
- Naming strategy – "Shannon" for the Stage 3 Ward Building
- Graphic etching near the main public entrance
- Plaque or paver graphics
- Interpretative panels or pavers in foyer or entrance of stage 2 Faculty of Nursing and proposed Stage 3 Shannon building
- Brochures in reception foyer area
- Displays of archaeological artefacts in publicly accessible areas
- Mural depicting Sanitarium activities/landscape
- Re-issue of "The San" to be available for sale
- Online historical material

In general, these are supported. However the treatment of the southern side of the multi-deck car park as an interpretive element is considered inappropriate.

The first four strategies need to be clearly resolved and identified on the plans in the Preferred Project Report.

DGR 11: Aboriginal Heritage

- The EA shall address Aboriginal Heritage in accordance with the Draft Guidelines for Aboriginal Cultural Heritage Impact Assessment and Community Consultation 2005.

The site contains one and only identified aboriginal site (in vicinity of Coups Creek). This will not be disturbed as part of this development.

However, the potential for impacts from erosion and sedimentation from the proposed works has not been considered, particularly where there are earthworks adjacent to the bushland. This needs to be addressed in one of the elements in the *Hydrology and Nutrient Management Plan* that is to form part of the required *Biodiversity Management Plan* and the *Conservation Interface Plan*. It is unclear whether the proposed stormwater and construction management plans are consistent with these plans. It is not appropriate for these impacts to be addressed at construction certificate stage.

Similarly any increased pedestrian activity as a result of the intensified use of the site must be considered in the *Management Plan outlining public access and impacts on the conservation land*, which is to form part of the *Biodiversity Management Plan*. In the absence of these plans, and details in regard to the extent of earthworks, the impact cannot be adequately assessed.

DGR 12: Drainage

- Drainage issues associated with the proposal including stormwater and drainage infrastructure; And
- Detailed plans of the proposed erosion and sediment control measures during demolition, construction and operation.

The following comments are generally limited to the Stormwater Management Plan and Civil Engineering Report, both by C&M Consulting Engineers and other documents as relevant to this issue.

The reports and plans do not contain the level of detail which would be expected of a development application lodged under Council's DA Guide. Therefore the comments below are of a broad nature and are based more on what is not included than on what has been included. Also some apparent inconsistencies are highlighted.

Water management
Under Council's DCP 47 *Water management*, the site is Location B (drains to a watercourse), however given the setback requirements of Council's Riparian Policy, new direct connections to Coups Creek or its tributaries would not be encouraged. Therefore effectively, the site is Location C as stated in the Stormwater Management Plan.

A Category 2 watercourse flows from the area behind the houses on Comenarra Parkway. This is mapped on Council's Riparian Map. The bioretention basin discharge from Area 1 is shown as being a level spreader near this watercourse. No details are given to show the location of the proposed level spreader in relation to the watercourse. A dispersal trench should be provided instead of a level spreader, to limit seepage into the riparian area. Opportunities for remediation of the riparian zone should be taken.

The Civil Engineering Report states that internal piped stormwater drainage system will be designed for 20 year ARI event. This is not consistent with Section A7.1b) of DCP 47 which states:

'The piped property drainage shall capture and convey the 50 year ARI storm runoff…'

The Stormwater Management Report states that OSD is provided to limit flows to pre-development (ie present conditions, not pre- any development) flows, and the Flora and Fauna Report endorses this approach. Significant weed growth is noted in the creek lines etc though, so should the aim be to restrict discharges even further?

The Stormwater Management Plan also refers a number of times to *'the proposed Biodiversity Management Plan'* eg:

'Rainwater retention and re-use for this project is proposed and will be an effective measure in reducing the frequency and volume of stormwater runoff post-development. This is consistent with the objectives of the proposed Biodiversity Management Plan for the area'.

However:
a. Consistent details of the proposed rainwater retention and re-use are not included in the documents.
b. The Environmental Assessment states "The Biodiversity Plan is continuing to be progressed", so it is not clear how the objectives can be known at this stage.

Some sort of path around the new ring road is shown on the Landscape Plan but not on the Concept Stormwater Plan (sheet 2 of 3 Drawing C602). This path could affect the proposed bioretention basin.

Is there gravity fall from the new Area 2 bioretention basin to the stilling basin? Are slope stability issues likely to arise from this new basin in the steep bank? Where is the outlet from the stilling basin?

All existing and proposed outlets should be shown. Where a direct point discharge into bushland exists, then a dispersal trench or raingarden or similar device should be provided. The feasibility of such devices may depend on the gradient of the downstream land.

The landscape plans fail to incorporate the bioretention basins. In fact the basin to Area 4, which is stated in the Stormwater Management Plan to have an area of 100 square metres, is shown in an area which contains a number of existing trees. The construction of the basin and its subsoil drains would result in the removal of all the trees in that area. This is not addressed in the Landscape Design Statement.

The area which is not included in the Catchment Plan, which includes the existing CSB, Clifford, existing SAN clinic, existing maternity and the school, must currently be draining somewhere – is this going to be affected by the new works? If these areas are connected into the existing or reworked bioretention basins, then how will their function be maintained?

Under Section A5.3e) of DCP 47, the typical bioretention basin section would require childproof fencing if a depth greater than 300mm were proposed, since the side slope is shown as 1 in 3 (33%).

Rather than the growth centres commission targets, the proposal should address the targets for pollutant reduction in Council's DCP 47 – Water Management. It is noted that the Civil Engineer's Report by C & M Consulting Engineers Pty Ltd recommends that the statement of commitments should include:

'..Stormwater Quality Improvement Devices (SQIDs) will be designed in accordance with Ku-ring-gai Council's requirements for pollution reduction'

but the proponent's statement of commitments does not include this commitment. Development of this scale should be striving for the maximum possible benefits.

A KPI in the Waste Management Report is "No runoff directed into the Helena River" – should perhaps refer to Coups Creek?

Topsoil
Stockpiling and re-use of topsoil is a basic requirement of many specifications (eg RTA), yet no topsoil stockpiles are shown on the Concept Sediment and Erosion Control Plans.

There is an inconsistency between the ESD Concept Design report and Morris Bray Architects Waste Management Report in relation to topsoil. Item ECO-1 of Table 2 in the ESD Report states "this credit requires a careful study into the quantity of topsoil present on site and a management plan describing the extent of construction works and its effect on topsoil. Plan must demonstrate how the integrity of the topsoil will be protected throughout the works."

The Landscape Design Statement does not reference stockpiling and re-use of topsoil even though it has a section titled "BASIX and ESD Principals (sic)" and the Civil Engineering Report also does not commit to any re-use of topsoil but refers to the EIS report, which states that excavated material may generally be disposed of as VENM. The Notes on the Concept Stormwater Drainage Plan Sheet C100 state "Surplus material including topsoil shall be removed and disposed of lawfully off site".

DGR 13: Flooding

- An assessment of any flood risk on site in consideration of any relevant provisions of the NSW Floodplain Development Manual (2005) including the potential effects of climate change, sea level rise and an increase in rainfall intensity.

The findings of the Stormwater Management Plan that the site is unlikely to be affected by flooding of Coups Creek are supported, even taking into account future sea level rise and increase in rainfall intensity.

DGR 14: Bushfire

- Demonstrate compliance with the relevant provisions of Planning for Bushfire Protection (PBP) 2006.

There are a number of concerns in relation to bushfire risk, and compliance with Planning for Bushfire Protection, 2006.

Evacuation

- Development will require a Bush Fire Evacuation Plan (BEP) as identified in clause 46 of the Rural Fires Regulation 2002

- Reference required to AS4083 -1997 – Planning for emergencies – health care facilities

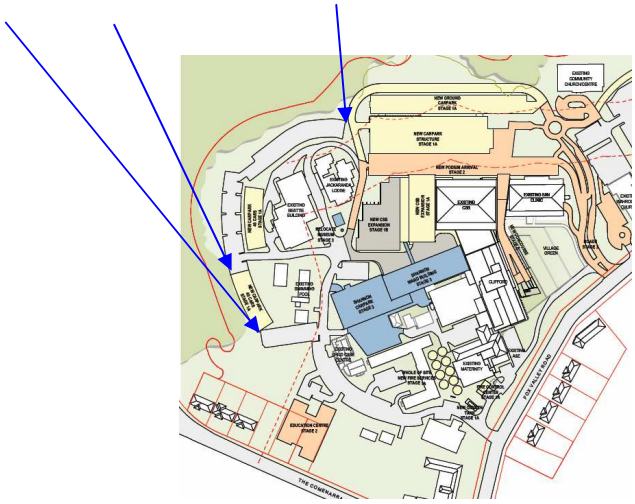
- Need to consider possible safe refuge areas should there be a need to evacuate.

- Evacuation constraints within this site have been recognised through mapping within the "Bushfire Evacuation Risk Map" (2008). Whilst this map applied directly to Seniors Living and Dual occupancy development, the importance and constraints of evacuation within this area need to be addressed. This should include whether evacuation will be on site or off site. Should off site evacuation be required then consideration of road capacity to facilitate this action should be addressed.

- Plans must show how buildings will meet the structural requirements to justify the conclusion that large scale evacuation of the Estate will not be needed in the event of a bush fire.

Access and egress for emergency vehicles

- The proposed car parks and access roads form a good perimeter access around the hospital and serve to provide additional defendable space from the bushland interface. Council requests that the additional car parking provided to the west of the site (on the western side of the pool) should have through access to form a continuous thoroughfare for emergency vehicles. Similarly the car parking located behind Jacaranda Lodge should contain a similar thoroughfare to ensure that emergency vehicle response is not compromised. The new carpark access road should facilitate emergency access, through-flow from the existing carpark (as shown below). This access could double as a recreation trail.



- Council would like to see two access points to the temporary car park to the north east of the site so that the safety of visitors/ patients or emergency vehicles are not compromised.

- All access ways should be well sign posted. With directions to Fox Valley Road and specified evacuation points.

- Along the perimeter roads Council requests that roll and kerb guttering be put in place that provides easy access for fire vehicles to access the Asset Protection Zone (APZ) and bushland interface.

Construction standards

- The construction standards of the proposed development need to be reviewed to ensure that recent changes to Australian Standard AS3959 – *Construction in Bush Fire Prone Areas* have been taken into account.

For example - the report states (pg 46):
"The core hospital component of the Stage 1A, 1B; Stages 2 & 3 Hospital Development consists of buildings which are located more than 100 metres……there is no requirement to provide additional protection against burning ember impact on the structure however, smoke filters shall be fitted to any new air-conditioning system."

This is incorrect as the rating of <12.5kw/m2 developments still need to meet construction requirements of BAL - Low (AS3959 – 2009).
It is also noted that the north western corner of new CSB expansion (stage 1B), extends in to 100m APZ. Construction standards would therefore need to be increased.

- The new podium arrival stage 2 is located directly adjacent to (<10m from) the new stage 1A and 1B core hospital buildings. As such this podium should comply with the adjoining buildings required level of construction (BAL – Low).

- Car park construction (if retained adjacent to the bushland) needs to demonstrate that any proposed shielding devices and mesh to reduce radiant heat levels and entry of embers into the structure have the ability to withstand exposure to radiant heat.

Building foot prints

- Whilst at grade car and above ground car park areas provide open hard stand areas, and some buffer from radiant heat, it is considered that the natural setting of the site would be better respected through the provision of underground car parking. This would facilitate the retention of open space areas (managed as Asset Protection Zones for recreation, aesthetic and ecological buffer areas as well as defendable space).

- An alternate method of providing for fire access / perimeter roads for the hospital may be achieved through the extension of the proposed recreational trail located to the bushland side of the northern carpark (Landscape design proposal 005A) through to meet the road in the vicinity of the existing child care centre. To meet fire requirements, this recreational / fire trail should be a 4m wide (1meter on either side), all weather trail. This trail may be used as a recreational trail (including wheel chair access) for patients and visitors. Provision of non combustible seating would be recommended.

- Whilst the proposed multi storey car park would provide a radiant heat barriers to core hospital buildings, the existing APZ (separation) distances from unmanaged vegetation are considered to generally meet PBP 2006, APZ requirements (with the exception of the north west corner). If the separation distance were to comply with the 100m APZ for the entire building, a construction level of BAL low (requiring minimal construction constraints), would be adequate. Radiant heat protection from the multi deck car park would not be required.

- Increasing construction standards within the new CSB expansion (stage 1B and 1A) would further reduce the risk to these structures. Vegetation, such as gardens (rooftop or deep soil) in the APZ should be strictly maintained to not compromise the ability of the APZ to provide the intended protection.

- There are also some discrepancies between various maps are noted where additional car parking which has been proposed and has not been included on some maps. All maps should be revised to include the locations of the proposed car parks.

Landscaping

- On the Site Changes and Key Landscape Issues where it states that "New mass planting areas against the road will assist visual integration of the roadway with bushland…ensure

new planting is suitable in terms of bushfire management and safety requirements", should note: *'in accordance with APZ requirements'*.
- Development must demonstrate ongoing management of APZ's.

Fire Management Plan
- A Fire Management Plan is required as part of the Biodiversity Management Plan. It is not possible to assess consistency with this plan in its absence.

Oxygen tanks
- Oxygen tanks are considered a Class 2.2 non flammable non toxic gas. Oxygen is, however, required for combustion to take place (high concentrations of oxygen greatly increase the intensity and rate of combustion).

  The following construction requirements should be considered regarding oxygen tank location and design:
  - The structure should be caged / shielded to contain potential explosions and prevent/protect from combustion
  - Piping and connections to and from cylinders are metal.
  - The proposed location is 10m away from the physiotherapy / maternity ward, this distance is acceptable but should be no closer than 2metres, so that it does not act as a catalyst to combustion.

Static water supply
- The draft Statement of Commitments proposes static water supply tanks that double as potable water storage. However, for potable water the draft Statement commits only to a minimum storage of 3 hours for maintenance. Water from these tanks is therefore unlikely to be available during a bushfire.

DGR 15: Utilities

- In consultation with relevant agencies, the EA shall address the existing capacity and any augmentation requirements of the development for the provision of utilities including staging of infrastructure works.

The application has not indicated building service locations apart from the generic plant rooms and 3 new sub-stations indicated on the drawings. The documentation states that the applicant is yet to apply for formal indications, from Sydney Water or Energy Australia. The applicant needs to clearly state what the service requirements of the site are, so that they can be satisfactorily accommodated into the overall design.

Service elements should be shown on the plans as they may result in visual, environmental or safety impacts. For example the current placement of 3 substations on prime open space area in clear view, instead of underground within basements as is becoming commonplace with large buildings, is clearly unacceptable.

Similarly, it is unacceptable for any service elements such as water tanks and oxygen tanks to be placed above ground in full view of the surrounding areas of the hospital. Without definite indications of what infrastructure is required from the appropriate authorities, the result is likely to be ad-hoc and ill placed service elements that detract from the overall development.

DGR 16: Staging

- Details regarding the staging of the proposed development including impacts within the context of Sydney Adventist Hospital Campus and surrounding development

The Sydney Adventist Hospital project is the first stage of development that was approved by way of the Wahroonga Estate Concept Plan. It is our understanding that there are no immediate plans to advance any other elements of the Concept Plan at this stage.

Whilst a number of stages have been indicated, there are a number of issues that remain unclear. For example, it is not clear how the proposed staging of the hospital site maintains the serviceability of the existing on site and surrounding development such as the school, the church, on-site hospital buildings serviced by the existing internal roadways.

From the Wahroonga Estate Concept Plan, there is the indication that the main access road to the hospital will also share access with the proposed residential development and places of worship to the north-east of the site. Yet, the proposal does not clearly identify how the connection is to occur between the shared use of the road between the hospital and these residential precincts.

The proposal should show all retail, commercial, administrational and educational uses surrounding the site, both existing and proposed. Any retail or commercial uses that are directly linked with the hospital development, such as onsite shops/cafes, need to be included in the overall development staging, and hence associated transport/parking/pedestrian routes should form a part of the hospital Masterplan. The staging of adjoining residential areas should also be indicated. In this way these developments will be well integrated into the overall development upon completion.

Whether or not the multi-deck carpark is lowered or removed, the north-western perimeter road may not be required. With the creation of the new podium arrival area and its significant width, there is the opportunity to remove the north-western perimeter road and include that access way for large vehicles and emergency vehicles into a periphery section of the podium roadway. Fire trucks could use the widened recreation trail, as discussed under DGR 14.

The proposal should include details of measures to ameliorate potential impacts arising from the construction of the development, including management of vehicular and pedestrian traffic during construction. Details of staging of the development and methods of ensuring adequate safety, amenity and access for continuing uses should be included. Particular attention is to be paid to existing child care and school facilities near the site.

There is a lack of clarity in relation to the two proposed temporary carparks to the west of the site for 40 and 46 spaces. They are described both as temporary and as permanent. The following excerpt from the EA describes these as permanent, with the only temporary car parking the larger area to the north east:

- *Expansion of existing staff surface car parks to the west to provide an additional 86 spaces on a permanent basis.*
- *Provision of a temporary car park accommodating 258 cars during the construction of the staged development. This car park is located to the north east of the San Clinic and will be used by patients, visitors, staff and construction personnel. It is anticipated that it will be used for between four and seven years, depending on the final phasing of the restaged development.*

Provision of permanent at grade parking is not supported, particularly as there is a feasible option of providing all carparking underneath the footprint of substantial buildings that are being

constructed alongside the roadways and hard surfaces proposed for service vehicles and at grade parking adjacent to the hospital building.

The EA includes the following statement:
'It is acknowledged that the future development will be planned to enable the retention of the temporary car park until such time as the multi-deck car park is complete and sufficient car parking is available on-site to meet the demand generated by both the operational and construction activities'.

However, no statement was found about the staging of the demolition of these car parks. It is important that these temporary carparks be demolished on completion of the permanent parking, to avoid unrealistic expectations from the staff, visitors and the community in relation to the extent of permanent parking. The preferred project report should include this demolition in the staging plans and the demolition site plan. A clear plan and timetable for reinstatement of the land proposed for temporary parking to its original or permanent state must be included in the proposal.

Issues in relation to the adequacy of the number of car parking spaces in relation to the temporary car park, and the staging of development in this area have already been discussed elsewhere in this submission.

Also, the eventual timing of the redevelopment of the Wahroonga Estate may accelerate the timing for road upgrades, and therefore the staging of the SAH should be considered in conjunction with a staging plan for the Wahroonga Estate. Also, some of the intersection improvement proposals require acquisition of private land to accommodate localised road widening, and could be stifled by the landowners.

Whilst this proposal meets immediate and short to medium term needs, it is a given that the hospital will continue to grow as the general and aging population continues to increase and place demand on health facilities. Although the submission mentions this, no consideration is indicated in the design proposal. It is accepted that future growth would remain on the existing building footprint; however, of real concern is the current and future pattern of parking provision on the site. It is considered vital that this proposal provide substantial underground car parking that accommodates current and new workers, visitors, students, but that it is also designed to allow its expansion in the future.

DGR 17: Flora and Fauna

- Address impacts on flora and fauna, including threatened species, populations and endangered ecological communities and their habitats and steps taken to mitigate any identified impacts to protect the environment; and
- Consistency with Biodiversity Management Plan as required under the approval of Concept Plan MP07_0166 (as modified).

Blue Gum High Forest and Sydney Turpentine Ironbark Forest (STIF) (listed under the Threatened Species Conservation Act 1995) occurs within the proposed development site.

The flora and fauna assessment (Appendix V, page 6), states
'Retained vegetation resembles predominantly landscaped gardens and lawns. There is however a small occurrence of STIF and BGHF. These threatened communities exist within the subject site as canopy trees only (refer to Appendix B) and represent the state listing (TSC Act). It is anticipated that footprints of new constructions will generally not impact flora and fauna. It should be noted the position of the "new oxygen tanks" (Appendix C) are located among the STIF canopy

trees are indicative only. There is scope to relocate the tanks to miss these trees. Provided that these trees aren't removed there will be no impact upon native vegetation within the subject site.'

It is noted that the patch of STIF adjacent to Fox Valley Rd of the proposal includes both canopy species, as well as *Pittosporum undulatum* and *Dichondra repens* (based upon Ku-ring-gai's Mapping and Assessment of Key Vegetation Communities Across the Ku-ring-gai Local Government Area [2010]). However it is acknowledged that this area is highly disturbed.

However it is noted that the proposed new oxygen tanks and also pump room, some of the proposed new water tanks and associated underground utility services are located in close proximity to a stand of remnant trees (G41,50,51,52,68,69,70)from the Sydney Turpentine Ironbark Vegetation Community(STIF)including large Grey Ironbark – *Eucalyptus paniculata and Red* Mahogany *Eucalyptus resinifera,* and that the Landscape Design notes that *: Tree removal is likely required given the density of trees in this area.* This issue is also noted within the Fauna and Flora Report page 6 "Subject Site"

The Flora and Fauna Assessment (Cumberland Ecology, July 2010) fails to adequately address the impact upon STIF proposed by works within the eastern edge of the site. The report addresses the *"new oxygen tanks"*. It does not however address the creation of a Fire Control Centre as proposed within the Environmental assessment (URBIS, August 2010) and the Masterplan Overall Siteplan Stage 1A (Dwn no: A/EA-004), or the proposed pump room (as outlined within figure 13, of the fire assessment by Australian Bushfire Protection Planners Pty Limited, 2010).

The report states that provided these trees are not removed there will be no impact upon native vegetation on the site. This is misleading as impacts may occur through root damage resultant from construction of hard stand and other built assets as well as requirements to prune branches to remove leaf drop (fuel loads) from over / within built structures (such as the oxygen tanks). Access to these tanks from the access road should also be addressed.

These trees are large and prominent remnant native specimens and form part of the state listed endangered vegetation community. It is considered unacceptable to further compromise or remove them for this facility without properly exploring options for location of this facility outside of the tree protection zones of these trees.

Given the value of STIF within this area it is recommended that the oxygen tanks, fire station and pump house be located outside the canopy area of these trees.

The flora and fauna assessment has not addressed any impacts resultant from Asset Protection Zone requirements, along the western edge of the site, nor has it addressed the impacts of the earthworks along the interface with the bushland. As noted previously, these are expected to be significant.

The assessment refers to compliance with the Biodiversity Management Plan (BMP) (as required within the Director General Requirements), it is again noted that this BMP has not been made available and as such this is impossible to assess. A similar situation exists with the Conservation Interface Management Plan (required within the Controlled Action Approval granted by the Federal Department of the Environment, Water, Heritage & the Arts (DEWHA) in June 2010). The Conservation Interface Management Plan is required to address direct impacts within the development site and indirect impacts upon E2 lands. Provision of this plan is required to fully assess the impacts and proposed ongoing management for the site.

DGR 18: Noise and Vibration

- Provide a quantitative assessment of the potential demolition, construction, operation and traffic noise impacts of the project.

The *Construction Noise Impact Statement* prepared by Heggies dated 14 July 2010 indicates that both the proposed demolition and construction activities are likely to exceed the construction noise goals by clear margins, resulting in anticipated moderate noise impacts at the nearest noise affected residential receivers and high noise impact at the SAH.

The sites selected for assessment of noise impacts did not include the existing child care centre or the nurses' accommodation, which are to be retained under this proposal. The preferred project report should include data on the impact on these facilities, and specifically include consideration of this facility within any noise and vibration management plans and monitoring programmes.

The consultants have recommended as a solution, that a noise and vibration management plan be produced identifying reasonable and feasible noise mitigation measures to reduce the noise to acceptable levels. There is also a recommendation for noise and vibration monitoring during construction activities at the nearest and most impacted noise and vibration sensitive receivers during construction works. However, the proposed measures need to be considered for adequacy prior to approval of the proposal.

Should the Department not require this consideration at the Preferred Project Report stage, it is recommended that any conditions of development consent include the following or similar based on the consultants' recommendations:

- A specific noise and vibration management plan which covers all stages of construction and demolition works for the development must be developed by an appropriately qualified person, such as an acoustic engineer/consultant, and a copy submitted to the Principal Certifying Authority prior to the release of any construction certificate/s for the site. The noise and vibration management plan must incorporate all measures identified in Section 8 of the *Heggies* report dated 14 July 2010 as well as compliance with the NSW Industrial Noise policy and DECCW Interim Construction Noise Guidelines including setting specific hours of operation. A copy of the management plan is also to be kept on-site during all construction and demolition phases to provide guidance to the construction/demolition contractor relating to noise and vibration issues;

- Noise and vibration monitoring must be carried out by an appropriately qualified person, such as an acoustic engineer/consultant, throughout the demolition and construction works. Should the monitoring identify a major non-compliance with the noise management plan, recommended actions must be developed and provided to the project manager and construction/demolition contractor for their action. A copy of all noise and vibration monitoring results must be submitted to the construction/demolition contractor and project manager at weekly intervals for continuous monitoring; and

- The Project Manager and/or Construction/demolition Contractor is to provide information to the Hospital and surrounding residents of the nature of the work to be carried out as well as the expected noise levels and duration of the proposed works at least 7 days prior to the work being carried out. Contact details must also be provided and a log of complaints should be kept to ensure the noise assessment monitoring and any relevant recommendations for control measures address the community's concerns.

Noise – Operational phase
The *Acoustic Report to support Staged Alterations and Additions* by *Heggies* dated 14 July 2010 indicates that with appropriate measures in place the noise impacts from the operational phase will not result in unacceptable impacts on hospital patients and surrounding residents (Karen Boulter).

Again, if no specific measures are sighted prior to any approval, conditions of development consent could include the following or similar based on the consultant's recommendations:

- Specific noise control measures must be developed by an appropriately qualified person, such as an acoustic engineer/consultant, during the design stages to ensure that noise from all new noise generating mechanical equipment will meet the noise criteria when measured at the property boundaries. This includes the installation of appropriate noise attenuators; acoustic louvres; barriers; enclosures; careful consideration of the orientation of air inlets/outlets and items of plant; and mechanical isolation and other recommended measures in Section 7 of the acoustic report so that equipment is located away from sensitive receivers and residential premises. Details of the noise generating equipment to be installed and any required noise control measures must be submitted to the Principal Certifying Authority prior to release of the Construction Certificate.

- A compliance inspection including noise monitoring and assessment must be carried out by an appropriately qualified person, such as an acoustic engineer/consultant and a report demonstrating compliance with the NSW Government noise criteria must be submitted to the Principal Certifying Authority for all stages prior to release of the occupation certificates for each stage. The report should include an indication that any noise control measures recommended in the design phase have been installed.

- The operation of the premises must comply with the noise criteria of the:

(a) NSW Department of Environment, Climate Change and Water's (DECCW) *NSW Industrial Noise Policy* for intrusive noise and amenity criteria to protect both external and internal receivers. Where plant equipment is to operate continuously, the night-time criterion shall be the governing factor in terms of noise control treatment;
(b) NSW DECCW Environmental Criteria for Road Traffic Noise;
(c) NSW DECCW Environmental Noise Control Manual - Chapter 151 – Noise control guideline: Generators, Emergency in relation to noise from the Hospital's emergency generators; and
(d) The Building Code of Australia and relevant Australian standards for recommended internal sound levels and reverberation times for building interiors to protect the sensitive receivers inside the development.

It is understood, as per the acoustic report, that the route for emergency vehicles and the proposed service vehicle routes are unchanged and that the loading dock is well shielded by Hospital buildings. It is also understood that helicopter flights are infrequent and unlikely to change. In regards to traffic:

- Traffic noise generated by the operation of the premises must comply with the NSW DECCW's "*Environmental Criteria for Road Traffic Noise*" and not lead to an increase in existing noise levels of more than 2 dB;

- Appropriate hours should be considered in any noise management plan for the site limiting the times that service vehicles/loading docks are used and visitor/patient vehicles are allowed on-site along with appropriate noise mitigation measures to protect the amenity of neighbouring residents; and

- Helicopter operations should be conducted with due regard to the Air Services Australia – *Environmental Principles and Procedures for minimising the impact of Aircraft Noise* (2002) and the *Flying Neighbourly Guide* (USA) and any relevant NSW Government legislation.

DGR 19: Waste

- Identify, quantify and classify the likely waste streams to be generated during construction and operation;
- Describe the measures to be implemented to manage, reuse, recycle and safely dispose of this waste;
- Describe the measures to be implemented to manage the disposal of nuclear waste, if required; and
- Describe the measures to be implemented to manage the disposal of contaminated and potentially contaminated biological and sewage waste.

All waste and recyclable material generated by the premises, including biological waste, hazardous and non-hazardous substances, must be appropriately stored in an enclosed area which is separated from public areas and view and kept clean at all times. The commitment in the draft Statement of Commitments in regard to waste are supported.

DGR 20: Hazards

- An assessment against State Environmental Planning Policy No 33 – Hazardous and offensive Development; and
- A description of the proposed storage, use and management of any hazardous material and measures to be implemented to manage hazards and risks associated with the storage.

The proposal includes a Biological and Trade Waste Review and Waste Management Report. The EA claims that SEPP 33 does not apply to the site. There does not appear to be a detailed breakdown of the quantities of hazardous materials in relation to their location to justify this conclusion.

Of particular concern is the location of a number of oxygen tanks above ground, within a treed area on bushfire prone land. This issue is further discussed under DCR 14.

DGR 21: Consultation

- Undertake an appropriate and justified level of consultation in accordance with the Department's Major Project Community Consultation Guidelines October 2007.

To comply with the conditions of consent, consultation with DECCW, DEWHA and local councils should have taken place to ensure that the Biodiversity Management Plan was in place prior to the lodgement of the hospital proposal. This needs to be completed prior to the lodgement of any preferred project report. This is further discussed elsewhere in this submission.

The inclusion of the detailed comments from the various agencies as part of the consultation for this stage of the project would be helpful.

Council is willing to discuss the key issues raised above with the Department and representatives from the SAN, to assist in the preparation of a preferred project report.

Future Planning (refer to DGR 2)

- Show due consideration to future expansion and how the inevitable future development may be executed in a manner that is orderly and beneficial to the site by building on the structures and infrastructure now being proposed, so that the requirements of the EP&A Act can easily be met with ongoing development
- Consider future planning and innovative ways of providing garden and open space access to users of highrise buildings, such as rooftop gardens
- Provide service systems that address sustainable energy and water usage, particularly in light of the inevitable future pressures on, and greenhouse impacts of these systems

Documentation (refer to DGR 1, 2, 3, 4, 5, 6, 10, 11, 12)

- Inclusion of the detailed comments from the various agencies as part of the consultation for this stage of the project would be helpful
- Provide documentation to show the relationship between the future development under the Wahroonga Estate Redevelopment Concept Plan approval and this hospital proposal
- Provide drawings clearly indicating existing ground levels, new ground levels, spot levels inside and outside buildings, finished floor levels, finished levels of parapets, flat roofs and ridge levels
- Provide existing and proposed ground levels to all carpark areas and roadways, including all temporary parking and roads
- Provide heights of retaining walls or berms
- Show existing and new contours
- Show spot levels within landscaped areas such as the Village Green
- Cross-reference drawings with each other and with written material
- Provide plans at a scale sufficient to understand the overall layout of the buildings by floor, in relation to each other, 1:400 may be suitable
- Provide detailed evidence showing compliance with condition B13 of the consent for the Wahroonga Masterplan
- Provide information on gross floor areas by usage type, specifying location of that use
- Provide details of gross floor area for retail uses calculated separately from hospital uses
- Provide a Phase 2 Detailed Site Contamination assessment
- Provide the required Construction Management Plan
- Show how the existing and proposed/expanded drainage bio-retention basins will be integrated into the landscape design
- Provide detail on landscape planting showing use of native locally occurring species form the two local endangered vegetation communities which occur nearby, (Sydney Turpentine Ironbark Forest and Blue Gum High Forest)
- Provide detail on earthworks necessary for the construction of all on grade carparks (both temporary and permanent) and associated perimeter roads
- Provide *Tree Management Plan/Tree Protection Plan* and *Environmental Site Management Plan*
- Provide *Arborist Report* detailing trees on the site and tree impacts
- Address inconsistencies, such as the retention of trees in seating area between the concourse and San Clinic conflicting with the location of the proposed bio retention basin
- Resolve conflict between indications that the temporary car park to be constructed in the north-east corner of the site at Stage 1A (256 spaces) as being in place until the completion of the hospital (2020), and the Wahroonga Masterplan which indicates that this area will be occupied by proposed residential and school uses at that time
- Highlight and prioritise alternative modes of transport over private vehicles in the Guide ("How to Find Us") shown in the proposed Workplace Travel Plan
- Show walking/cycling distances from nearby rail stations (including Warrawee and Normanhurst stations) in the Guide ("How to Find Us") shown in the proposed Workplace Travel Plan
- Provide detail on the proposed end uses of potable and non-potable water within the *Stormwater Management Plan*
- Specify the re-use of the rainwater in the 50 000 litre tank for Area 1
- Show locations of all water tanks on the site (placed underground)
- Provide a Phase 2 Contamination Assessment under *SEPP 55 – Remediation of Land*, as required by condition B13
- Prior to construction certificate stage, clarify whether the proposed stormwater and construction management plans are consistent with the *Hydrology and Nutrient Management Plan* that is to form part of the required *Biodiversity Management Plan* and the *Conservation Interface Plan*

Biodiversity (refer to DGR 1, 2, 3)

- Provide the required Biodiversity Management Plan so that an assessment can be made of this aspect as well as on the *Vegetation Management Plan*, *Fire Management Plan*, the *Hydrology and Nutrient Management Plan* and the *Management Plan* relating to public access to the E2 Conservation lands
- ensure that the Biodiversity Management Plan is completed and prior to the lodgement of any Preferred Project Report
- set back the eastern temporary carpark from the bushland to avoid adverse impacts on the bushland
- increase setbacks of the northern service road and at grade parking, away from the bushland
- provide a draft CIP prior to the lodgement of any Preferred Project Report to ensure consistency between the plans and the Biodiversity Management Plan and the CIP
- Retain remnant native and other significant trees wherever possible
- Address the removal of all but one of the existing trees within the village green area

ESD (refer to DGR 1, 7)

- There is no equivalent rating available for healthcare facilities, therefore only Green Star rating should be specified
- Utilise the Green Star Healthcare, Green Star Education and Green Star Interiors Tools to provide minimum 5 star, but preferably 6 star Green Star rated buildings to address reduction of greenhouse emissions, energy consumption, water usage, and improvements of material selection and transport initiatives
- Provide minimum 5 star, but preferably 6 star Green Star rated buildings to reflect the estimated $283.3M+GST which is 30 times more than the $10M lower threshold stated by *NSW Health*, and the lack of any major site constraints restricting green innovation
- Include relevant registration and documentation evidence from the Green Building Council of Australia within the Preferred Project Report, stating levels to be achieved within each category and clearly indicating within the documentation and annotated drawings (as is required for BASIX) all measures incorporated
- If, however, only 4 star Greenstar rating is requested, the buildings must score 100% of available points in the areas of emissions, energy, water, materials; and 80% of available points in all other categories; and include scoring in the *Innovative strategies and technologies, Exceeding Green Star benchmarks* and *Environmental design initiatives* categories
- Include the provision of energy reduction measures, such as tri-generation, that were included for consideration in the initial proposal for state significant development
- Indicate in the documentation location of, and how the following proposal statement is achieved: *'façade is to implement clever climate control technology to heat and cool the interior of the building, maximising the amount of light entering the building without compromising energy efficiency'* as well as the mentioned 'overhangs/sunshades, recesses, angled glazing or external louvers'
- Indicate in the documentation location of, and how the following proposal statement is achieved: '*natural ventilation to rooms – as patients may have little or no mobility, natural ventilation is to be integrated into each room to avoid any feeling of claustrophobia'*
- Indicate the number and location of the solar hot water collectors mentioned within the documentation
- Demonstrate how the proposal meets the key sustainable development aims and objectives of the *NSW Health* TS11 (refer to DGR 7)
- Indicate what passive design measures have been considered in the proposal in line with both *NSW Health* and the *Green Building Council of Australia*
- Provide evidence of an overall ESD concept, and integrated servicing that a development of this size requires in line with the requirements of *NSW Health* and the *Green Building Council of Australia*
- Address the NSW Government's aims at reducing emissions as stated in the *NSW Government Energy Efficiency Strategy* and the *NSW State Plan 2000*
- Indicate where the MUSIC model 150 000 litre rainwater tank for Area 2, and a 50 000 litre tank for Area 1 are to be located and what the captured rainwater is intended to be re-used for, ensuring that tanks are located below ground
- Clarify items WAT-3 and WAT-6 of Table 2 of the ESD Report which state that landscape irrigation is proposed, indicate how and where
- State how and where the non-potable water is to be used to 'cool medical and lab equipment, and for toilet flushing in selected areas' as indicated in the documentation
- The approved Statement of Commitments for the concept plan includes a commitment to investigate sewer mining opportunities. No reference to sewer mining has been found in the documentation, and it is therefore assumed that no such investigations have taken place. This should be undertaken as part of the preparation for any Preferred Project Report, as it has the potential to significantly reduce water use for the life of the project

Services (refer to DGR 1, 2, 3, 7, 12, 19, 20)

- Locate all services within building basements to improve visual quality of setting and streetscapes
- Locate plant rooms in building basements or within the central core of buildings, allowing external facades and rooftops to be utilised by patients/staff who would benefit from the amenity of natural light and environment, as well as and improve the appearance of building
- Comply with stormwater management controls
- Provide confirmation of utility requirements for the site and placement of required structures within basements
- Relocate new Fire Centre and oxygen tanks away from STIF, locate oxygen tank within building basement, locate Fire Centre away from the street elevation to Fox Valley Road
- Indicate all building service locations on the drawings
- Attain formal indications, from Sydney Water or Energy Australia and clearly state what the service requirements of the site, indicating their accommodation into the overall design, ensuring placement of all elements either underground, or within building basements, or building store rooms
- Remove the 3 substations from view, place them underground within basements
- Provide an enclosed area which is separated from public areas and from view, and kept clean at all times, for storage of all waste and recyclable material generated by the premises, including biological waste, hazardous and non-hazardous substances
- Provide a detailed breakdown of the quantities of hazardous materials in relation to their location to justify the EA claims that SEPP 33 does not apply to the site

Amenity (refer to DGR 1, 2, 3, 4, 5, 7, 12)

- Provide onsite amenity proportionate to the growth of the hospital facility

- Provide a well landscaped substantial garden to the north of the site, offering the unique bushland views, areas of respite and open playground facilities for staff, patients, visitors and the local community
- Provide on site quality leisure facilities for students/training staff attending the Education Centre and nurses/staff/students living on site
- Provide more sizable and variety of quality landscape gardens with varying degrees of access and enclosure, linked across the site in keeping with the scale and the historical bush connection and setting of the site
- Provide details on the amenity provided for existing and future nursing accommodation
- Reconsider the low amenity of the playground in the proposal, consider modern imaginative children's playgrounds, such as a 'Fairy Garden' or 'Secret Garden', located in bright, uplifting settings within hospitals
- Consider wind impact along the concourse through the building; being a pedestrian and seating area, wind studies should indicate what standards will be created for pedestrian movement and seating
- Mitigate wind impact around the site along pathways and bike and vehicular by using trees which also serve to create shading on hard surfaces reducing heat build up and softening the visual impact of the hard surfaces
- Provide information on solar access and wind impacts on outdoor areas that are to be used as amenity areas, include details on impact on existing child care centre
- Provide equitable visual amenity to all groups including the community, patients, staff and visitors by ensuring the building setting is not cluttered by service elements or a proliferation of parking
- Consider views of lower, ground to second/third levels as well as the already considered higher levels
- Consider the character of materials being used, avoid urbanistic facades by avoiding use of steel mesh and unmodulated concrete
- Create positive visual amenity through creative interface with the historic bushland setting

Parking (refer to DGR 1, 2, 3, 6, 7, 10)

- Reduce the overall building footprint by removing all above ground carparking buildings, relocate all parking within basements levels of the new buildings (two CSB buildings, Shannon building, Education Centre)
- Reduce the extent and proliferation of roadways and at grade parking by relocating all parking within basements of buildings
- Consolidate all parking within basement and underground parking levels stretching from beneath the new Shannon building to under the adjoining truck service turning area, and further onto the basement levels underneath the two new CSB buildings, so as to create efficiency in ramping and entry/exit/lifts/stairs
- Accommodate *future planning* within basement carparking enabling future underground carpark expansion
- Comply with accessibility, including accessible parking, and design of the spaces
- Comply with parking requirements, including 3-4% of total parking as accessible spaces
- Design accessible spaces in accordance with AS2890.6 (2009), which requires a shared area adjacent to parking space
- Provide details of differentiation of parking needs, for example, hospital paid parking for visitors, long and short term parking, staff parking, student parking, service vehicles, bicycle and motorcycle parking
- Provide permeable materials and substantial tree planting for shading to all at grade parking

Traffic and movement (refer to DGR 2, 6, 11)

- Address issues in relation to the *Work Place Travel Plan and Transport Access Guide*, and pedestrian and bicycle linkages, and other transport infrastructure
- Provide details on alternative modes of transport, particularly where morning/night shifts are involved and where relatively high numbers of elderly day patients/visitors are present
- Clarify how the hospital development transport plan fits into the overall concept plan and what the final configuration of the roads/paths/bike tracks would be
- Provide details for clear pedestrian access from Fox Valley Rd, as well as within the site
- Indicate clear routes for cyclists to bike parking and showers, ensuring minimised distances
- Make allowance, where possible, for a dedicated bicycle lane or other equivalent bicycle facility on Fox Valley Road
- Provide details and a schedule of public transport infrastructure improvements (e.g. bus stop signage, shelter upgrades, improved timetable information, lighting and security upgrades) as part of the requirements of the Sustainable Transport Initiative
- Provide clear and measurable *Commitments* to increase public transport access, access by alternative modes, and include a *Monitoring Program* where results can be reported and reviewed to ensure the projected benefits are achieved
- Include remedial measures should the indicated targets stated in the *Workplace Travel Plan* are not met
- Include documentation to share all results of the various surveys and monitoring with Ku-ring-gai Council, for information
- Clarify how increase in the floor area related to clinical services is set to expand by over 18,800m^2 yet the *Assessment of Traffic and Parking Implications* suggests there will generally be no increase in clinical services, and that this is one of the factors that would not justify a pro-rata increase in traffic generation
- Clarify the projected SAN Population Schedule by providing a detailed combined assessment of the whole Wahroonga Estate and the SAN so that the cumulative effects of both proposals can be known, it is not adequate to consider either in isolation
- Provide a clear indication of where any gates are to be installed and where parking fees or limited entry is to be allowed
- Restrict access to Fox Valley Road to a left in/left out arrangement to avoid potential conflicts of the new proposed access point to the north-east of the existing traffic signals on Fox Valley Road
- Address inconsistencies in the upper and lower sections of the SAN Population Schedule shown in Appendix B of the *Assessment of Traffic and Parking Implications*

- Address inconsistencies in the timings and the sum of the changes shown in Appendix F (Stage Car parking) and the *Assessment of Traffic and Parking Implications*
- Provide details of the impact of increased pedestrian activity as a result of the intensified use of the site must be considered in the *Management Plan outlining public access and impacts on the conservation land*, which is to form part of the *Biodiversity Management Plan*
- Co-locate the bushfire perimeter road with bike trails and walking track to reduce hard surface areas across the site
- Provide information on upgrades necessary to deal with the increase in pedestrian/vehicles flows, such as bustop waiting areas on Fox Valley Road, a separate and safe pedestrian access into the hospital that links into the new pedestrian concourse, pedestrian/vehicular pathway separation and crossings on the site

Streetscape (refer to DGR 2, 3, 10)
- Improve activity and Fox valley Road streetscape by providing a separate and visually distinct entry gate from Fox Valley Road, close to the bus stop area for pedestrians, linking to the concourse
- Create visual connection for the greater community along Fox Valley Road utilising the Bethel House museum building by locating it close to Fox Valley Road, linked with access from the concourse; possibly within the Village Green where the Green can create an appropriate curtilage and public setting for it.
- Relocate services and inactive uses such as the fire centre, oxygen tanks, fire water tanks to locations where they do not visually intrude on the landscape or streetscape, tanks should be placed underground with appropriate markings

Design (refer to DGR 3, 6)
- Design building elevations in an interesting way to present their bulk and scale in an aesthetic manner, breaking down the monolithic structures into smaller components through façade articulation
- Reconsider the height and blank façades of the Education Centre as they are not compatible with the character of the surrounding low density residential area, and does not provide an adequate interface
- Utilise innovative design techniques such as light wells, atria, and recessing portions of the façades to provide landscaped terraces giving access to natural ventilation and outdoor spaces to upper levels particularly to internalised waiting areas and patient rooms
- Provide details required by the condition of consent in relation to internal design of accessible toilet facilities, evaluation of slip resistant floor materials, lift specification, door schedule, tactile ground surface indicators, lighting levels, decor, signage, hearing augmentation facilities, furniture/counter fitout and the like
- Reconsider the design to address concerns with Planning for Bushfire Protection, flora and fauna and earthworks
- Reconsider the design to address the non-compliance of the Clinical Services Building with the APZ requirements
- Show how the proposal, particularly left over spaces and placement of services around the buildings, are in line with the principles of *Crime Prevention through Environmental Design*
- Resolve design aspects such as the bunkers' protrusion and flat roof that is an anomaly in the overall design
- Include the infrastructure of underground parking levels as part of the substantial building foundation works

Heritage (refer to DGR 10, 11)
- Include the photos listed (hard and soft copies), but not provided, in Appendix P in the Preferred Project Report
- Reconsider the location of Bethel House to provide suitable public access and appropriate setting
- Prepare a detailed archaeological survey and an *Archaeological Management Plan* for the site to ensure excavation works are undertaken with appropriate archaeological management
- Clearly resolve and identify on the plans all interpretive device locations as part of the Preferred Project Report, with the exception of the southern side of the multi-deck car park which is considered inappropriate as an interpretive element
- Provide details of the impacts from erosion and sedimentation from the proposed works uphill of the one identified aboriginal site (in vicinity of Coups Creek) within the *Hydrology and Nutrient Management Plan* that is to form part of the required *Biodiversity Management Plan* and the *Conservation Interface Plan*

Drainage (refer to DGR 12)
- Refer to DGR 12 for detailed requirements

Bushfire (refer to DGR 14)
- Refer to DGR 14 for detailed requirements

Staging (refer to DGR 16)
- Refer to DGR 16 for detailed requirements

Flora and Fauna (refer to DGR 17)
- Refer to DGR 17 for detailed requirements

Noise and Vibration (refer to DGR 18)
- Refer to DGR 18 for detailed requirements