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ABERCROMBIE STREET - STUDENT ACCOMMODATION

BLOCKS 4s
Building Services

State Significant Development Report

18/12/2012

21/11/2012

Quality Management

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1 Introduction

1.1 The Central Park Development

The Central Park Development is located on the former Carlton United Brewery (CUB) site in Chippendale, NSW.

Across six hectares of a global city, Frasers Property has commenced construction to create a high quality, sustainable and mixed use development on Broadway – comprising apartments, offices, shops, restaurants and open space.

Frasers Property has formally named the entire precinct 'Central Park' – a name inspired by the site's close proximity to the CBD and Central Station, as well as the size and importance of the parklands to the whole project.

The project is underpinned by exemplary social and environmental sustainability initiatives – creating a new, people-centred gateway to Sydney's CBD.

Key features of the Central Park precinct masterplan include:

- *Publicly accessible open space with a new inner-city square – including significant public artwork, extensive landscaping, lighting and seating.*
- *Two iconic buildings along Broadway by renowned international architects Jean Nouvel (France) and Foster + Partners (United Kingdom). This is an unparalleled investment and vote of confidence in the southern CBD.*
- *Kensington Street is intended to be transformed into a people-centred laneway – drawing on the best of Newtown and Darlinghurst to provide a vibrant space for shops, galleries, restaurants, cafes and bars.*
- *Surface traffic will be markedly reduced by directing cars quickly into an integrated basement and underground road system. Sixty percent of vehicles will enter underground basements within 10 metres of the site's perimeter.*
- *A main pedestrian footway and cycle route running through the centre of the park connecting Balfour Street across to Broadway and joining Jones Street with the UTS precinct.*
- *Car parks flexibly designed to enable other uses in the future, if needed.*
- *On-site car share scheme and integration into the inner city bicycle network*
- *Thirty-three heritage items are to be retained and restored*
- *Retail space clustered in the north eastern corner of the site, creating a community-scale retail precinct*
- *Building heights are greatest close to the city and lower towards Chippendale, mediating between the CBD and inner residential areas, and ensuring significant sunlight in the main park*

Central Park is at the forefront of environmental sustainability initiatives across the country. We are striving for the highest environmental rating across the entire precinct. The site will be the largest urban development in Australia to introduce on-site tri-generation (known as 'green transformers') for power, heating and cooling.

The site is bounded by Broadway Road to the north, Abercrombie Street to the west, O'Connor and Wellington Streets to the South, and Kensington Street to the east.

1.2 Abercrombie Street Student Accommodation

Frasers Property Australia's mission is to set a new benchmark in quality accommodation developments. Constantly scouring the world for innovative design or technological initiatives to bring to local markets, and interpreting new concepts for local conditions, Frasers work with the very best international and local award-winning architects and designers.

Frasers, in joint venture with Sekisui House may have a long term interest in this student accommodation facility. Frasers is committed to the success and suitability for the whole life cycle of each of its developments.

Every Frasers development has a specific focus on high quality design, sustainability, and community engagement to ensure that each development enhances the economic, social, and environmental attributes of its local community. Development sites are specifically chosen to enable active transport by its residents, with attributes including secure bicycle storage, and close proximity to public transport hubs, walking paths and amenities.

The Frasers development at Abercrombie St, Central Park comprises of fourteen (14) storeys and includes residential accommodation for 823 students, a variety of communal recreation, dining and study facilities, rooftop terraces, administration facilities, ground floor retail and basement. The basement also contains the next stage of the Central Park precinct-wide central thermal plant tri-generation plant. These areas have been classified in accordance with Part A3 of the Building Code of Australia (BCA) 2012 as follows:

- Student Accommodation Areas on Levels 00-14 classified as Class 3.
- Retail areas on Level Gnd and 00 classified as Class 6.
- Basement areas Class 7a.

The development also makes use of low carbon and reduced waste opportunities available from the overall Central Park development, as described in the following section.

The design objective is to provide a facility which will optimise, within appropriate commercial constraints, the opportunities for the reduction in the use of energy and water. The design will aim to reduce electricity consumption, which has a significant negative greenhouse gas implication through the use of coal for electricity generation. Water usage in the building will also be minimised as it is a scarce resource.

Low energy use and reduced water consumption will be achieved by the design of environmentally efficient systems with the capability to closely control operation. Unnecessary over ventilating, cooling, heating and water consumption is avoided through design of these systems.

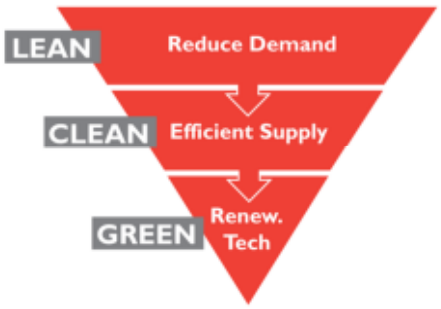
All building services systems will be designed to meet the Building Code of Australia and relevant associated Australian standards that are current at the time of this report.

Some specific system design features under consideration are listed as follows:

- Low flow rate sanitary fixtures to conserve non-potable water consumption and reduce flow to sewers.
- T5 efficient fluorescent lighting system with zone switching to reduce electricity consumption.

1.3 Precinct Approach

The adjacent Central Park Development precinct design has followed the Lean, Clean and Green energy hierarchy, which prioritises energy reductions first through passive design and energy efficiency measures, then through large scale implementation of low carbon technologies such as the introduction of onsite generation through Tri-generation.



This three-step process follows a common sense approach and understands the cost of carbon abatement through technology application, i.e. the hierarchy represented in the figure describes the most cost effective route to support the resource consumption aspirations for the wider Central Park precinct.

Each building is to target a minimum 5 Star Green Star standard as well as the incorporation of site wide initiatives of a central thermal plant and central water recycling plant. The development of the Abercrombie Street student accommodation will emulate site wide environmental initiatives, but will not specifically target a Green Star rating, as due to the space use mix and spatial differentiation of the blocks, the buildings do not meet the eligibility criteria of any pre-existing Green Star tools.

1.4 Centralised Utilities Provided at Central Park

Tri-generation plant will be installed on the site to produce electricity via the combustion of natural gas. The by-product of producing electricity via a gas engine is waste heat. The waste heat energy is in equal order of magnitude to the electrical energy produced. This waste heat is then converted into hot water and chilled water.

The hot and chilled water is to be reticulated to the Abercrombie Street student accommodation building where heat exchangers will allow the building to make use of the services provided by the Central Thermal Plant. Thermal energy storage will also be employed to balance energy demand between peak and off-peak time, thus reducing the requirements for heat rejection.

The buildings heating and cooling loads are to be provided by the Central Thermal Plant.

The central recycled water treatment plant is to consist of a 1,000kL recycled water plant. The recycled water treatment plant is to utilise all of Central Parks sewerage as well as sewer mining to treat blackwater to a Grade A standard. This non potable water will be reticulated to the building to serve all of the non-potable demands. Mains water will also be reticulated to each building to serve all potable demands.

The development of the Central Thermal Plant will emulate site wide environmental initiatives described in the previous section.

1.5 Green Star Rating

The Abercrombie Street student accommodation building design will not specifically target an official Green Star rating due to the absence of an appropriate rating tool based on the specified building usage.

The design will however follow the specified 5 star Green Star principles as a minimum level of performance for the building design in order to emulate site wide building design performance and environmental initiatives.

2 Mechanical Services

The mechanical services will be designed in accordance with the following code and authority requirements:

- Building Code of Australia 2012
- AS/NZS 1668.1-1998 and AS/NZS 1668.2-1991
- City of Sydney Council Requirements
- AS 3666-2002
- AS/NZS 3000-2007

The student accommodation shall be provided with fan coil units concealed within a bulkhead or suspend below the ceiling. These will be connected to a 2-pipe system fed from the central thermal plant. The system will be zoned to suit orientation and include central controls system to switch from heating to cooling mode.

Lobbies and corridors are proposed to be naturally ventilated. Where this is not possible a preconditioning unit located on the roof shall supply tempered air to the corridors via a riser shaft from the roof. Common areas shall be provided with 4-pipe ducted fan coil units supplied from the central thermal plant

Separate toilet extract and kitchen extract systems shall be provided to each apartment exhausting to atmosphere. Make-up air shall be by natural means through ventilation openings in the facade. Apartment owners are expected to open a window when the exhaust systems are operating.

A motorised damper for each individual apartment system shall be opened and closed via the light switches in the toilets with run on timers.

Each apartment and the corridors shall be naturally ventilated via opening windows and/or doors.

Central exhaust systems shall be provided to serve the common area toilets, laundry and waste rooms systems with fans mounted on the roof, discharging vertically.

Garbage rooms shall include a separate exhaust system with fans located at roof level discharging vertically.

The common kitchen area shall include local exhaust system with a hood over the cooking area with exhaust to atmosphere.

Mechanical ventilation systems shall be provide for Switch Rooms, Plant Rooms, Communications Rooms, Sprinkler pump room, sprinkler valve chamber room and other plant rooms. The switch room shall also include cooling via a fan coil unit dependent upon load within the space

The retail tenancies will be provided with facilities to connect the tenancy to the central thermal plant chilled water and heating hot water via plate heat exchangers. Each retail tenant will have the ability to connect fan coil units to the systems as part of their fit out through dedicated space within a riser shaft.

Provisions have been made to allow for commercial kitchen exhaust systems to retail tenancies identified as ‘food retail’ as well as provision for toilet exhaust via risers to the roof.

All supply and exhaust ventilation systems will incorporate variable speed fan drives, fan start/stop will be controlled by adjustable room temperature and/or time clock as appropriate so as to operate as little as possible, without loss of amenity in the spaces served.

A Building Management System is proposed based on direct digital controls (DDC) for common area mechanical services to which the items of mechanical plant can be interfaced, controlled and monitored. The system shall be administered by an operator workstation located in the operator’s office.

In summary, the mechanical systems are appropriate, energy efficient systems, employing some of the latest low carbon technologies commercially available.

3 Electrical Services

The electrical services will be designed in accordance with the following code and authority requirements:

- Building Code of Australia 2012
- City of Sydney Council Requirements
- AS/NZS 3000
- AS/NZS 1680.0
- AS/NZS 1768
- AS 2293.1-2005
- Energy Australia Requirements

The building will be supplied at Low Voltage from an Ausgrid connection. The supply shall be presented within the main switch room which will be located at grade level within the building.

Dependant on the final capacity of the Tri-generation system associated with the Central Thermal Plant, there may be the opportunity to utilise the excess electricity within Block 4 South.

The supply shall be configured to provide essential and non-essential loads. Standby diesel generator shall not be provided.

Retail tenancies will be provided with separately metered electrical supplies.

Sub-mains will be run horizontally through the levels and underground conduits to meet electrical risers where they shall reticulate vertically to the floors above.

An energy metering and monitoring system will be provided for monitoring and reporting on the energy usage of the buildings in line with the requirements of Green Star.

The student accommodation areas are provided with high efficiency light fittings generally utilising T5 fluorescent lamps or compact fluorescent lamps with electronic ballasts which will reduce the electrical consumption when compared to light fittings utilising T8 lamps.

Back of house areas and amenities areas will be provided with light fittings utilising either linear T5, T8 or compact fluorescent lamps with electronic ballasts as required to suit the particular area.

Occupancy sensor controls and local switching will be used for back of house and amenity areas to suit the usage.

External lighting will be provided around the buildings accordance with AS 1158 and AS 4282. External luminaires will be selected to be in keeping with the general building design and in accordance with Sydney City Council requirements. External lighting will be time clock and light level controlled. An allowance shall be made for externally illuminated signage.

Emergency escape lighting and exit signs will be provided throughout the buildings to comply with BCA and AS 2293.

4 Communications Services

The communications services will be designed in accordance with the following code and authority requirements:

- Australian Communications and Media Authority Requirements
- AS/NZS 3000
- AS/ACIF S008
- AS/ACIF S009

The communication infrastructure will be of Fibre-to-the-Premises type and thus fibre cables will be used along external lead-in path to MDF 'room', vertical cabling from MDF room to risers, and horizontal cabling from risers to the Optical Network Terminal (ONT) at accommodation units.

For the retail units, a dedicated ONT shall be provided off the fibre backbone to provide communication connectivity for the retail tenants.

An access control and intruder detection system shall be provided to control the access of areas within the building to appropriate persons, and restrict entry of unauthorised persons into the building.

CCTV monitoring will be provided to building entry / exit points and internal / external communal amenity areas.

5 Hydraulic Services

The Hydraulic services will be designed in accordance with the following code and authority requirements:

- Relevant Australian Standards
- Building Code of Australia 2012
- NSW Plumbing & Drainage Code of Practice
- Sydney Water Corporation Requirements
- City of Sydney Council requirements
- Gas authority requirements
- Green Building Council of Australia

Appropriately sized new sewer connections will be made to the sites infrastructure and also Sydney water infrastructure in Irving Street.

Trade waste treatment will be provided to treat any trade waste generated from commercial/retail tenancies in accordance with Sydney Water's Trade Waste discharge requirements. Treated trade waste will drain to the sanitary drainage system.

A New potable cold water service connection will be established from Sydney Water's infrastructure in Abercrombie Street. Cold water pump sets will be provided to reticulate cold water as and if required (subject to Sydney Water pressure and flow statement). In addition to the authority meter, private sub-meters will be installed to monitor the water usage of individual building uses.

Non Potable Cold Water (NPCW) service connections will be extended from site infrastructure to serve non-potable water uses within the block (sanitary flushing and washing machines). Local pump sets shall be provided to boost the NPCW water as required.

A domestic hot water heat exchanger and storage vessel together with a flow and return system will be located within a hydraulic plant area. The heat exchanger will be powered from site infrastructure district heating supply.

Rainwater from all roof areas will be collected and harvested within a local retention tank for transfer to the recycled water treatment plant for non-potable re use within the development.

All sanitary fixtures and tap ware will comply with BASIX requirements as per the details below:

- Toilets to be 4 Star WELS rated or better
- Taps to be 6 Star WELS rated or better
- Showers to be 3 Star WELS rated, flow rate 7.5L/min max.

6 Vertical Transportation Services

The vertical transportation services will be designed in accordance with the following code and authority requirements:

- AS 1735.1/2/12
- AS 1428.1
- National Construction Code 2012
- City of Sydney Council Requirements
- AS/NZS 3000
- Occupational Health & Safety Requirements
- ISO 9001

There are three (3) passenger lifts serving the student accommodation. There is a single back of house Goods lift that serves Ground floor retail tenancies and the levels below it.

The internal transportation needs of a university's residential buildings involve unique passenger flows, and access for residents and visitors including people with disabilities.

The primary strategies adopted for the design of the transportation services include:

a) Passenger lifts designed to handle passengers and residential type goods;

a) Deep lift cars to assist in the transfer of goods, e.g. beds, tables, etc;

b) Machine Room-Less type lifts to negate the need to build a lift machine room;

c) Energy efficient drive and control systems;

d) 24 hour lift availability providing access to all floors for people with disabilities;

e) Equipment design to allow for the safety, comfort and health of users and personnel working on the lift equipment; and

f) Main entry level located at Ground floor.

Conventional group control will be utilised for all the passenger lift groups serving the building. The control system will be able to interface with local security requirements to control access to the apartment floors in each building. All lifts will have the capability for CCTV monitoring.

One lift within each building shall be able to serve as an emergency lift in accordance with BCA requirements.

All lifts will be compliant with AS 1735.12 and AS1428.1/2 with regards to access for people with disabilities.

Energy efficient lighting will be used in all lifts to minimise energy consumption. Passenger lifts will also be provided with the ability to feed back regenerated power back into the building's power grid, to further improve the energy efficiency.

The vertical transportation system will be designed to have the capability interface with any BMS and security requirements being proposed for the building.

7 Fire Services

Scope of Services

Fire services for this building will be provided in accordance with the National Construction Code, relevant Australian Standards, and WSP fire safety engineering strategy.

Services shall include:

- Fire Sprinkler System
- Smoke Detection and Alarm System
- Smoke Hazard Management System
- Emergency Warning and Intercommunication System
- Portable Fire Extinguishers

Design Criteria

The Design Criteria forming the basis of the Fire Services design will comprise:

Fire Services System	BCA requirement	Australian Standard
Smoke Detection and Alarm System	NCC Spec E2.2a Clause 3	AS1670.1-2004
	NCC Spec E2.2a Clause 4	AS1670.1-2004
Smoke Hazard Management System	NCC Spec E2.2a Clause 5	AS1668.1-1998
Emergency Warning System	NCC Spec E4.9	AS1670.4-2004
Fire Sprinkler System	NCC Spec E1.5	AS2118.1-1999
Portable Fire Extinguishers	NCC E1.6	AS2444-2001

Systems Description

Fire Detection and Alarm System

Fire detection will be provided throughout the building, with detectors selected to suit the specific hazard of each area to minimise the possibility of false alarms.

The fire detection and alarm system will be design as analogue addressable looped detection system, and will be connected to an approved monitoring company to notify fire brigade in the event of a fire alarm.

Addressable smoke detection will be provided to all common areas of the building, and addressable smoke detectors with alarm verification facility provided within the entry of the residential units.

An analogue addressable Fire Indicator Panel will be provided at the main designated building entry, and interfaced with the main site panel located in the Fire Control Room in Block 1 or 4n. Fire Fan controls will be integrated into the main Fire Panel to allow manual operation of the Fire Fans by the brigade.

Interface will be provided with the following building services systems;

- emergency warning system for controlled evacuation of building occupants
- mechanical services system for operation in fire mode and system shut down upon fire alarm

- fire sprinkler system for monitoring of isolation valves, pumps, tanks, and system activation
- fire hydrant system for monitoring of isolation valves, pumps, and tanks.
- security system for monitoring and release of locked doors in egress path

Emergency Warning System

An emergency warning system will be provided throughout the building to allow controlled evacuation of the building during a fire condition.

Occupant warning speakers will emit a pre-recorded verbal evacuation message and will be located to ensure the required speech intelligibility and sound pressure level can be delivered to all occupied areas.

Emergency Control Panel facilities will be integrated into the main Fire Panel.

Visual Alarms (Strobes) will be provided in areas with high ambient noise level, and to any areas specified for use by hearing impaired occupants.

It is proposed to not provide Warden Intercom Phones (WIP) as an alternative solution (refer Fire Engineering section of this report).

Emergency Alarms (white break glass alarms) will be provided in fire hose reel cupboards on each level, and Manual Call Points (red break glass alarms) will be provided at main fire panel and adjacent to required exits.

Fire Sprinkler System

Fire sprinkler protection will be provided throughout the building, and will be designed to the following design criteria;

- Residential areas - light hazard class LH.
- Plant areas - ordinary hazard class 1 OH1.
- Carpark areas - ordinary hazard class 2 OH2.

A grade 1 water supply will be provided, comprising a storage tank located at basement level, and a dedicated connection to the towns main supply.

Automatic booster pumps will be provided in a dedicated fire services pump room at basement level adjacent to the storage tanks, comprising one diesel pump and one electric pump.

Sprinkler control valves will be provided in a Sprinkler Valve room, located adjacent to the fire services pump room at basement level, with direct access to road or open space.

Brigade booster enclosure will be provided within sight of the main building entry.

Portable Fire Extinguishers

Portable fire extinguishers to suit the relevant risk and associated signage will be provided throughout all areas of the building.

Fire blankets will be provided to all kitchen areas and similar risk areas.

8 Fire Safety Engineering

Introduction

It is proposed to develop a detailed occupant egress and fire separation strategy for the development to ensure an appropriate occupant fire life safety and fire brigade intervention design. The Egress, Fire separation, and Fire Brigade intervention strategies are presented below. This includes discussion of major Alternative Solutions to be developed and documented in the final Fire Engineering Report (FER) to demonstrate compliance with the Performance Requirements of the BCA. It is likely that further non-compliances may be identified during design development which will be addressed through design changes or Alternative Solutions as appropriate.

Egress

Egress from the public retail space on Ground and Level 00 is directly to the outside to Abercrombie St or Central Park Avenue. The basement is served by three fire-isolated stairs plus a dedicated stair serving the Substation. Evacuation from the residential floors is by three fire-isolated stairs located in each residential wing and the circulation lift lobby. Each stair discharges directly to the outside or into a fire-isolated passageway.

The lift area is fire separated from the residential wings. In this way occupants evacuating from their rooms can travel to the fire-isolated stair in that wing in the first instance, or through the fire separation to the lift area which acts as a horizontal exit. At this point they are in a place of relative safety and can continue on to the lift lobby fire stair to descend to the outside.

The residential wings have a dead end travel distance of 8.5 m at the South end in lieu of the BCA limit of 6 m, and the overall corridor length is 46 m. Corridors would be required by the BCA to be a maximum of 40 m before needing to be divided by smoke separating doors. It is proposed to mitigate these non-compliances by providing natural ventilation from the facade of at least 1 m^2 free area. This can be provided by operable elements which are permanently open or auto-opening on fire alarm. In this way, conditions in the corridor are expected to be improved compared to the DtS case for occupants and firefighters as smoke vents are provided to the outside and visibility is improved.

The proposed layouts include multi-share units at the North end of each residential wing. These areas consist of six bedrooms (each fire separated) opening onto a common dining and living area. The multi-share is then fire separated from the public corridor and the adjacent areas. It is proposed to justify the open living arrangement based on sprinkler protection, early warning from the smoke detection system and smoke ventilation of the common space. The assessment will include review of existing local and overseas research and comprehensive CFD modelling.

The building design connects the Ground, Level 1, and Level 2 of the lift lobby compartment by an interconnecting void which is used for ventilating the space. Two level connections are then repeated up through the building. At the bottom of the connecting void there is a common area which includes couches and furniture and other combustible material. On the upper levels in each case there are bridges open to the void. It is noted that the connection of these floors do not trigger the atrium requirements under Part G3 of the BCA.

Due to this arrangement, a fire in the common area could spread smoke to the levels above where it could endanger occupants in the lift lobby area, or those evacuating through the space.

It is proposed to vent the void in the event of fire by utilising the openings used in the day to day ventilation of the building. It is also necessary to prevent occupants from entering the lift lobby area in the event of a fire in that area. This will be addressed by providing vision panels and appropriate signage on the doors to the area which indicate the detection of smoke in the lift lobby area.

The two fire-isolated stairs in the residential wings would require stair pressurisation under the BCA DtS Provisions. These stairs play a role in the day to day ventilation of the building and will have operable elements on the external face. It is proposed to increase the size of these elements to full height and remove the requirement to pressurise these stairs. This will be justified on the basis that if smoke does enter the stair, it is able to vent directly to the outside and therefore maintain tenable conditions in the egress route for the benefit of occupant evacuation and firefighting operations similar to use of an external stair in lieu of a fire-isolated stair.

It is proposed to remove the requirement for Warden Interface Phones (WIP) from the residential tower. Given the use of the building as a residence for unrelated persons which would not be expected to include dedicated wardens, the provision of WIP phones is not considered necessary. It is also acknowledged that firefighters carry personal two-way communication devices and are not considered the intended users of the system.

Specific egress related Alternative Solutions which will be developed have been identified as follows:

- Allow extended travel distance to an exit of 8.5 m from the South end of the building and up to 11 m from multi-share units, in lieu of 6 m
- Allow corridors to be 46 m in lieu of 40 m without smoke separation
- Allow multi-share apartments with egress via living/dining areas
- Allow common area to be located in the lift lobby area
- Remove the requirement to provide stair pressurisation to the two stairs in the residential wings
- Remove the requirement to provide WIP phones

Fire separation

The proposed building requires Type A construction due to its height, which is the most onerous with regard to required fire ratings. It is proposed to reduce the fire ratings in the retail on the Ground and Level 00 to 120 minutes, in lieu of the 180 minutes the BCA DtS Provisions would require. This is proposed on the basis that the building is to be sprinkler protected, which should prevent a fire growing to a size where it could compromise the structural elements.

The classification of the CTP Plant in the basement is not clear as it does not easily fit into any one definition in the BCA. However, it is likely to be considered Class 8 which would require a 240 minute fire rating. This classification is generally used for warehouses and factories and this fire rating is considered overly onerous for the use of the space considering, for example, that electricity substations require only a 120 minute rating. As such it is proposed to rationalise the required fire rating with the risk represented by the use to an FRL of 120 minutes, if the classification of the space would instil a higher rating.

On the residential floors the lift lobby area is fire separated from the residential wings. This assists in the justification of the extended travel distances and corridor length as discussed above. Fire doors in the corridor will be fitted with self-closers and hold-open devices which close on local smoke detection. This assists in the day to day ventilation of the building while still providing separation in the event of a fire. To maintain fire separation between the student units and the lift lobby area it is proposed to provide an additional sprinkler head to the inside of the external wall in the closest unit. In this way a fire which occurs near the external wall should activate the sprinkler head in a relatively short time and prevent fire spread to the adjacent compartment by radiation. Additionally wall wetting sprinklers are to be provided on the lift lobby side at the top level of each three floor part to prevent fire spread in the other direction.

Specific fire separation related Alternative Solutions which will be developed have been identified as follows:

- Allow FRL requirements to the retail areas to be reduced to 120 minutes in lieu of 180 minutes
- Allow FRL requirements to the CTP Plant areas to be reduced to 120 minutes if required
- Provide fire separation of the lift lobby area from the residential wings with adjacent areas protected with bespoke sprinkler arrangement

Fire Brigade intervention

Provision for fire brigade intervention is allowed for with an internal fire hydrant system located in fire-isolated stairs. A booster assembly will be provided for this system and the sprinkler system. The location of the booster assembly will be agreed under discussion with Fire and Rescue New South Wales (FRNSW).

As the building is between 25 and 50 m in effective height it is required by the BCA DtS Provisions to include a Fire Control Centre, but does not need a Fire Control Room (which is a dedicated, fire separated space). As part of the development master planning and previous discussions with FRNSW, this building is to be interconnected with the site panel in the proposed Fire Control Room on the Ground Floor of Block 1 or 4n. A

fire indicator panel with full functionality is required at the main entrance to Building 4s which is interconnected with the site panel in Block 1 or 4n.

Conclusion

The fire engineering strategy will be documented during ongoing design development in accordance with the International Fire Engineering Guidelines and commensurate with international best practice. Fire life safety non-compliances will be addressed in the future FER as alternative solutions by demonstrating compliance with the Performance Requirements of the BCA.

9 Summary

WSP has been appointed to provide building services consultancy services for the proposed developments known as Blocks 4s, Abercrombie Street student accommodation on the Central Park Development site in Sydney, NSW

This report has addressed the required services inputs in to the development in accordance with the relevant responsible authority criteria and the client's requirements.

As such the proposed development of Blocks 4s, Abercrombie Street student accommodation on the Central Park Development site is considered appropriate from a building services aspect.

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