

## 8.7 RESIDENTIAL AMENITY

The areas proposed for potential residential development are chiefly to the north of the site, with student and nurses accommodation and medi-hotel uses grouped on Precinct 4 adjacent to the Gore Hill Park. Underlying this approach are the following strategies to maximise residential amenity:

- Maximize access to distant views from the higher section of the site for residential users
- Maximize access to views over Gore Hill Park for student and nurses accommodation and medi-hotel type uses
- Residential developments on site are largely shielded from significant train noise impacts by existing dense development on the eastern side of Herbert Street, and are all located well away from the proposed helipad.
- Residential areas of the site are proposed to the north of the site, away from the Pacific Highway evening noise sources and enjoying high levels of solar access
- Proposed residential areas of the site enjoy simple access and direct sight-lines to public open spaces
- All proposed residential areas are within close walking distance of the station, existing and proposed retail shops

## 8.8 NOISE

Potential noise sources effecting the site include traffic on the Pacific Highway, trains on the North Shore Railway Line and helicopters and ambulances serving the hospital.

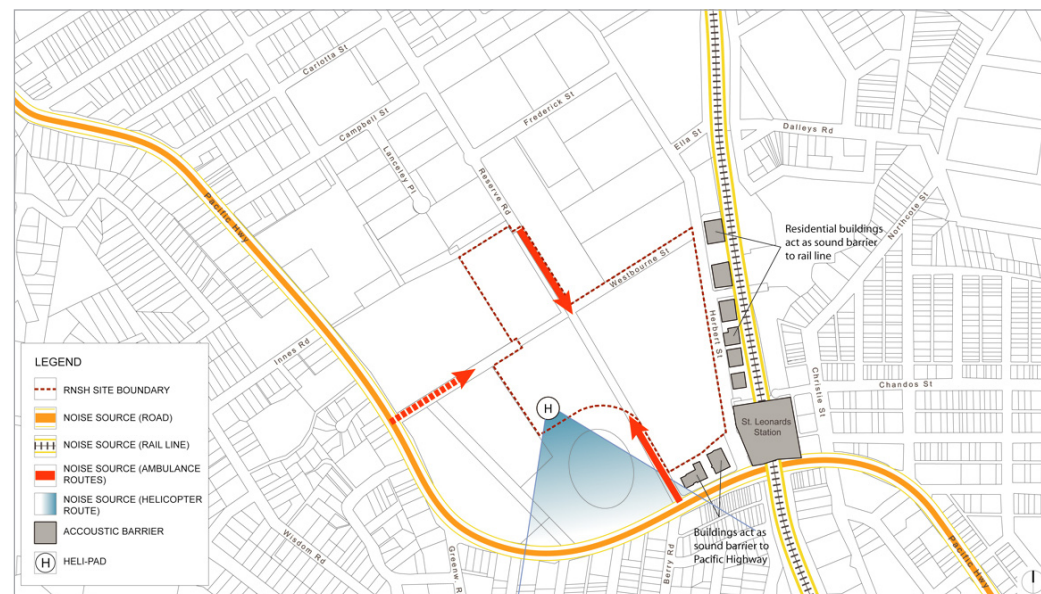


Figure 75: Existing noise source, prepared by Cox Richardson

Bassett Acoustics have prepared a noise report (see Appendix 11), which considers the ambient noise levels that were continuously monitored for a period of seven days at a location within the hospital campus to the north of Building 10. Based on these measurements and the consideration of relevant noise criteria detailed in their report, Bassett Acoustics have identified appropriate design noise criteria for the project.

The Noise Report specifies 'satisfactory' and 'maximum' noise levels to be achieved within the various components of the project, and compliance with all stated maximum noise levels will be documented at Project Application stage.

### 8.8.1 INTERNAL HOSPITAL NOISE

To protect hospital patients from helicopter noise intrusion from emergency flights a maximum noise criterion of 74 dB(A) is adopted. Despite exceeding the levels recommended in AS2021:2000 Acoustics – Aircraft Noise Intrusion – Building Siting and Construction, a design noise level of 55 dB(A) for wards, theatres, treatment and consulting rooms will minimise speech interference and sleep disturbance, and a design noise level of 60 dB(A) will be used for office areas. These recommendations equate to a 5 dB(A) relaxation of the criterion in AS 2021 and are justified on the basis that the flights are an essential service to the hospital.

### 8.8.2 EXISTING AND PROPOSED RESIDENTS

As there will be no significant changes to helicopter or ambulance operations arising from the project, (see Section 8.3.5) there will be no additional adverse effects upon nearby residents from these sources. Proposed new residential receivers within the site have been located so as to maximise the distance from the helipad and the ambulance route and as such are no more likely to be affected by noise from emergency vehicle movements than nearby existing residents. However at project application stage it will be necessary to give careful consideration to the orientation and layout of the residential buildings to achieve the specified standards.

## 8.9 SOCIAL AND ECONOMIC IMPACT

The project will facilitate the significant improvement of existing regional medical facilities on the site and create significant opportunities to establish new businesses/employment consistent with the identified role of St Leonards as a specialised centre for medical related employment and technology. It will also create opportunities for a range of associated educational, temporary accommodation, research and other development, along with a significant supply of housing to assist in the creation of a dynamic mixed use precinct and the attainment of the identified housing targets for the region. Limited retail development will also serve the existing and incoming worker and resident populations, and create activity and night lighting along identified pedestrian routes and within new public open spaces. A range of crèche, meeting and other community facilities will also cater to the broader social and economic needs of the precinct.

### 8.9.1 RETAIL IMPACT

To determine the appropriate type and amount of retail floor space provided for within the Concept Plan, the following four options were considered by Economic Researchers at UrbisJHD.

#### 1. **Convenience retailing**

*2,500 - 3,500m<sup>2</sup> of retail floor space, such as cafes and convenience stores scattered throughout each precinct, but concentrated within the ground level of the heritage precinct and within Precinct 4 adjacent to the elevated footbridge from the railway*

*Total 2,500 - 3,500m<sup>2</sup> of convenience.*

Comparable centres:

- Milsons Point/Kirribilli – Broughton Street
- Artarmon – Hampden Road
- The Italian Forum, Leichhardt
- Pyrmont/Ultimo – Harris Street

This option is the smallest proposition in terms of retail floorspace, involving only convenience based shops to cater for people working on, living on or visiting the site. Assuming 6,500 people are employed on the site (80,000m<sup>2</sup> @ 20m<sup>2</sup>/employee = 4,000m<sup>2</sup> + 2,500 existing hospital staff) and 1,500 residents live on the site, on-site demand is likely to be adequate to support the Option 1 scale of retailing.

#### 2. **Convenience centre with small supermarket**

*Option 1 with a small (say 1,500 - 2,000m<sup>2</sup> supermarket) added*

*Total between 4,500m<sup>2</sup> - 6,000m<sup>2</sup> of mainly convenience retail.*

Comparable centres:

- Rosebery – 767 Botany Road (New IGA)
- St Leonards – The Forum (Coles)
- Kingsgate centre, Kings Cross (Coles)
- Macleay Street, Kings Cross (Ikon Woolworths)

The key question regarding this scenario is whether there is sufficient demand to support a small supermarket in the development. The following considerations are pertinent:

- A small convenience supermarket would generally rely on the on-site population, but would also draw some business from the surrounding areas, particularly those within walking distance, such as the residential towers along Herbert Street.
- An existing Coles Express is located nearby in the Forum development.
- The provision of a small supermarket will allow the creation of a more focussed retail centre, with a mix of specialty shops, services and eateries. Such a centre may be externally oriented or based around an internal mall.

Such a centre would be very similar in its composition to the St Leonards Forum. Viability for this centre would be dependent on the supermarket turnover and the success of the physical layout, especially the exposure to customer traffic. A supermarket location adjacent to the Herbert Street Pedestrian Bridge would be preferable in this regard.

#### 3. **Supermarket based shopping centre with home and lifestyle offer**

*Option 2 with a further 2,000 - 4,000 m comprising either a full line supermarket or larger floor plate lifestyle/homeware/bookshop – (e.g. Bay Swiss, Freedom Furniture, Officeworks) at the Herbert Street frontage of Precincts 4 and 5.*

Comparable centres:

- Southpoint, Matraville
- Pacific Square, Maroubra
- West Ryde Marketplace
- Norwest Marketplace
- Newington Village
- Pittwater Place, Mona Vale
- World Square, Sydney
- Norton Plaza, Leichhardt

The provision of a full line supermarket of 3,500-4,000m<sup>2</sup> would create the potential to provide a neighbourhood shopping centre, which would be a destination retail centre serving the surrounding suburbs in addition to the on-site market. Key considerations are:

- The centre would be expected to draw customers from Artarmon, Naremburn, Greenwich and other nearby suburbs.

- The centre would require adequate and accessible car parking to serve these customers.
- A successful supermarket based shopping centre would usually support around 15-20 specialty shops. These shops benefit from the customer activity generated by the supermarket, but also add to the overall appeal and critical mass of the centre. The specialty mix will be generally based on convenience food and non-food retailers and services.
- The supermarket and specialty shops should be closely integrated, with the preferable configuration being an internal retail mall of specialty shops leading between the supermarket and the main access point(s). The concept of a home/lifestyle precinct would generally need to draw upon a larger catchment area, with these types of products generally being shopped for less often. The key considerations are:
  - A successful precinct requires a critical mass of retailers to provide the opportunity for browsing and comparison shopping.
  - The retail environment needs to be attractive and convenient in terms of accessibility.
  - Main road exposure is important in order to create familiarity with the precinct in the minds of potential customers who don't shop there every week.
  - The retail mix should include books, music, homewares, specialised furniture and gifts.
  - A mix of national chains and quality independent retailers.
  - A good provision of cafes and restaurants complements the home/leisure offer.

A good example of a successful lifestyle precinct is Willoughby Road in Crows Nest, which includes a strong food offer and an eclectic mix of non-food shops. Crows Nest also has a strong convenience retail component, together with a large homemaker retail strip along the Pacific Highway. While another such centre in close proximity may result in adverse economic impacts upon Crows Nest, compared to Sydney Metropolitan averages, the lower North Shore is

significantly undersupplied with supermarket based retail floorspace, despite having significantly higher than average household incomes. A supermarket based centre on the RNSH site is therefore unlikely to have significant impacts on surrounding centres such as Crows Nest.

#### 4. **Sub regional centre**

*Discount Department Store, Supermarket and specialty centre - Max. sensible retail solution - 15,000 - 20,000m, plus some convenience shops.*

Comparable Centres:

- Rockdale Plaza
- Victoria Gardens (Melbourne)
- Rhodes Waterside
- Auburn Central

These types of centres usually tend to locate in suburban or regional locations, where they provide a one-stop shopping environment for a wide range of retail needs. The retail mix of these centres tends to be mainstream and family-oriented, reflecting the market positioning of the DDS anchor store. There are few centres of this type in the inner suburbs of the metropolitan cities, where the local market tends to contain more single/couple households and incomes are higher.

Sub-regional centres also occupy large sites, including the big-box DDS stores and large car parks. The higher cost of land in the inner metropolitan areas therefore makes these centres difficult to justify from a land economics perspective. Consequently there is a very low provision of DDSs in many inner areas, such as the lower north shore.

Key considerations are:

- A sub-regional centre would draw from a wider area, extending into areas such as Lane Cove, North Sydney and Cammeray.
- The demographic of this area is not an ideal fit for a DDS, being oriented towards higher income families, professionals and single/couple households, notwithstanding a sizable available market.
- Some 700 or more car spaces would be required, with convenient vehicular access from surrounding streets being important.
- The established design of this retail format is to focus customer activity along a single internalised mall, linking the anchor DDS and supermarket.

Overall, subject to achieving a good design outcome and an efficient layout and vehicular access, a centre of this type may be viable from a retail perspective. However, it may raise issues of retail impact upon other centres, and feasibility in view of the cost of land and the spending patterns of the local demographic.

#### 5. **Regional Shopping Centre**

*A department store with a number of other major anchor stores and numerous specialties. Regional centres range in size from 50,000m2 to over 120,000m2 of retail floorspace.*

Comparable Centres

- Chatswood Westfield
- Chatswood Chase
- Bondi Westfield
- Hornsby Westfield





Key considerations are:

- With both David Jones and Myer both located at both Chatswood and in the Sydney CBD, there does not appear to be a strong case for an additional store at St Leonards.
- Regional centres require large site areas and extensive car parking. Access needs to be excellent, given the very high traffic generation, which may be in the range 5-10 million visits per year.
- Regional centres take the form of large, generally unarticulated boxes, with extensive blank walls and large loading dock and parking structures. It would be difficult to locate such a facility without creating adverse urban design impacts and severing connectivity between the hospital and the railway station.
- The potential retail impacts upon existing centres would be significant.

In view of the above, the Concept Plan provides for a minimum of 3,500m<sup>2</sup> and a maximum of 11,500m<sup>2</sup> of general retail floor space, scattered throughout each precinct, with the largest allowable spaces being approximately 5,500m<sup>2</sup> in Precinct 4 and 2,500m<sup>2</sup> in Precinct 5, with a maximum allowance for an additional 3,800m<sup>2</sup> of space in Precincts 5 and 6 for lifestyle/homeware/bookshop uses fronting Herbert Street.

This retail floor space allowance essentially restricts retail development to Options 1, 2 or 3 above. Options 4 and 5 and the significant traffic and retail hierarchy impacts they would entail cannot be achieved within the proposed floor space allowances. Hence retail will be limited to local service shops, possibly a supermarket and possibly some lifestyle/homeware/bookshop uses located along Herbert Street to activate this frontage. The Concept Plan will therefore deliver the local service and activity associated with retail uses that is sought in the Draft St Leonards Strategy, without generating any significant adverse retail or traffic impacts. It will also require active ground level uses in all significant buildings in the Mixed Use zone, as recommended in the Draft St Leonards Strategy.

### 8.9.2 HOUSING AFFORDABILITY

The Metro Strategy recognises that some areas of Sydney have difficulty in attracting workers because of high housing prices and rents, leading to skill shortages in specific sectors or extended journey to work distances and travel times (see Section 8.2). Health care is an industry that is specifically identified.

This is a particular issue for RNS Hospital, which employs large numbers of medical support staff, including some essential lower paid workers, and is located in one of the more expensive residential districts in the country. The proposed provision of not less than 10,000m<sup>2</sup> of housing for students or lower income hospital/health employees and the implementation of a 'TMAP' (see Section 8.3.3) to facilitate improved public transport options will combine to provide lower cost transport/housing options for hospital staff and students.

The proposed development of a significant supply of private sector residential flat development will also make a significant contribution to the attainment of the Metro Strategy housing targets for the locality. Being one of only a limited number of large sites capable of supporting significant numbers of additional dwellings, a significant density of development on the site will reduce the likelihood of future demand in this sort after location outstripping limited supply. The Concept Plan will therefore have a positive impact upon affordability, both for workers and existing and future residents.

### 8.9.3 HOUSING FOR AN AGEING POPULATION

The Concept Plan will facilitate the development of a significant supply of housing within a short, relatively level walk of the Hospital, associated medical facilities, St Leonards bus and rail station, the St Leonards town centre and the range of retail, recreational, service and community facilities existing within the Town Centre and proposed within the site. Furthermore, all proposed housing will be in the form of multi-level apartment buildings, such that the majority of housing will be single level apartments served by elevators, with short, level access to all of the above facilities. Such housing will be very well suited to an ageing population, regardless of whether it is exclusively designed for that demographic. However not less than 10% of all apartments will be designed to be 'adaptable' to meet the specific needs of less mobile people, exceeding relevant Willoughby City Council, Australian Standard and Disability Discrimination Act requirements.

## 8.10 CONSTRUCTION AND WASTE MANAGEMENT

### *Construction Management*

Following design of the proposed buildings, fully detailed Construction Management Plans will be submitted for approval with the project application for each building. These plans will show all stages of construction including (but not limited to), details of building materials and waste management during the construction phase, traffic movements and management during construction. Associated effects on existing amenities (e.g. noise, dust etc) will be addressed and amelioration measures provided where appropriate.

These plans will adopt, as minimum standards, all the measures included in the recently approved CMP for demolition of the Maternity Hospital that was recently approved by Willoughby Council (see Appendix 12). This plan details construction management measures in relation to:

- Final Physical Character and External Appearance
- Demolition
- Removal of Hazardous Substances
- Security
- Construction traffic

- Excavation and earthworks
- Transport of materials on and offsite
- Waste disposal
- Construction compound (including storage of chemicals and hazardous materials, onsite amenities, storage of plant and equipment)
- Hours of Work
- Environmental Management Safeguards
- Construction Areas
- Plant and Equipment
- Waste Management and Contamination
- Erosion and Sediment Control
- Vibration
- Noise
- Air Quality
- Site clean up and landscaping
- Community Consultation

### ***Hospital Waste Management***

The proponent currently implements an ISO 9001 certified Waste Management and Resource Recovery Policy at RNSH (see Appendix 13), and is committed to develop, implement and maintain a waste management and resource recovery system throughout the hospital, which:

- Avoids waste production through purchasing strategies, reuse, maximised recycling and proper handling and disposal of the remaining refuse.
- Complies with all relevant legislation relating to waste and resource recover, environmental protection, and occupational health and safety, NSW Government Waste Reduction and Purchasing Policy, NSW DOH Infection Control Policy (02/45) and the NSW DOH Waste Management Guidelines for Health Care Facilities, Aug. 1998.
- Is based on measurable objectives and continual improvement methods, and will provide a safe work environment and protect the environment from damage.

### ***Non-Hospital Waste Management***

Following detailed design of the hospital buildings, a fully detailed Waste Management Plan prepared in accordance with the following objectives will be submitted for approval prior to occupation of the building:

- Maintain the standards set by relevant professional and statutory bodies, ISO 14001:1996, ISO 9001:2000 and other regulatory/legislative requirements
- Determine and meet the waste management requirements of all departments through structured and continued feedback
- Foster commitment from all staff and management to actively participate in waste avoidance, reduction, reuse and recycling programs
- Provide a continuing waste and resource management education program for staff to increase awareness of waste minimisation principles, Occupational Health and Safety issues and quality improvements ethics
- Establish and maintain effective mechanisms to monitor, review, analyse and evaluate the waste management system and enable its continual improvement
- Provide regular reports on the progress to Area Corporate Services Management, Hospital Executive Directors and Area Corporate Services Department Heads
- Establish systems for implementing and reporting progress of the NSW Waste Reduction and Purchasing Policy
- Develop benchmarking partnerships with facilities within and beyond Northern Sydney Health
- Provide a point of contact for Area Corporate Services quality improvement activities
- Promote a working relationship with preferred suppliers of Area Corporate Services and products and services
- Manage the services within available resources
- Implement the Waste Management and Resource Recovery Operating Procedures and Work Instructions, throughout each facility to minimise the environmental impact of waste treatment and disposal.

Waste Management Plans prepared in accordance with all relevant Council and EPA requirements will be submitted for approval with the project applications for each non-hospital building.

# 8.11 DRAINAGE

The drainage concept for the project involves four separate catchment, that will be drained as indicated below.

- *Western Catchment*

This area comprises the land to the west of Reserve Road and south of Westbourne Street and forms part of a larger 14.6 ha catchment. It will be drained by a piped system into new rainwater storage tanks in Gore Hill Oval. Additional flows will be detained by Gore Hill Oval and then piped through the southern end of the site to connect to the Herbert Street drainage system, as currently occurs.

- *Herbert Street South Catchment*

This area comprises the land to the south of Blue Road and east of Reserve Road to Herbert Street, and forms part of a larger 22.4 ha catchment. Drainage will connect to the Herbert Street drainage system through a series of main storm water lines constructed beneath the new roadway system. The southern area of this catchment will connect to the new storm water line that was recently constructed behind the buildings fronting the Pacific Highway.

- *Herbert Street North Catchment*

This area comprises the northern end of the site from Blue Road to Westbourne Street, and east of Reserve Road to Herbert Street, and forms part of a larger 9.4 ha catchment. Drainage will be by a piped system below Westbourne Street and Blue Road, connecting to the drainage system that runs north in Herbert Street.

- *Northern Catchment*

This catchment contains the North Shore Private Hospital and car park sites, and will be unchanged by the redevelopment.

An analysis of the existing system will be undertaken for various storm events to determine the existing system capacity, and the impact of any additional runoff from the above catchments. Any shortfall in downstream capacity will be offset by either storm water reuse or on-site detention. A comprehensive Drainage Co-ordination plan will be prepared for the entire site to demonstrate how the separate development of each precinct will be co-ordinated across the site. Detention is expected to be achieved predominantly by separate basement storm water storage tanks within each precinct. Details of reuse and detention infrastructure will be fully documented in accordance with the Willoughby Council's standard requirements in the project applications for individual buildings.

## 8.11.1 WATER SENSITIVE URBAN DESIGN (WSUD)

Discussions with Council have indicated that they would be prepared to offset possible detention requirements with the use of WSUD principles on individual sites. WSUD principles will be used with the provision of rainwater reuse tanks for irrigation requirements on each site. Additional reuse activities for water use in cooling towers, and possibly toilet flushing and laundry water will be investigated.

Council has indicated their preference for approximately 350m<sup>3</sup> storage for irrigation purposes on the Gore Hill Oval site, and the Statement of Commitments at Section 9n includes the installation of storage tanks of at least this capacity to supplement the current detention provided by the oval.

We understand that a Greenstar rating for Hospital buildings will be implemented in the future. The Hospital will comply with the rating requirements in force at the time of its final project approval.

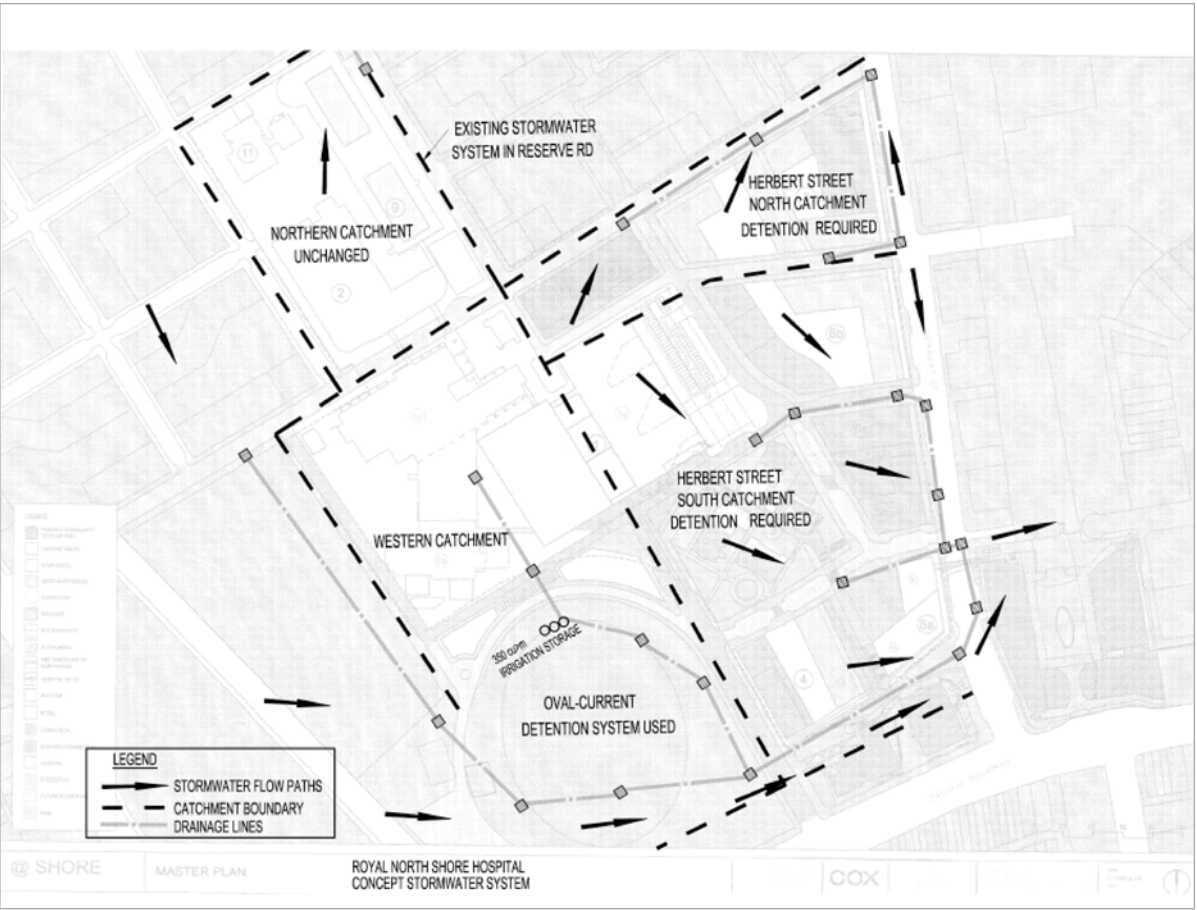


Figure 76: Concept Storm Water System, prepared by Taylor Thompson Whitting



## 8.12 UTILITIES AND SERVICES

Various utility services will require relocation, expansion or alteration to accommodate the project.

### 8.12.1 ENERGY AUSTRALIA

Energy Australia has advised that the electrical load of the project will be too large to be served from the existing HV infrastructure and a new zone substation will be required on the site. The proponent is currently negotiating with TAFE to locate this facility straddling the northern boundary of the hospital site and the TAFE site to the north. If these negotiations are unsuccessful, the substation will be located below ground within one of the development precincts. From the new zone substation 11kV cables will run to distribution substations associated with individual buildings on the site.

The new construction work over Reserve Road will require the relocation of existing Energy Australia cables out of the construction zone, via a dedicated Energy Australia cable tunnel to the east of Reserve Road, constructed as an extension of the underground car park of the new building. The cable tunnel shall be three-hour fire isolated from the building and will extend for approximately 120m. At the north and south ends of the tunnel in-ground 10m long jointing pits will be provided to make the connections to the existing cables. Energy Australia have been consulted and have given in-principle approval. The diversion works will take approximately 4 months after handover of the tunnel and before any construction work takes place within the Reserve Road carriageway. The load cycles of the transmission cables dictate that the diversion works cannot occur in summer or winter.



Figure 76: Site Services Plan, prepared by Cox Richardson

### 8.12.2 SYDNEY WATER

The Reserve Road construction work will require the diversion of a 500 diameter and a 100 diameter water main. Sydney Water Corporation have been consulted in both cases and have given approval in principle for the relocation and diversion of the two mains on the proviso that the continuity of water supply is not affected. As proposed by Sydney Water, the 500mm trunk main will be rerouted to the west along Westbourne Street and then to the east and south of the existing hospital's boundary prior to connecting to the 500mm main in Reserve Road. The new mains will be in place prior to the section of the 500mm and 100mm water mains being made redundant.

### 8.12.3 AGILITY GAS

The Reserve Road construction work will require the diversion of a high pressure and a low pressure gas main. Both gas mains will be relocated and amplified prior to commencement of work on the site. Agility has been consulted in both cases and has given approval in principle for the relocation and diversion of the two mains on the proviso that the continuity of the gas supply is not affected. As proposed by Agility, the gas mains will be rerouted around to the east along the new public roads that will be created as part of the sub-division of the existing properties prior to reconnection to the existing gas mains. The new mains will need be in place prior to the section of the existing gas mains being made redundant.

### 8.12.4 TELSTRA

Telstra have advised that the existing cabling may be reused where appropriate but that for the new hospital building and major new commercial subscribers, new network connections would be provided from St Leonards telephone exchange nearby. These are likely to be fibre run in existing ducts along the Pacific Highway and then via new dedicated conduits to the respective buildings.

### 8.12.5 BROADCAST AUSTRALIA TRANSMISSION TOWER

Liaison with THL, the owner of the Broadcast Australia Tower located to the north-west of the site has raised concerns in four regards, namely whether:

- line of site communications to North Head could be obstructed by new buildings or construction equipment.
- existing electromagnetic radiation from the tower could impact upon proposed hospital operations and/or future workers and residents in new buildings
- future workers and residents in new buildings could lobby to restrict existing transmission rights to reduce EMR impacts upon them
- new buildings would interfere with broadcast quality from the tower

In all of the above regards, we note that the transmission tower is located to the north-west of the northern end of the private hospital such that:

- Line of site to North Head only passes over the northern end of the Private Hospital, where no new buildings are proposed.
- Of all the buildings contained in the Concept Plan, existing Building 1 and the existing Private Hospital building are significantly closer to the transmission tower than the proposed new buildings, many of which are within the 'broadcast shadow' already cast by these buildings and/or existing residential towers on Herbert Street.

Consultation with THL is ongoing and suitable arrangements to mitigate potential EMR impacts upon future occupants, and potential interference with transmissions from the tower will be confirmed prior to approval of the Concept Plan. The latest correspondence and report from THL is included at Appendix 14.



Figure 78: Broadcast Constraints, prepared by Cox Richardson

### 8.13 CONTAMINATION

A preliminary contamination assessment of the site was carried out in 2004 (see Appendix 15). The investigation was for the main hospital area to the east of Reserve Road. Included in the investigation was a desktop review of available records and limited sampling and laboratory testing of the site.

Based on the limited data, it is unlikely that widespread soil contamination is present on the site. Some local areas of contamination were identified that will require remediation. However given the site history and limited contamination results, it is unlikely that contamination will pose any significant impediment to hospital, residential or commercial use. Additional testing in accordance with EPA guidelines will be required to determine the extent of remediation works required. This will be undertaken, in addition to any resultant remediation, and validation thereof that may be required, prior to the commencement of building work.

### 8.14 GEOTECHNICAL

A preliminary geotechnical investigation has been carried out by Coffey (see Appendix 16). The subsurface conditions indicated by limited boreholes indicated typical conditions that would be expected in this area. There should be no significant geotechnical constraints to the proposed developments. Further testing will be required during detailed design at Construction Certification stage.