NSW GOVERNMENT | Planning

MAJOR PROJECT ASSESSMENT: GLOBAL SWITCH SYDNEY 2 DATA CENTRE BUILDING, ULTIMO (MP08_0222)

Director-General's
Environmental Assessment Report
Section 75I of the
Environmental Planning and Assessment Act 1979

November 2010

ABBREVIATIONS

CIV	Capital Investment Value
Department	Department of Planning
DGRs	Director-General's Requirements
Director-General	Director-General of the Department of Planning
EA	Environmental Assessment
EP&A Act	*Environmental Planning and Assessment Act 1979*
EP&A Regulation	Environmental Planning and Assessment Regulation 2000
EPI	Environmental Planning Instrument
MD SEPP	State Environmental Planning Policy (Major Development) 2005
Minister	Minister for Planning
PAC	Planning Assessment Commission
Part 3A	Part 3A of the *Environmental Planning and Assessment Act 1979*
PEA	Preliminary Environmental Assessment
PFM	Planning Focus Meeting
PPR	Preferred Project Report
Proponent	Global Switch Property (Australia) Pty Ltd
RtS	Response to Submissions

Cover Photograph: North western view of the Project Development Proposal

Published November 2010
NSW Department of Planning
www.planning.nsw.gov.au

NSW Government
Department of Planning

EXECUTIVE SUMMARY

This report is an assessment of a project application seeking approval for a new six-storey data storage facility building at 273 Pyrmont Street, Ultimo, pursuant to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act).

The development proposal comprises: six-storeys of technical equipment and specialised data storage; three (3) basement levels for plant and storage; and 12 on-site car parking spaces. The total gross floor area of the project building will be 22,285m^2 with a plant area of 15,227m^2.

The building known as Global Switch Sydney 2 (GSS2) will contain a range of sophisticated, environmentally sustainable design initiatives within its new building such as heat recovery, green roof system, stormwater/grey water/black water capture and recycling, and general recycling. These initiatives will be closely integrated into the building layout, external appearance and design. The development project will also adopt a leading edge 'trigeneration system' to generate electricity on site and utilise the waste heat by–product of the electricity generation to provide cooling to the building through the use of absorption chillers. The primary energy source is proposed to be natural gas.

The estimated capital investment value of the development proposal is $198,533,000 and will provide approximately 400-500 jobs during construction and fit-out of the facility over a two to three year period.

On 7 November 2008, the Director General, as delegate of the Minister, formed an opinion that the project is a major project under clause 10 - Sydney Harbour Foreshore Sites of Schedule 2 to the MD SEPP, as it is *"development (with a capital investment value of more than $5 million) in the areas identified on Map 9 to this Schedule."* The Minister is the approval authority.

The proposal was exhibited for period of 30 days from 7 April 2010 to 7 May 2010. During the exhibition period, the Department received a total of 6 submissions from public authorities and 9 submissions from the general public. Key issues included: bulk and scale; view loss; overshadowing; licensing of the trigeneration plant; air impacts; noise impacts; street activation, car parking; developer contributions, and construction impacts.

On 31 August 2010, the proponent submitted a Preferred Project Report to submissions to address issues raised by the Department, other government authorities and the public. Modifications to the project have been made to address the licensing requirements, air quality and noise impacts, and redesign of the pedestrian and canopy entry off Pyrmont Street.

The Department has assessed the merits of the proposal and is satisfied that the impacts of the proposed development have been addressed via the proponent's Preferred Project Report, Final Statement of Commitments and the Department's recommended conditions of approval to ensure a satisfactory level of environmental performance.

On these grounds, the Department considers the proposal is acceptable in the public interest and should be approved, subject to conditions.

1. BACKGROUND

Global Switch Property (Australia) 2 Pty Ltd proposes to construct and operate the Global Switch Sydney 2 Data Centre, at 273 Pyrmont Street, Ultimo. The project location is shown in **Figure 1**.

Adjoining the site to the west is the Global Switch Sydney 1 building located at 400 Harris Street, Ultimo, which has been used for the past 8 years as a data centre space for leading national and international organisations and institutions.

The site comprises three (3) allotments legally identified as Lot 12 in DP 632526, Lot 3 in DP 632526 and Lot 10 in DP 840467. The total site area is 5065.9m² and is located within the LGA of the City of Sydney Council. The development will also be constructed partly over the common boundary with Global Switch Sydney 1, known as Lot 1, DP 109652 which is owned by Global Switch Property (Australia) 2 Pty Ltd.

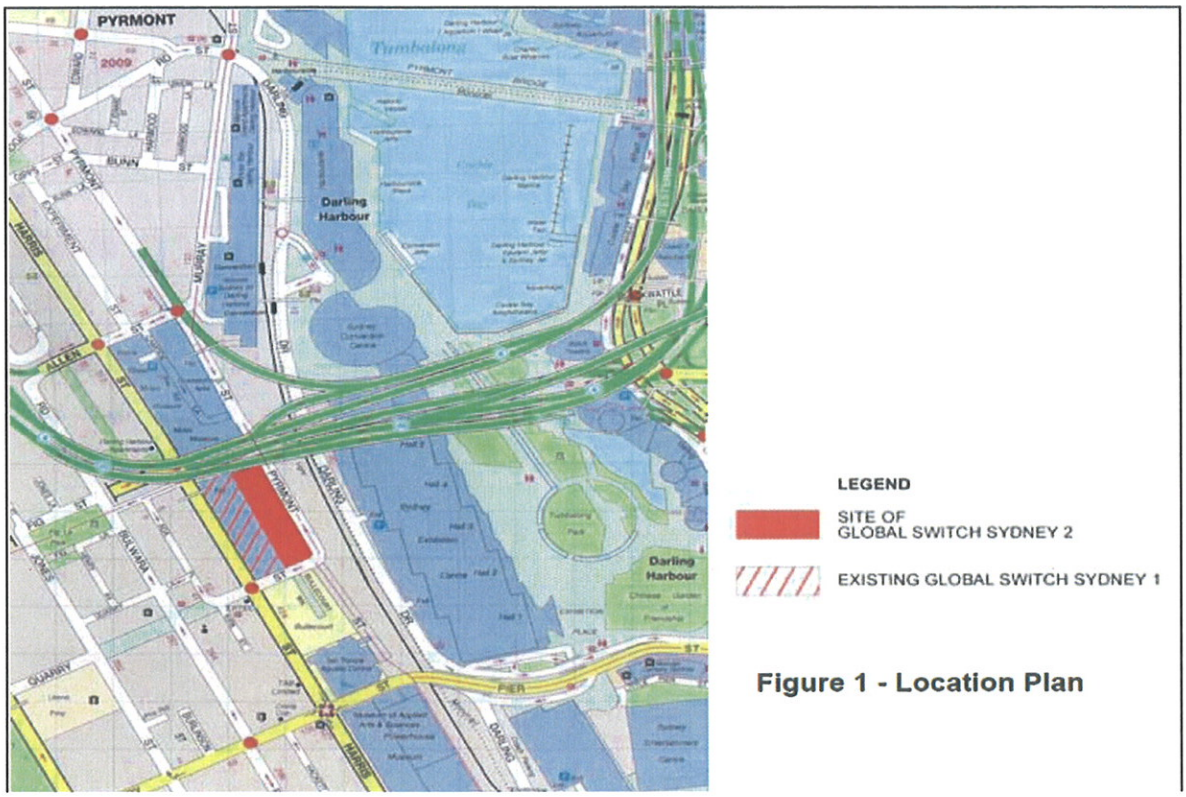

Figure 1: Project Location

The site is a vacant parcel of land, which lies directly to the east of the Global Switch Sydney 1 (GSS1) that occupies the former Government Printing Office (GPO) site (**Figure 2**). The subject vacant site abuts the existing Global Switch Sydney 1 building and is bounded to the north by the Western Distributor, to the east by Pyrmont Street and to the south by Quarry Street. The site is essentially a level parcel of land with worn bitumen surfacing. Retaining walls and sandstone rock faces created by past excavation of the site are located along the site boundary.

The site is located in a mixed residential / commercial area and in close proximity to Darling Harbour which is located to the east of the site. The Goldsbrough Mort building adjoins the northern edge of the Western Distributor and the Bullecourt residential development is located south of Quarry Street (**Figure 3**). The light rail line and monorail are directly opposite the site on the eastern side of Pyrmont Street.

Photo 1

Subject site looking south from the Western Distributor towards the Bullecourt Development.

Global Switch Sydney 1 abuts the site to the west.

Photo 2

Subject site looking north from Quarry Street towards the Goldsbrough Mort building.

Figure 2 – Existing site photographs

Photo 3

View south-west from the corner of Pyrmont Street and Quarry Street toward the Bullecourt residential / retail development to the south of the site.

Figure 3 – Southern adjacent residential development

Figure 4: Aerial View of the subject site

2. PROPOSED PROJECT

2.1 Project Description

Approval is sought for a purpose built six-storey data centre building above three (3) basement levels, comprising a total Gross Floor Area (GFA) as defined in the site specific Master Plan of approximately 22,285 m² in addition to 15,227 m² plant area. A total of 12 car spaces will be provided at-grade on the northern boundary of the site. All vehicular access will be directly off Pyrmont Street. The project application seeks approval for the following works:

- all associated site works and in-ground infrastructure works
- excavation and shoring of basement areas
- installation of all necessary foundation and retaining structures
- construction of a proposed new six-storey data storage facility and three level basement
- installation of a trigeneration plant plus all ancillary plant and equipment required to make the building operational
- direct internal linkages to Global Switch Sydney 1 building
- secure, covered on-site parking for 12 vehicles and loading area
- implementation of new landscaping works, streetscape upgrades and street tree planting works
- erection of corporate building signage

The proposed building is shown in **Figures 5-7**. The key components of the project are listed in **Table 1**.

Figure 5: Proposed development looking north-west

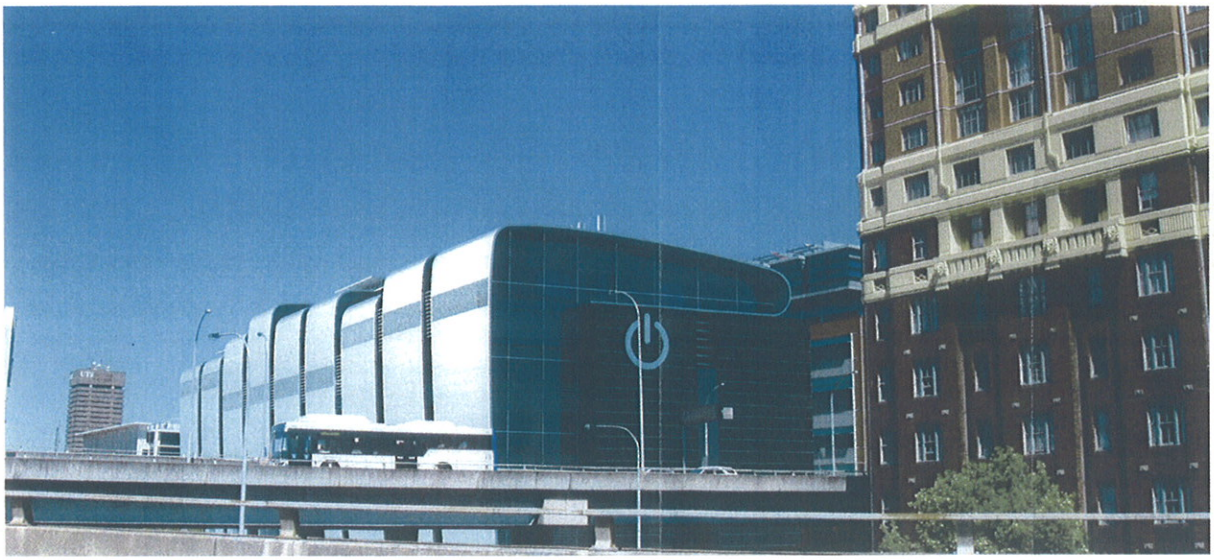

Figure 6: Proposed development looking south-west

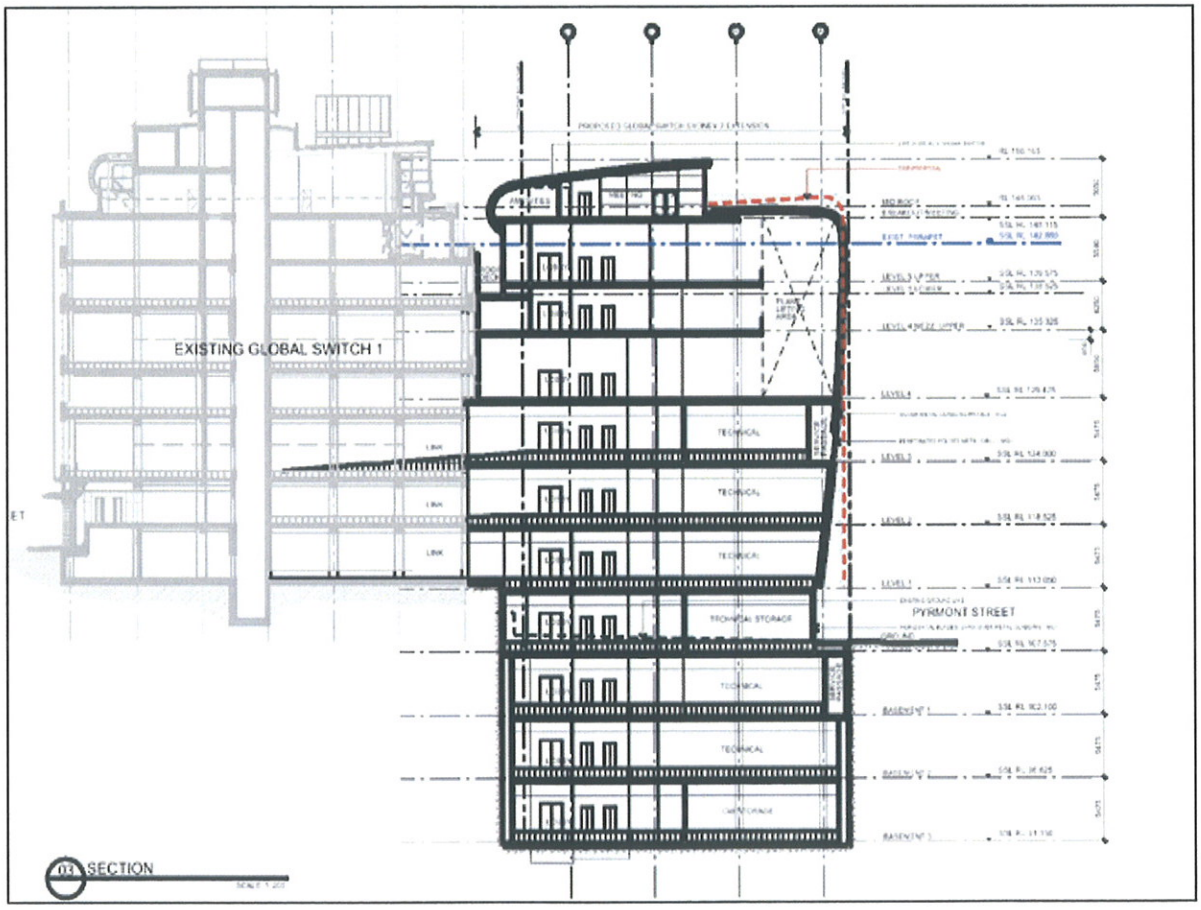

Figure 7 – Proposed section when viewed from the south

Table 1: Key Project Components

	Description
Project Summary	The proposed building will accommodate data facilities for large multi-national corporations, government agencies, IT companies and major financial institutions.
Height	The proposed building height varies from RL144.065 to RL150.165 of which the maximum RL is contained to a small section of the building (centre) to be used for a meeting room and amenities.
Area and Floor space	Total area 37,512m^2 GFA - 22,285m^2 (not including 15,227m^2 of plant)
Plant and equipment	9 x 4.3MW gas engines (trigeneration units), each with a 4.3MW 2-stage absorption chiller 27 x 1500kW diesel fire engines (for emergency back-up) Diesel bulk fuel storage for the diesel fire engines (400,000 litres) 57 cooling towers
Level breakdown	Basement level 3: Technical & plant (diesel tanks, storage, water storage, pump rooms) Basement level 2: Technical & plant (switchrooms) Basement level 1: Technical & plant (switchrooms, connection rooms, pump room, riser ducts, amenities) Ground floor: Technical & plant (switchrooms, electrical transformers), lobby and reception, car parking and loading dock First floor: Technical & plant (switchrooms), access link into GSS1 building Second floor: Technical & plant (switchrooms), access link into GSS1 building Third floor: Technical, access link into GSS1 building Fourth: Plant: Gas engines (producing electricity) & diesel generators Fifth: Plant (diesel generators & pipe work) Roof: Green roof area, break out/meeting area, amenities, lift overuns
Parking	12 on-site car parking spaces (including 1 disabled space)
Operating Hours	Due to the services the business provides, the building will be accessible by staff and contractors 24 hours 7-days-a-week.
Capital Investment Value	$198,533,000.00 excluding GST
Construction Jobs	Approximately 400-500 over a two to three year period

2.2 Project Need and Justification

Global Switch Sydney 1 (GSS1) in Harris Street, Ultimo has provided a secure data storage facility for a number of years, and the Department accepts the proposed facility can assist the data storage industry on a large scale. The creation of Global Switch Sydney 2 (GSS2) data centre facility provides an opportunity to attract Australian and internationally based companies to set up their IT business operations in NSW. The project also facilitates the retention and expansion of current business operations in the region. Overall, the development will generate direct employment opportunities for approximately 400-500 persons over a two to three year period during construction and secondary employment associated with servicing. On this basis, the Department considers that the development will positively contribute to Sydney and the broader economy.

3. STRATEGIC CONTEXT

3.1 NSW State Plan

The NSW State Plan seeks to achieve improved urban environments and deliver attractive and sustainable development through reductions in greenhouse gas emissions and development in close proximity to existing centres, services and transport. The State Plan aims to improve the design of cities, centres and suburbs and the proposal will achieve this by assisting in the ongoing renewal and redevelopment of Ultimo.

The Global Switch project will directly contribute to a number of plans, important priorities and targets including the following priorities:

- Increased business investment by investment in infrastructure to support the growing economy;
- A reliable electricity supply with increased use of renewable energy; and
- Cleaner air and progress on greenhouse gas reductions.

3.2 Sydney Metropolitan Strategy

Sydney's population is expected to reach 6 million by 2036 - an increase of 1.7 million since the last Census in 2006. That means there will be a need of 760,000 more jobs and 770,000 more homes than in 2006.

The discussion paper *Sydney, towards 2036* – Metropolitan Strategy Review encourages a strong and diverse economic base to boost the city's net worth by improving infrastructure that encourages redevelopment.

The project development will provide secure data storage capacity and IT infrastructure management facilities within close proximity to the CBD, thus attracting and retaining major investment in Sydney consistent with the Metropolitan Strategy.

3.3 Sydney City Draft Subregional Strategy

The Subregional Strategy encourages future investment within the Sydney City precinct area to boost the economy and employment. The project (Global Switch 2) will improve upon the current data storage facility provided at Global Switch 1 and expand employment opportunities.

The sustainability of the development, in terms of self sufficient energy supply, is consistent with the NSW Government's commitment to managing the environmental impact of development and reducing consumption of natural resources.

4. STATUTORY CONTEXT

4.1 Major Project

On 7 November 2008, the Minister for Planning declared the project to be subject to Part 3A of the *Environmental Planning and Assessment Act 1979* (EP&A Act) under Schedule 2 of *State Environmental Planning Policy (Major Development) 2005*, namely clause 10 – Sydney Harbour Foreshore Sites and has a CIV greater than $5 million. Therefore, the Minister for Planning is the approval authority.

4.2 Permissibility

The site is unzoned under the provisions of Darling Harbour Development Plan No 1. The proposal is consistent with the aims and objectives of the Plan and is permissible with consent.

4.3 Environmental Planning Instruments

Under sections 75I(2)(d) and 75I(2)(e) of the EP&A Act, the Director General's report for a project is required to include a copy of, or reference to, the provisions of any State Environmental Planning Policy (SEPP) that substantially governs the carrying out of the project, and the provisions of any environmental planning instruments (EPI) that would (except for the application of Part 3A) substantially govern the carrying out of the project and that have been taken into consideration in the assessment of the project.

The primary instruments guiding the assessment of the proposal are:

- State Environmental Planning Policy (Major Projects) 2005
- State Environmental Planning Policy (Infrastructure) 2007
- State Environmental Planning Policy No. 55 – Remediation of Land
- State Environmental Planning Policy No. 64 – Advertising and Signage
- Darling Harbour Development Plan No. 1
- Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005
- Sydney Harbour Foreshores & Waterways Area DCP
- Ultimo Pyrmont Section 94 Contributions Plan, and
- The Master Plan for the former GPO site, March 2000;

The Department's consideration of relevant SEPPs and EPIs is provided in **Appendix D.**

4.4 Objects of the EP&A Act

Decisions made under the EP&A Act must have regard to the objects of the Act, as set out in Section 5 of the Act. The relevant objects are:

(a) to encourage:
- *(i) the proper management, development and conservation of natural and artificial resources, including agricultural land, natural areas, forests, minerals, water, cities, towns and villages for the purpose of promoting the social and economic welfare of the community and a better environment,*
- *(ii) the promotion and co-ordination of the orderly and economic use and development of land,*
- *(iii) the protection, provision and co-ordination of communication and utility services,*
- *(iv) the provision of land for public purposes,*
- *(v) the provision and co-ordination of community services and facilities, and*
- *(vi) 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, and*
- *(vii) ecologically sustainable development, and*
- *(viii) the provision and maintenance of affordable housing, and*

(b) to promote the sharing of the responsibility for environmental planning between the different levels of government in the State, and

(c) to provide increased opportunity for public involvement and participation in environmental planning and assessment.

The Department has considered the objects of the EP&A Act and considers that the application is consistent with the relevant objects. The assessment of the application in relation to these relevant objects is provided in Section 5.

The EP&A Act adopts the definition of Ecologically Sustainable Development (ESD) found in the *Protection of the Environment Administration Act 1991*. Section 6(2) of that Act states that ESD requires the effective integration of economic and environmental considerations in decision-making processes and that ESD can be achieved through the implementation of:

(a) the precautionary principle - namely, that if there are threats of serious or irreversible environmental damage, lack of full scientific certainty should not be used as a reason for postponing measures to prevent environmental degradation. In the application of the precautionary principle, public and private decisions should be guided by:
- *(i) careful evaluation to avoid, wherever practicable, serious or irreversible damage to the environment, and*
- *(ii) an assessment of the risk-weighted consequences of various options,*

(b) inter-generational equity—namely, that the present generation should ensure that the health, diversity and productivity of the environment are maintained or enhanced for the benefit of future generations,

(c) conservation of biological diversity and ecological integrity—namely, that conservation of biological diversity and ecological integrity should be a fundamental consideration,

(d) improved valuation, pricing and incentive mechanisms—namely, that environmental factors should be included in the valuation of assets and services, such as:
- *(i) polluter pays—that is, those who generate pollution and waste should bear the cost of containment, avoidance or abatement,*
- *(ii) the users of goods and services should pay prices based on the full life cycle of costs of providing goods and services, including the use of natural resources and assets and the ultimate disposal of any waste,*
- *(iii) environmental goals, having been established, should be pursued in the most cost effective way, by establishing incentive structures, including market mechanisms, that enable those best placed to maximise benefits or minimise costs to develop their own solutions and responses to environmental problems.*

The Department has fully considered the objects of the EP&A Act, including the encouragement of ESD, in its assessment of the application. A detailed assessment of ESD issues is contained at Section 5 of this report. On the basis of this assessment, the Department is satisfied that the proposal encourages ESD, in accordance with the objects of the EP&A Act.

4.5 Statement of Compliance

In accordance with section 75I of the EP&A Act, the Department is satisfied that the Director General's environmental assessment requirements have been complied with.

5. CONSULTATION AND SUBMISSIONS

5.1 Exhibition

Under section 75H(3) of the EP&A Act, the Director General is required to make the environmental assessment (EA) of an application publicly available for at least 30 days. After accepting the EA, the Department publicly exhibited it from Wednesday 7 April 2010 until Friday 7 May 2010 on the Department's website, and at the offices of the Department of Planning and City of Sydney Council. The Department also advertised the public exhibition in the Sydney Morning Herald and Daily Telegraph on 7 April 2010, and notified landholders, local community groups and relevant State and local government authorities in writing.

The Department received 13 submissions during the exhibition of the EA: 4 submissions from public authorities and 9 submissions from the general public and special interest groups.

A summary of the issues raised in submissions is provided below.

5.2 Public Authority Submissions

Four (4) submissions were received from public authorities.

RTA - Sydney Regional Development Advisory Committee did not object to the project and provided a number of conditions that deals with car parking and traffic management.

City of Sydney Council did not object to the project and raised questions about the details of the trigeneration plant (although it supports trigeneration), urban design, heritage (exploitation of the sandstone from the site) air quality, noise impact, cooling towers, public domain, hours of operation and traffic. A number of conditions were also suggested which the Department has incorporated into the approval.

Department of Transport did not object to the project and highlighted a number of transport initiatives relevant to Ultimo. Other matters outlined relate to on-site parking and the desire for the development to provide a pedestrian through link as indentified under the Master Plan.

Department of Environment, Climate Change and Water (DECCW) lodged two submissions neither of which objected to the project in principle. The first submission was in respect to the EA and this outlined the licensing requirements of the proposed trigeneration plant as it will be above the threshold of the capacity to burn more than 3 Megajoules of fuel per second, and the emergency stand-by diesel generators because they have the capacity to generate more than 30MW of electrical power. Other matters raised in the submission included inadequate air and noise impact assessments.
DECCW's second submission was made in response to the Preferred Project Report. DECCW indicated specific licensing conditions will be prepared at the completion of the final designs; however, outlined certain conditions that would be imposed regulating air and noise emissions. DECCW also noted that proposed construction activities were inconsistent with City of Sydney Council recommended hours of operation.

5.3 Public Submissions

Nine (9) submissions objecting to the development proposal were received from the public, including the Ultimo Village Voice and Pyrmont Action Group.

Of the 9 public submissions, all objected to the project. The key issues raised in public submissions are listed in Table 2.

Table 2: Summary of Issues Raised in Public Submissions

Issue	Proportion of submissions (%)
Parking	60%
Loss of views	50%
Overshadowing of Bullecourt building	50%
Height of the proposed building	40%
Residential amenity - Bullecourt	40%
The development will affect light to the pedestrian /cycle walkway, which is adjacent to the Western Distributor and leads to the lift resulting in a gloomy and unsafe environment.	30%
Street Activation - shops	30%
Tri Grid generation	10%
Security	10%
Visual separation between Global Switch 1 and the Proposed Global Switch 2	10%
Noise Impact	10%

The Department has fully considered the issues raised in submissions in its assessment of the project in Section 5 of this report.

5.4 Proponent's Response to Submissions

The proponent provided a response to the issues raised in submissions (see **Appendix B**). The response included a Preferred Project Report which includes an amendment to the entry canopy over the pedestrian entrance from Pyrmont Street. The Statement of Commitments has also been amended to reflect the canopy changes as well as a commitment to provide safeguards against any potential environmental impacts that may result during the construction and operation stages of the project.

6. ASSESSMENT

The Department considers the key environmental issues for the project to be:

- Height, bulk and scale;
- View loss;
- Overshadowing;
- Trigeneration and ESD;
- Air quality;
- Noise impact;
- Street activation;
- Parking;
- Construction impacts; and
- Developer contributions.

6.1 Height, Bulk and Scale

6.1.1 Height

A Master Plan Strategy was adopted by the Minister for Urban Affairs and Planning on the 12 November 1999 and implemented in March 2000 to assist in guiding future development on both this site and the adjoining properties.

At the time the Master Plan applying to the site was conceived it was envisaged that the subject site would be developed as residential and/or business uses. The Master Plan stipulated maximum heights across the site of between R.L 124.5 at the northern end of the site and RL 131.56 at the southern end along Quarry Street (refer **Figure 8**).

These height limits are based on normal residential/commercial floor to ceiling heights, which differ substantially from the needs of a Data Centre which requires a significantly greater floor to ceiling clearance to accommodate the extensive amount of plant and machinery needed to generate the required power.

The proposed building has heights ranging from 35.315 metres to 41.165 metres and contains four (4) levels above ground of technical floor space with a floor to ceiling height of 5.475 metres. Above this are two (2) levels of plant, one of which has a 9.0 metre floor to ceiling height and the other at 7.5 metres. Contained within both these levels are nine (9) gas engines, 27 diesel engines and 48 cooling towers which constitute the key plant elements of the building's tri-generation and back-up power supply systems.

Whilst it is normal practice that plant and machinery are located on the roof of the building, GSS2 has purposely been designed to contain all plant equipment within the building's roof line to assist in minimising the intrusive nature that is often associated with plant and machinery.

Under Darling Harbour Development Plan No 1, which is the statutory instrument in the precinct, there are no height limits or floor space ratios which regulate built form.

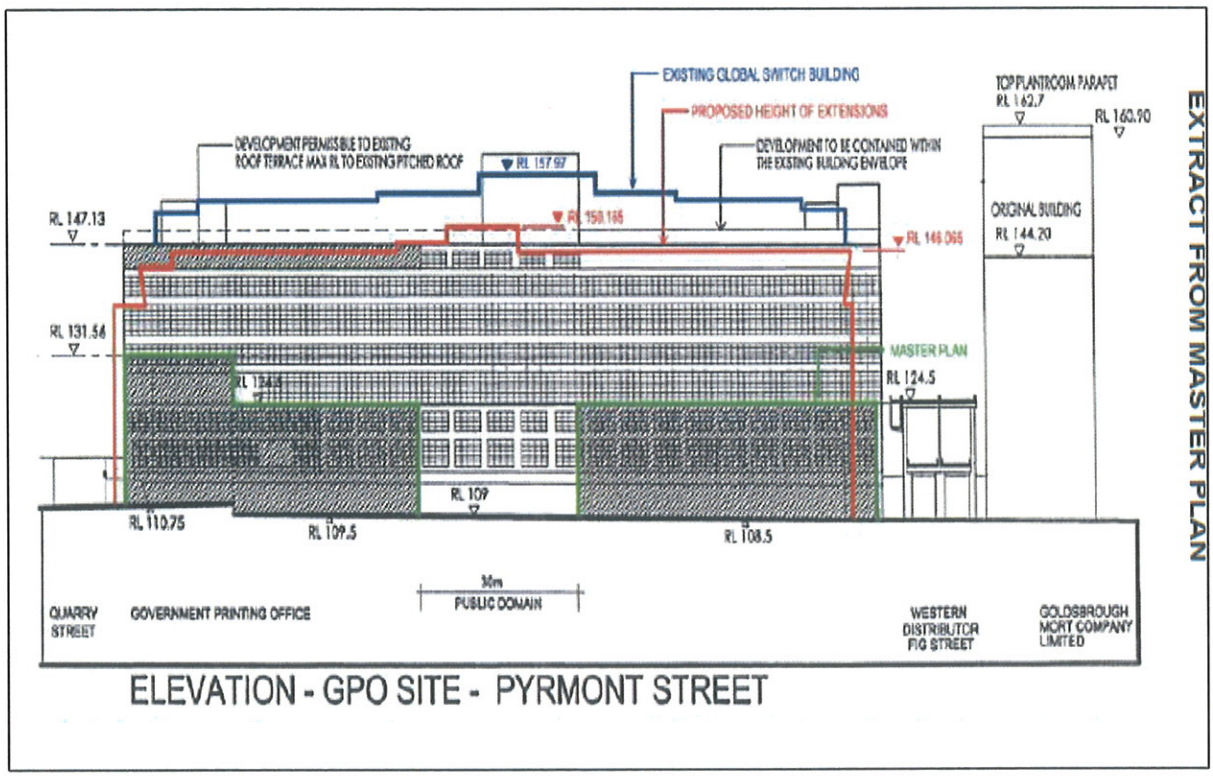

Figure 8 – Master Plan height limit/proposed envelope and existing GSS1 envelope.

The proposed height for the new GSS2 facility falls below the existing GSS1's eastern building parapet height. This variation is considered by the Department to be acceptable as it provides a built form for the GSS2 building that steps down from GSS1. The building height is also appropriate in the context of the surrounding development, such as the Goldsborough Mort building immediately to the north and Bullecourt residential development complex to the south.

Although the proposal exceeds the Master Plan height control by up to 25.6 metres, the Department accepts that a height greater than the current Master Plan is justified in the context of the requirements of the development, consistency with the surrounding built environment, minimal amenity impacts, and that all plant and equipment is contained within the building.

6.1.2 Bulk and Scale

Under the provisions of the Master Plan, the maximum total floor space permitted on both the GSS1 and GSS2 sites is 47,300m^2. The GSS1 building site (former GPO) had a maximum 35,800m^2 permitted. However, the proponent has advised that in fact only 27,975m^2 was initially built. This was increased by 793m^2 to 28,768m^2 in 2008 under modification. The proposed GSS2 building will accommodate 22,285m^2 of business/technical gross floor area with an additional 15,227m^2 of dedicated plant and machinery. The overall gross floor space of both the GSS1 and GSS2 buildings will be 51,053m^2 (excluding the plant area of 15,227m^2 within GSS2). This represents an increase in gross floor space of 3,753m^2 or 8% over the maximum 47,300m^2 under the Master Plan. The Department believes that the increase in floor space does not adversely contribute to the bulk of the building, given that the building envelope has acknowledged the southern adjoining residential building (known as Bullecourt) by introducing articulated design features and the stepping down at the southern building elevation to be comparable in scale, thus reducing the visual impact of the GSS2 building on residential apartments.

The Department is satisfied that the bulk and scale of the building is compatible to the buildings along the western edge of Darling Harbour, and the south-eastern corner of the building steps down to be comparable in height with the Bullecourt residential complex. The setback of the building is also consistent with prevailing setbacks with adjacent buildings, ensuring there is a continuous uniform edge along Pyrmont Street. The Department considers the building is well designed and can appropriately integrate with the GSS1 building.

Figure 9 – Proposed building and its surrounds

6.2 View Loss

The proposed development will result in a loss of views from the southern adjoining Bullecourt residential complex, which has frontages to Harris Street, Pyrmont Street and Quarry Street. The issue of view loss was raised in public submissions and in response the proponent has provided a detailed assessment of view loss impacts in their PPR. Notably, view loss impacts are limited to the two buildings directly to the south of the site at the Bullecourt building complex.

Bullecourt Western building (444 Harris Street).This building comprising 100 apartments has its main frontage to Harris Street (west) with a secondary frontage to Quarry Street (north). These apartments face west or face east over a central courtyard area. From the view loss diagrams and PPR, two apartments on the north eastern corner of the building on levels 8 and 9 have windows facing north and east. The northern windows directly face the GSS1 building with city views to the north-east across the proposed GSS2 site and down Quarry Street.

The east facing windows have a view of the city over the top of the northern end of the Quarry Street building. However, there is view loss of approximately 50% of the view from the north facing windows. (refer to **Figure 10)**.

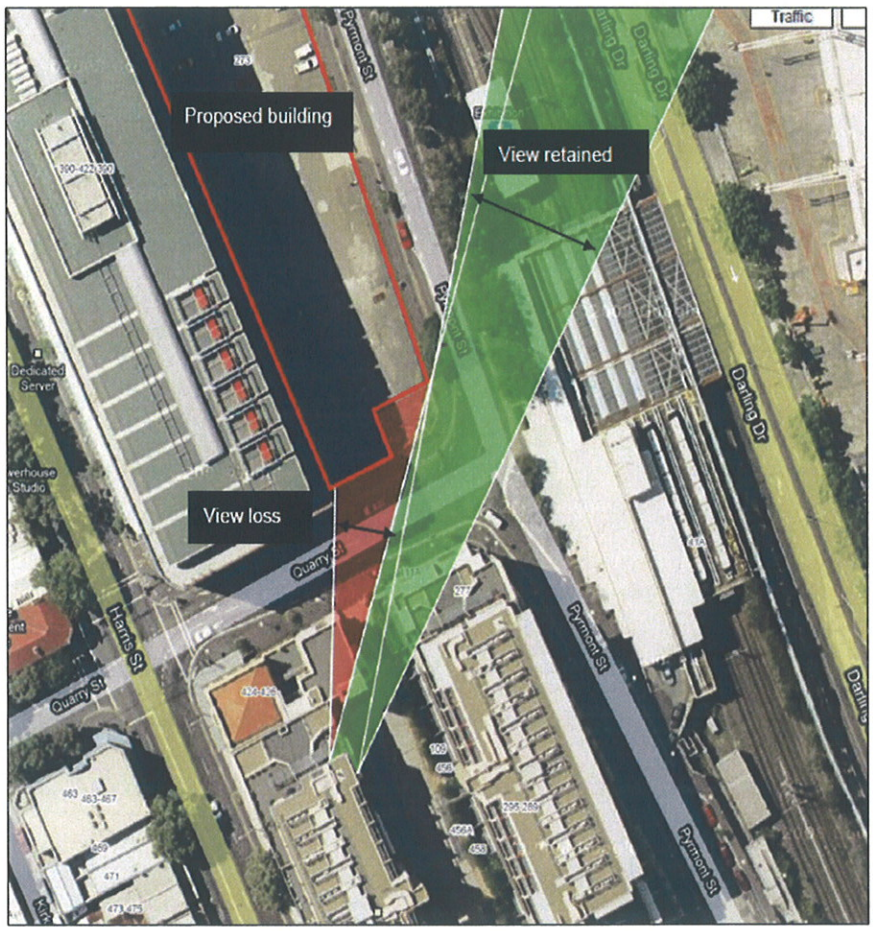

Figure 10 – Views from north east apartment at level 9 of Harris Street

Three apartments in the north-eastern corner of the building at levels 5, 6 and 7 with a frontage to Quarry Street have corner windows facing north and east. These windows currently have a view to the north-east across the GSS2 site and down Quarry Street to the Exhibition Centre and the city. The proposed development will obstruct part of the view to the north, however, a majority of the view corridor towards the city is maintained (refer to **Figure 11).**

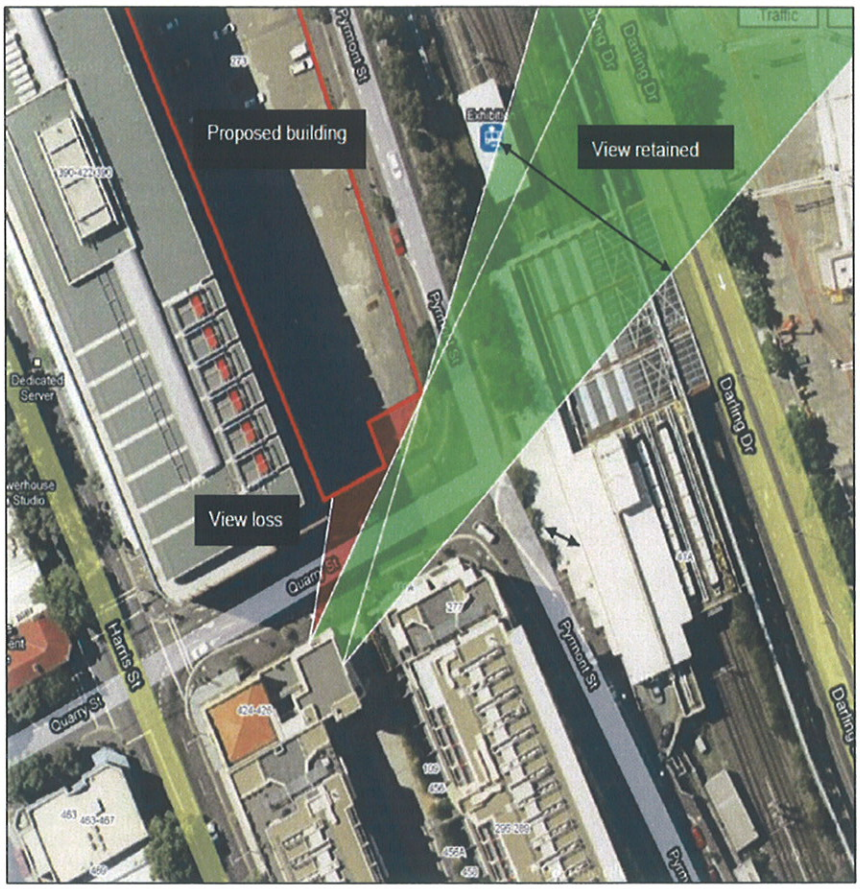

Figure 11 – Views from north east apartments at 444 Harris Street, Pyrmont

Bullecourt Eastern building (287 Pyrmont Street), six apartments in the south-east corner of the building at levels 3 to 8 and 9 have windows facing west and north. The north facing windows currently view directly across the subject site to the Western Distributor and the Goldsborough Mort building, and the upper levels have vistas of the city to the north-east down Quarry Street (refer to **Figure 12** below). While the proposed development will obstruct the view to the north, more than 50% of the view corridor is maintained.

After inspection of the subject site and adjoining premises, and reviewing the PPR documentation, the Department acknowledges that there will minor view loss from the western Harris Street building. However, these views are already obscured by 287 Pyrmont Street and views towards the CBD skyline will still be available. The same can be said for the eastern building at 287 Pyrmont Street, where view loss to the north will be obscured by the proposed GSS2 building, although maintained for the important, significant views towards the CBD skyline.

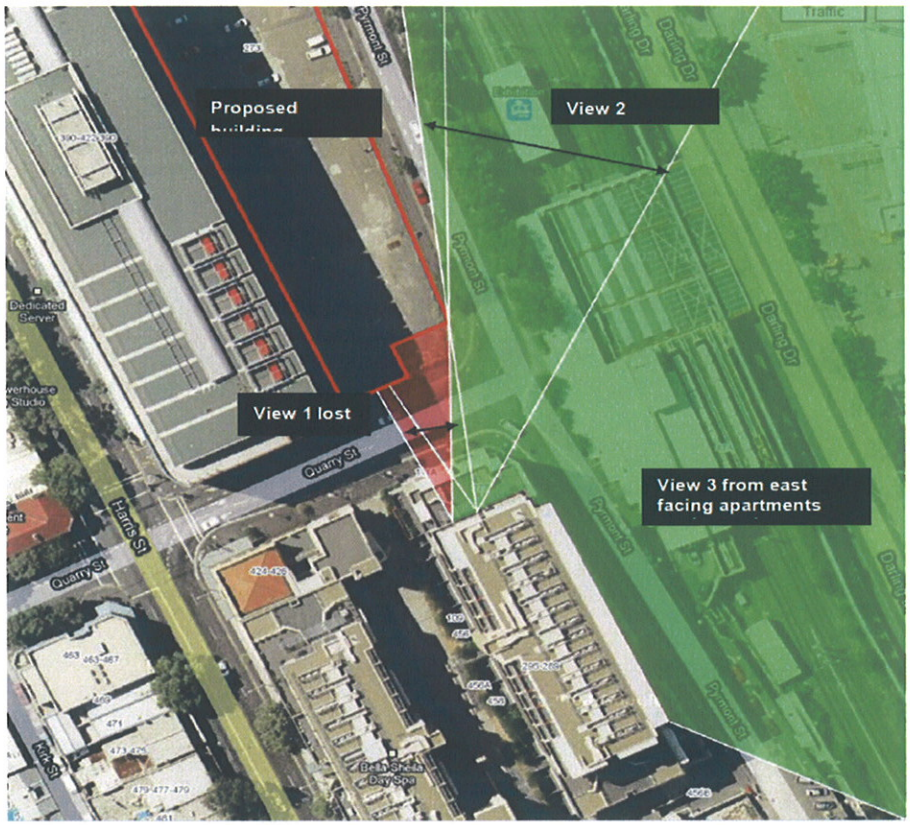

Diagram 4 **Views from north eastern and eastern apartments at 287 Pyrmont**

view 1 view 2 view 3

Figure 12 – Views from north eastern and eastern apartments at 287 Pyrmont Street

As the Master Plan at the time provided controls of mixed residential/commercial development, the proposed GSS2 building differs considerably to the intent of the Master Plan but not necessarily to the height, bulk and scale that would be appropriate for such a development. The increased height that involves the enclosure of the plant equipment will have an impact on views to north from the Bullecourt development due to the nature of the physical requirements of high ceiling heights for the plant equipment. However, this outlook is generally obscured by the presence of the Western Distributor and the existing GSS1 building.

The Department considers that most of the apartments in both buildings will still maintain the primary views towards the east along Quarry Street and onwards to the CBD skyline. Whilst views to the north will be impacted by the proposed GSS2, the subject site was earmarked for future redevelopment by the Master Plan and view loss could clearly be expected.

Overall, a minor view loss is considered reasonable given the prevailing built form of buildings along the western edge of Darling Harbour, the possibility of redevelopment within the precinct and therefore the ability of the proposed GSS2 building maintaining views of the CBD skyline.

6.3 Overshadowing

The proposed development will result in the overshadowing of a section of the northern and eastern building elevation to Bullecourt complex during the winter months.

The development proposal will overshadow this section of the residential complex during the winter months from 12 noon to beyond 3pm (refer to **Figure 13**).

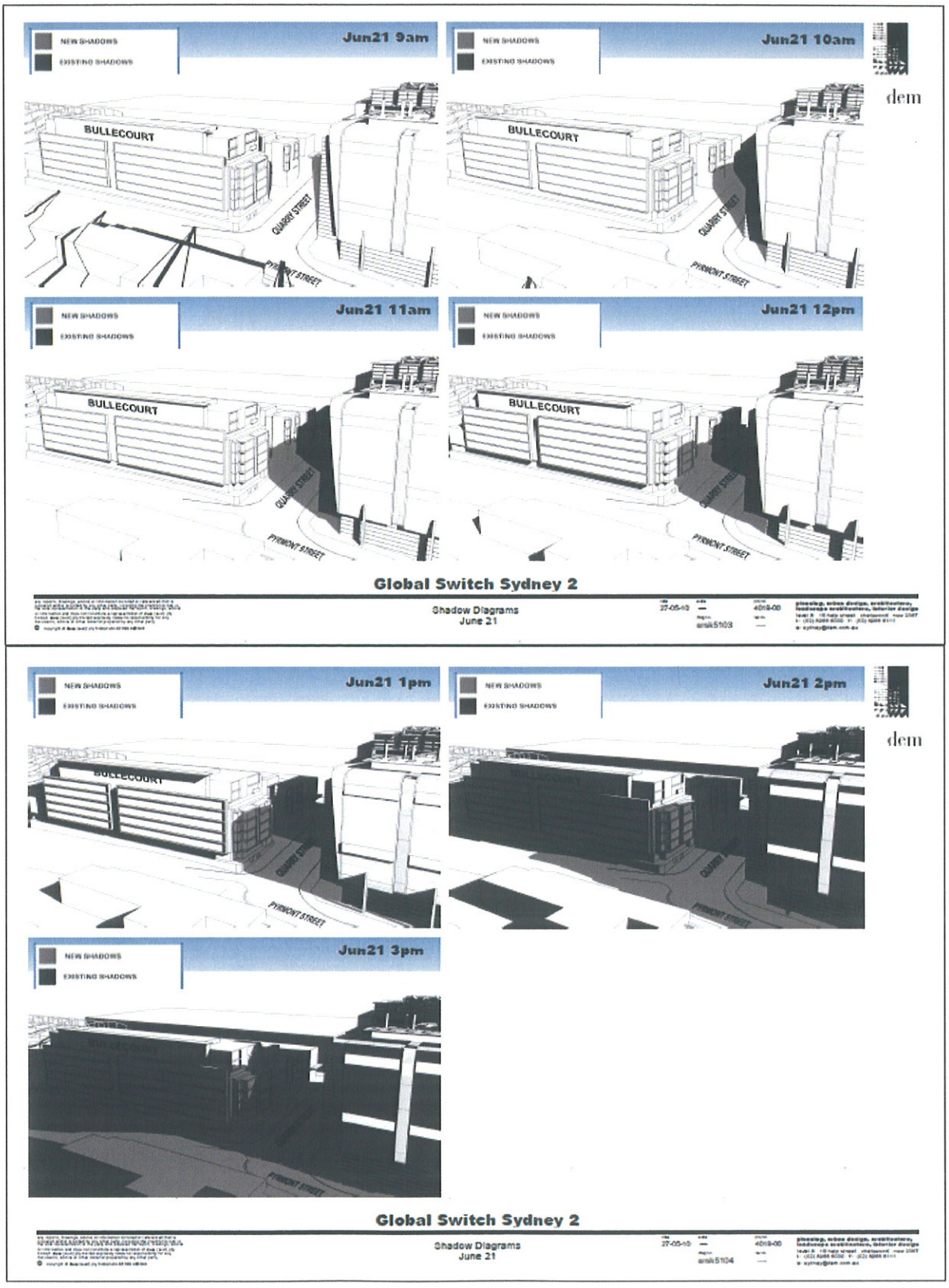

Figure 13 – Shadow diagrams for June 21

The shadow diagrams signify the amount of existing and increased overshadowing to the northern and eastern elevations of the Bullecourt building. The Department notes that the western portion of the residential complex on the corner of Harris and Quarry Street and the greater portion of the eastern elevation fronting Pyrmont Street, is already in shadow during winter from the existing GSS1 building.

The shadow diagram, indicate that the northern elevation of the lower Bullecourt building will experience a minor increase in winter afternoon shadow. In these circumstances, the amount of loss of solar access in the winter months is considered acceptable, given that there is three hours of sunlight from 9 am to 12 noon in winter to most of the northern building elevation. This level of solar access for medium to high density development is considered to be acceptable by the Department and is consistent with principles as outlined in the Residential Flat Design Code.

6.4 Trigeneration and ESD

The proposed building is considered to be a leading example of the ability to power buildings through ESD initiatives. The trigeneration component of the development provides more environmentally sustainable outcomes than the traditional way in which buildings are powered.

Trigeneration generates electricity on-site and utilises the heat by-product of the electricity generation to power absorption chillers and some heating. For GSS2 to function efficiently, the primary energy source for the site will be natural gas that will be supplied via an augmentation of the existing pipe work infrastructure surrounding the site. In addition to the use of natural gas as the primary fuel source, the building will house an on-site energy storage capability of underground diesel fuel storage tanks. These will service the emergency back up diesel generators and provide emergency backup in case of energy connection failure.

The proponent cites a number of advantages in using trigeneration to achieve ESD than conventional methods of powering buildings, including:

- The fuel source is natural gas so the CO2 emissions are much lower compared with coal typically used in NSW to generate grid electricity. It is anticipated that the use of trigeneration would save approximately 45% of the CO2 emissions. This would equate to a saving of 123,000 tonnes of CO2 per year equivalent to the CO2 produced by 42,000 cars.

- Excess power generated from the new operations is proposed to be delivered to the existing GSS1 facility, thus providing further reductions to the load on the power grid and subsequently reducing greenhouse gas emissions even further.

- The heat produced by the gas plant is used to drive absorption chillers, saving the relatively large electricity use associated with electric chillers. For Global Switch, this amounts to several Megawatts in power savings of grid electricity per annum.

- As the electricity is generated on-site, there are no transmission losses with zero impact on the EA power grid and a significant reduction in peak local power demand requirements.

- All wastewater will be collected on site, treated and reused to reduce water usage. The proposal includes onsite rainwater / plant water harvesting and recycling and on-site sewage/black water storage, treatment and re-use.

- Landscaping to the roof to reduce heat island effects.

The key issue raised by DECCW in relation to the trigeneration plant is its capacity to burn more than three Megajoules of fuel per second. To this end, the activity will require an Environment Protection Licence (EPL) under the provisions of the *Protection of the Environment Operations Act 1997 (POEO Act)*. The proposal also has the potential to exceed the threshold for the *Load Based Licensing* Scheme under the POEO Act.

Furthermore, DECCW has raised concerns in relation to the licensing and regulatory emission requirements for the emergency stand-by diesel generators. DECCW has indicated to the Department that these issues will be considered in more detail by DECCW with ongoing collaboration between relevant government departments.

that these issues will be considered in more detail by DECCW with ongoing collaboration between relevant government departments.

Although DECCW is unable to prepare comprehensive licence conditions until the final designs are completed and recommended amelioration measures are adopted, DECCW have advised that the licence will include appropriate conditions to control air emission levels, a selective catalytic reduction system to be in use when the tri-generation systems is in use, limiting the emergency sequencing of the stand-by diesel generator testing and noise limits and monitoring.

Overall, the Department is supportive of the installation of the trigeneration units, subject to the regulatory requirements of DECCW. DECCW has indicated they are able to licence the building, and the Department is satisfied that licensing conditions, when adopted, will ensure the proposed development complies with the relevant regulatory framework whilst making an important contribution towards ESD. A recommended condition of approval will require the building to obtain an Environment Protection Licence under the POEO Act.

6.5 Air Quality

Air emissions from the nine gas reciprocating engines (trigeneration units) will include oxides of nitrogen and to a lesser extent carbon monoxide. Trace elements of sulphur dioxide, particulate matter and air toxins are also expected. Air emissions from the emergency diesel engines (that will only run during testing and during the unlikely event of gas and electrical network failure) are expected to include oxides of nitrogen, particulate matter, sulphur dioxide, carbon monoxide and air toxins.

The proponent has carried out an air impact assessment as part of the EA which was reviewed by DECCW. The assessment concluded that emissions from the project will not result in unacceptable air quality impacts and will not adversely affect sensitive receivers. This assessment was not initially considered acceptable by DECCW.

Whilst DECCW initially recommended at the EA stage that further information be provided in relation to nitrogen oxide (NOx) emissions and an air impact assessment on the emergency stand-by diesel generators, DECCW has now indicated, after reviewing the PPR, that air quality impacts have been generally addressed by the proponent by a more detailed impact assessment.

Notwithstanding, DECCW did, however, note that exhaust gas velocities are unrealistically high and emissions of carbon monoxide (CO) from the trigeneration plant will exceed the requirements in the *Protection of the Environment Operations (Clean Air) Regulation 2010.*

In accordance with *Protection of the Environment Operations (Clean Air) Regulation 2010,* the trigeneration plant must comply with either a CO emission standard of 125 mg/m3 or a volatile organic compound (VOC) emission standard of 40 mg/m^3. DECCW has stated that this issue can be addressed using an oxidation catalyst within the selective catalytic reduction system.

DECCW has recommended a number of licensing requirements to address potential air quality impacts address. They are outlined as follows:

- A nitrogen oxide limit of 50mg/m^3, an ammonia limit of 3mg/m^3, and volatile organic compound (VOCs) and carbon monoxide limit of 40mg/m^3 and 125mg/m^3 respectively.
- A requirement that the selective catalytic reduction system (that is required to achieve the nitrous oxides limit of 50mg/m^3) is in operation whenever the trigeneration system is in use.
- Limitations on the sequencing and timing of emergency stand-by generator testing, in order to ensure compliance with ambient air quality criteria.

The Department considers that air quality impacts have been adequately addressed, and is satisfied that air quality impacts can be appropriately controlled by DECCW's licensing requirements to mitigate potential air quality impacts. A recommended condition of approval will require the building to obtain an Environment Protection Licence under the POEO Act.

6.6 Noise Impact

The development will give rise to noise emissions from roof mounted cooling towers, 4MW gas engines, 1,500kW diesel engines, UPS system, and transformers. The Acoustic Report prepared as part of the EA outlines the noise attenuation measures for the project as follows;

- Equipment specification;
- Equipment arrangement, discharge and intake locations;
- Incorporation of inlet and outlet attenuators to roof mounted cooling towers;
- Engine and plant room acoustic wall and facade specifications controlling noise breakout;
- Air intake and exhaust duct specification, plenums and in-duct sound attenuators for gas and diesel engines; and
- Acoustic barriers to transformers.

The Department has considered the Acoustic Report, the advice of DECCW, the locations of the noise measurement monitors (in GSS1 roof north west corner, street level south on the GSS2 site, street level corner Pyrmont and Quarry Streets, street level Goldsbrough Apartments and street level corner Harris and Quarry Street), which are considered to be representative and the above attenuation measures, and considers that all reasonable and feasible measures have been adopted, leading to an acceptable acoustic outcome.

In addition, the findings of the noise survey in the Acoustic Report indicated that there are very high traffic noise levels from the Western Distributor which dominate the existing noise environment during all periods of the day. The Acoustic Report further submits that as the background noise during the night time falls, monitoring noise levels during the night at street level around the site and the adjoining Bullecourt development will be ongoing and in accordance with the NSW Industrial Noise Policy.

Based on the above information, DECCW required additional monitoring of background noise levels in order to establish appropriate noise assessment criteria for noise-sensitive receptors that are away from the Western Distributor. The additional monitoring also included the existing GSS1 building in terms of background noise impact. A copy of the proponent's PPR was made available to DECCW for comment in which they raised no further concern with the noise monitoring undertaken.

The Department considers noise impacts can be mitigated by the implementation of the above noise attenuation measures. In addition, as part of the licensing conditions for the development, DECCW will specify relevant noise limits, monitoring and reporting conditions. Such licensing requirements will ensure that the building, including its plant and equipment, will not give rise to detrimental noise impacts on sensitive surrounding residential receivers. A recommended condition of approval will require the building to obtain an Environment Protection Licence under the POEO Act.

6.7 Street Activation

The Pyrmont Action Group and individuals raised concern regarding the lack of street activation along the Pyrmont Road frontage. City of Sydney Council also raised an urban design issue relating to the pedestrian access to the building and the treatment of that entry off Pyrmont Road. These issues include the continuous blank façade of the building, which does not provide a clear address and entry from Pyrmont Street, and that the northern pedestrian access to Darling Harbour will be a dark and unsafe tunnel.

The Department's view is that the proposed GSS2 building is not a public building nor will it accommodate conventional commercial activity that interacts with the outside world. Therefore, retail or commercial uses at street level are not suitable or compatible with the building's function.

Figure 14 – Proposed entry

Notwithstanding, the proponent via the PPR sought to improve the building's address by amending the original design entry and canopy so it now contains a large glazed entry lobby which covers 10 metres of frontage, together with proposed security and building lighting to the street level colonnade and new street lighting. The Department considers that this will provide the building with a visual appearance consistent with that of typical commercial buildings.

6.8 Parking

Submissions variously raised concerns about both the lack of parking and the excessive amount of parking. The proponent has provided parking commensurate to the 12 employees intended to service the facility on a 24-hour basis. The Department is of the view that as employees are required to service the facility at various times of the day and night, the 12 car spaces are adequate and not excessive. The building is a unique purpose data storage facility and unlike a traditional commercial building that would ordinarily require a far greater number of car parking spaces. For this reason, the 12 car parking spaces allocated seems both reasonable and acceptable.

6.9 Construction Impacts

The construction of the basement would require bulk excavation of around 12m to 17m below existing ground levels. Existing fill over weathered bedrock is at depths between 0.24m and 0.7m. Below this is Hawkesbury Sandstone. As excavation is within 25m of the existing light rail corridor, the recommended conditions of approval will require the proponent to submit detailed construction and excavation plans to RailCorp and Sydney Metro Transport Pty Ltd for review prior to the issue of a Construction Certificate. This condition will ensure the proposed works will not affect the structural integrity of the adjacent rail corridor and its infrastructure. Other construction related impacts such as noise and traffic, can be adequately dealt with by recommended conditions of approval, including those proposed by City of Sydney Council.

6.10 Developer Contributions

City of Sydney Council's *Ultimo Pyrmont Section 94 Development Contributions Plan,* applies to the site. The data storage facility use does not fall into a number of land use categories such as business, showrooms, warehouses, industrial, hotel accommodation supermarkets and licensed clubs. As the amount to be paid by the proponent requires further assessment, the proponent will consult in accordance with a recommended condition with City of Sydney Council (the administrator of the Plan) and SHFA (who is the beneficiary of the contribution) to determine an agreed contribution. The amount of the contribution will be notified to the Department of Planning, and endorsed by the Director General.

6.11 Public Interest

The proposed energy saving initiatives, improvements to the public domain, employment generation and critical infrastructure services offered by GSS2 will benefit the wider Sydney wider community. The ESD measures will minimise the energy demands placed on Sydney's infrastructure services.

Global Switch intends to promote the GSS2 as a showcase facility in its global portfolio, which will benefit NSW and promote the international status of Sydney.

The GSS2 site has stood as a disused site in the Darling Harbour precinct for many years. GSS2 provides the opportunity to use the land parcel with an iconic building that completes the western edge of the Darling Harbour precinct.

These factors contribute positively to the broader public interest particularly given the proposal can be constructed and operated within acceptable amenity criteria and will contribute particularly to the principles of ESD.

7. CONCLUSION

The proposed Global Switch Sydney 2 data centre is the culmination of extensive planning, architectural/engineering design with initiatives in environmentally sustainable development, which will result in a building that will be recognised as a world class data centre with a strong visual identity in the Sydney CBD landscape

GSS2 is an opportunity to reverse the critical shortage of data storage facilities within close proximity to the CBD. Addressing this need is essential in attracting and retaining major investment in Sydney and ensuring the city retains its strategic importance in the Asia Pacific region.

Any potential adverse environmental impacts will be satisfactorily managed through the implementation of adequate environmental management safeguards.

The proposal is generally consistent with the requirements of the relevant planning instruments, policies and the underlying objectives of the controls. The Department has given consideration to the original Master Plan Strategy that was prepared for the site in 2000 and the context of the locality in terms of existing development and potential future redevelopment. Whilst variations have been sought by the proponent to certain provisions of the Master Plan Strategy, detailed justification for these departures have been documented and are accepted by the Department.

8. RECOMMENDATION

It is recommended that the Minister for Planning:

a) Consider all relevant matters prescribed under section 75J (2) of the PEA Act, indication those relevant matters prescribed by 75I (2) as contained in the findings and recommendations of this report;
b) Approve the project application, subject to conditions, under section 75J (1) of the EPA Act, having considered all relevant matters in accordance with 9(a) above; and
c) Sign the attached instrument of Approval (Tag A).

15.11.10

Daniel Cavallo
A/Director
Government Land and Social Projects

Chris Wilson
Executive Director
Major Projects Assessment

16/11/10

Richard Pearson
Deputy Director-General
Development Assessment & Systems Performance

APPENDIX A ENVIRONMENTAL ASSESSMENT

See the Department's website at http://majorprojects.planning.nsw.gov.au

APPENDIX B SUBMISSIONS

See the Department's website at http://majorprojects.planning.nsw.gov.au

APPENDIX C PROPONENT'S RESPONSE TO SUBMISSIONS

See the Department's website at http://majorprojects.planning.nsw.gov.au

APPENDIX D CONSIDERATION OF ENVIRONMENTAL PLANNING INSTRUMENTS

1.0 State Environmental Planning Policy (Major Development) 2005

Pursuant to clause 6(1) (a) of the SEPP, a project is declared to be a project to which Part 3A of the Act applies, where, in the opinion of the Minister, the development is of a kind:

(a) that is described in Schedule 1 or 2, or
(b) that is described in Schedule 3 as a project to which Part 3A of the Act applies, or
(c) to the extent that it is not otherwise described in Schedules 1–3, that is described in Schedule 5,

Under the SEPP, the land is described in Schedule 2 as being within the boundaries of the Sydney Harbour Foreshore Site (Map 9), with a capital investment value greater than $5 million. It is noted that Global Switch site falls outside the jurisdiction of City of Sydney local government area. In accordance with the provisions of Part 3A of the EP&A Act, due process has been followed in terms of this major project application.

On 7 November 2008, the Director General, as delegate of the Minister, formed an opinion that the project is a major project under clause 10 - Sydney Harbour Foreshore Sites of Schedule 2 to the MD SEPP, as it is *"development (with a capital investment value of more than $5 million) in the areas identified on Map 9 to this Schedule."* The Minister is the approval authority.

2.0 State Environmental Planning Policy (Infrastructure) 2007

The objectives of the Infrastructure SEPP are to facilitate the effective delivery of infrastructure by improving regulatory certainty through consistent planning management for infrastructure and providing greater flexibility in the location of infrastructure and service facilities throughout the State.

Schedule 3 of the SEPP lists traffic generating development that is required to be referred to the RTA. The project application was referred to the RTA on 18 February 2010 for comment. The Sydney Regional Development Advisory Committee (SRDAC) has since provided comments. Their recommendations and comments have been considered and where relevant have been included as Conditions and Advisory Notes to the project application to ensure that the impacts of the construction and ongoing operation of the development are appropriately mitigated.

The site is also located opposite the light rail line parallel to Pyrmont Street which may be defined as a rail corridor. Consultation was required under clause 85(1) (b) and 86(1) (b), as the project will involve:-

"85(1)(b): ***Development immediately adjacent to rail corridors*** *involves the placement of a metal finish on a structure and the rail corridor concerned is used by electric trains, or.*

86(1)(b): ***Excavation in, above or adjacent to rail corridors;*** *within 25 metres (measured horizontally) of a rail corridor."*

RailCorp and Metro Transport Sydney Pty Ltd. were advised of the development proposal by correspondence dated 17 June 2010. While there is no written response from either agency was received, appropriate recommended conditions require the proponent to liaise with RailCorp and Sydney Metro Transport Pty Ltd prior to the issue of a Construction Certificate.

3.0 State Environmental Planning Policy No. 55 – Remediation of Land

SEPP No. 55 requires the consent authority to consider whether the land is contaminated, whether remediation has occurred or is recommended and, if so, is the site suitable for the development proposed. As part of the application process, a geotechnical investigation of the site was undertaken as part of the EA. The advice confirms that borehole logs from the geotechnical investigation indicate only minimal areas of soil, with the site being predominantly sandstone bedrock exposed by previous excavation work. Whilst no analysis has been undertaken to date, the geotechnical report recommends that any soil that requires disposal off-site be classified and tested for contamination as part of the construction programme, prior to commencement of excavation on site. The Department is

satisfied that compliance with the geotechnical investigation report will mitigate any issues associated with site contamination.

4.0 State Environmental Planning Policy No. 64 – Advertising and Signage

As development consent is sought for the erection of business identification signage, the application is subject to assessment under the provisions of SEPP No 64. Corporate identification signage is to be installed on two elevations, to clearly identify the premises upon approach and as a landmark from distant locations. The signage will be complementary to the architectural appearance of the building, the style and colour reflecting the corporate logo of Global Switch. Four (4) identification signs are proposed as follows:-

- Pyrmont Street frontage – one (1) non-illuminated, embossed logo sign mounted at the height of RL 141 facing east towards the CBD. The diameter is approximately 6.0 metres.
- Pyrmont Street frontage – two (2) illuminated, wall signs mounted on the blade wall at the ground level lobby entry facing north and south along Pyrmont Street.
- Northern elevation - north facing, illuminated logo mounted at the height of RL 138 facing north towards the Western Distributor. The diameter is 6.0 metres.

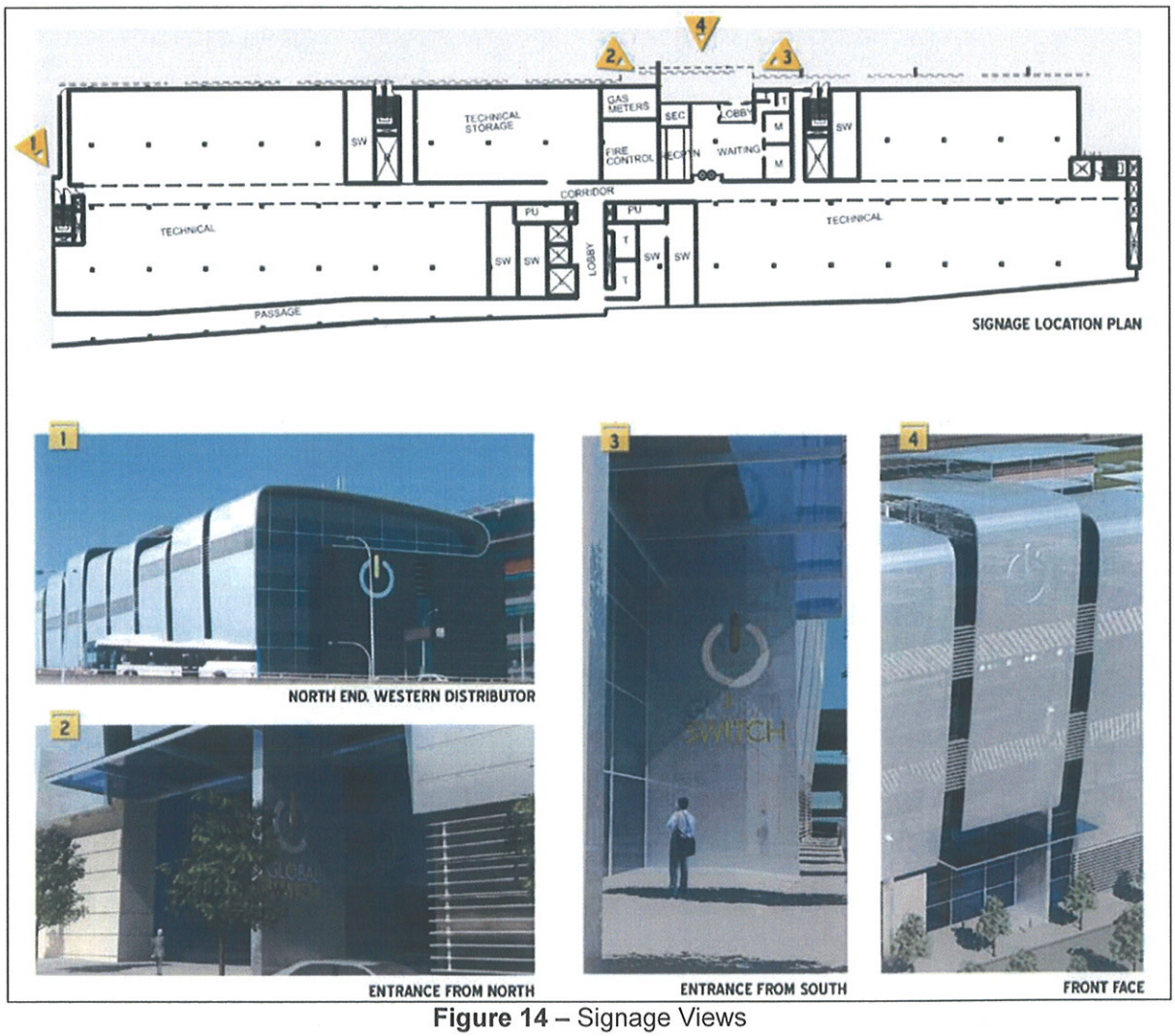

Figure 14 – Signage Views

The Department is of the view that the proposed building identification signage is considered to satisfy the assessment criteria of Schedule 1 of the SEPP, particularly in terms of visual compatibility with the character of the area and streetscape, and is of an appropriate scale and proportion to the GSS2 building.

5.0 Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005

The site lies within the boundaries of Sydney Regional Environmental Plan (Sydney Harbour Catchment) 2005 and is specifically located within the designated Foreshores and Waterways Area. The proposal is considered to comply with the aims and objectives of SREP 2005. The proposal does not require referral to the Foreshores and Waterways Planning and Development Advisory Committee because it is not development of a type listed in Schedule 2 of the SREP.

6.0 Sydney Harbour Foreshores & Waterways Area DCP

Due to the distance of the site from the foreshore, the Department does not consider the DCP relevant to the subject application.

7.0 Darling Harbour Development Plan No. 1

Darling Harbour Development Plan No.1 is the relevant environmental planning instrument that controls development of the Global Switch site within the Darling Harbour precinct. The Plan aims to encourage the development of a variety of tourist, educational, recreational, entertainment, cultural and commercial facilities within that area. In terms of the Plan's objectives, the proposal is consistent with the general intent of the Plan as the project will contribute to the diversity of uses encouraged within the Darling Harbour area and contribute to the visual vitality of the precinct. Notably, the Plan does not have any height or FSR controls.

In terms of land use, the proposed data centre can be suitably defined as "commercial premises" under the Plan and as such is permitted with consent. The former occupation of the GPO building by GSS1 was similarly defined when it was approved as a data centre in 2001. GSS2 and GSS1 will operate as a single data storage facility spread across two buildings.

8.0 Ultimo Pyrmont Section 94 Contributions Plan

A specific condition of approval will require the proponent to pay the determined contribution amount as agreed by City of Sydney Council and SHFA, and endorsed by the Director General.

9.0 The Master Plan for the former GPO Site

The Master Plan Strategy (MPS) was implemented in March 2000 to assist in guiding future development on both the former GPO site and the adjoining AML&F site. The original intent of the MPS was to give guidance to developers as to the prospective land uses deemed suitable for a strategic site on the western fringe of Darling Harbour. Since its inception, the MPS has generally achieved its objectives through the construction of Bullecourt residential complex and the preservation and adaptive reuse of the GPO building for specialised data centre operations which fit in with the MPS's desired commercial style uses.

The MPS initially envisaged either a residential and/or commercial use for the site. This changed when Global Switch converted the former GPO building into a data centre. Subsequently, with the proposal now to develop the site as an extension to GSS1, many of the planning guidelines identified in the MPS are no longer directly applicable.

This is relevant for considering aspects such as through site linkages, public realm spaces and the interrelationship of buildings within the former GPO site. The use of the existing GSS1 (GPO) building has no existing through site linkages and with the proposed GSS2 building requiring close proximity to the GSS1 building to ensure high levels of connectivity and easy access to each building, no new pedestrian links are provided through the proposed building.

In 2002, Global Switch Property (Australia) Pty Ltd was granted approval to occupy the former GPO site. However, when the MPS was implemented the land use requirement were more geared towards commercial/retail and tourism activity and, therefore, the concept now proposed is unable to achieve full compliance with various master plan guidelines.

The MPS nominated residential and commercial office uses for the site, and supported the use of the former GPO as a commercial usage or as an art gallery, with uninterrupted views of Darling Harbour

and the City. The later conversion of the GPO as GSS1 generated the potential for different controls for the adjoining site than those outlined in the MPS. Due to its specialised technical operations and the requirement for a highly secure internal environment, GSS1 building does not require natural light or views to the city nor does it support a large permanent building population commensurate with a typical commercial useage.

As detailed by the proponent via the EA, the requirement for large contiguous floor plates and the extensive engineering plant and equipment for the trigeneration system, GSS2 will exceed the nominated heights and building footprints shown in the MPS. Given these operational imperatives, the proposed increase in building height and footprint will not have a significant impact either the natural light penetration or the need for view opportunities through the eastern façade of the GSS1 building.

The EA has examined the matters of non-compliance with the MPS in terms of pedestrian links, connections to Pyrmont Street, open space areas and active street frontages with cross links, building heights built form/siting, modulation of building facades, building setbacks, public domain areas pedestrian links from the GPO site to Pyrmont Street/Harris Street and the under freeway ramp.

The Department has given consideration to the above variations to the MPS and is satisfied that the overall project generally complies with the principal intent of the MPS by:-

- Accommodating an appropriate built form, bulk and scale which responds in character to the context of Darling Harbour and Ultimo;
- Having a building that does not visually impact on the existing skyline of the western edge of Darling Harbour when viewed from the City;
- A building that steps down from the Goldsborough Mort building to the Bullecourt development; and
- A development that will have a positive visual impact on the streetscape and is in context with surrounding commercial development.