JONES NICHOLSON PTY LTD
CONSULTING ENGINEERS

MECHANICAL SERVICES SPATIALS REPORT

7-9 Gibbons Street Redfern

For Lawson Square Pty Ltd

Prepared in co-ordination with Candalepas Architects

February 10, 2010
Our Ref: 20090108

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1.0 INTRODUCTION

Jones Nicholson have been engaged to plan and co-ordinate the mechanical spatial requirements for the proposed commercial and residential development at 7-9 Gibbons St, Redfern.

The architectural floor plans and elevations were reviewed and in coordination with Candalepas Associates the mechanical spatial requirements as detailed below were incorporated into the development.

The building comprises of:

- 8 levels of basement,
- Ground floor comprising of retail tenancies and a loading dock
- A supermarket on level 1
- Level 2 – commercial tenancies
- Level s 3 to 17 – residential apartments

The building will comprise of the following mechanical systems

- Carpark Supply and Exhaust Ventilation Systems
- Loading Dock Exhaust Ventilation Systems
- Garbage Room Exhaust Ventilation Systems
- Retail Air Conditioning and Ventilation Systems
- Supermarket Air Conditioning and Ventilation Systems
- Commercial Office Air Conditioning and Ventilation Systems
- Residential Apartment Air Conditioning and Ventilation Systems
- Basement Stair Pressurisation Systems
- G-Level 17 Stair Pressurisation Systems
- Lobby Air Conditioning and Ventilation Systems
- Garbage Chute Room Exhaust Ventilation Systems

The Director General's requirements were reviewed and no requirements were noted or found that would impact on the mechanical spatial requirements. The SEPP No 65 Design Quality of Residential Flat Developments does outline efficient use of energy in Principle No 5 and this should be taken into account during the design of the project. The requirements of BCA section J5 will assist in meeting this "Design Quality Principle". The efficient use of energy will also be co-ordinated with the project specific sustainability requirements being prepared by the sustainability consultant.

Mechanical Services
Spatial Requirements

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Project: 7-9 Gibbons St Redfern
Date: February 10 2010

Duct Riser Size Requirements

Application	Level	Location	Slab Level for Duct Riser Penetration	Duct Riser Size (mm)			Comments
Carpark Exhaust	Basement	Marian St end near Stair 2	Basement L7	800	x	800	
Carpark Exhaust	Basement	Marian St end near Stair 2	Basement L6	1100	x	1100	
Carpark Exhaust	Basement	Marian St end near Stair 2	Basement L5	1400	x	1400	
Carpark Exhaust	Basement	Marian St end near Stair 2	Basement L4	1650	x	1650	
Carpark Exhaust	Basement	Marian St end near Stair 2	Basement L3	1950	x	1950	
Carpark Exhaust	Basement	Marian St end near Stair 2	Basement L2	2250	x	2250	
Carpark Exhaust	Basement	Marian St end near Stair 2	Basement L1	2550	x	2550	
Carpark Exhaust	Basement	Marian St end near Stair 2	Lower Ground - Roof	2700	x	2700	Exhaust discharge at roof level (Min 6m from boundary)
Carpark Supply	Basement	North end near Stair 1	Basement L7	700	x	700	
Carpark Supply	Basement	North end near Stair 1	Basement L6	1000	x	1000	
Carpark Supply	Basement	North end near Stair 1	Basement L5	1250	x	1250	
Carpark Supply	Basement	North end near Stair 1	Basement L4	1500	x	1500	
Carpark Supply	Basement	North end near Stair 1	Basement L3	1750	x	1750	
Carpark Supply	Basement	North end near Stair 1	Basement L2	2000	x	2000	
Carpark Supply	Basement	North end near Stair 1	Basement L1	2250	x	2250	
Carpark Supply	Basement	North end near Stair 1	Lower Ground - Roof	2400	x	2400	Supply air intake louvre at level 3
Loading Dock Exhaust	Lower Ground	Marian St end near Stair 2	Lower Ground - Roof	750	x	750	Exhaust discharge at roof level (Min 6m from boundary)
Garbage Exhaust	Lower Ground	Marian St end near Stair 2	Lower Ground - Roof	300	x	300	Exhaust discharge at roof level (Min 6m from boundary)

Note: The above ductwork risers are air way sizes. For actual structural riser size, an additional 50mm must be added to each dimension for ducts up to 500mm in width and an additional 100mm for ducts over 500mm width.

Mechanical Services
Spatial Requirements

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Duct Riser Size Requirements

Application	Level	Location	Slab Level for Duct Riser Penetration	Duct Riser Size (mm)			Comments
Stair Pressurisation Riser	B1 - B5						No riser is required. Fan located at ground level inside the stair
Stair Pressurisation Riser	G - L17	Adjacent to Stair 1 and Stair 2	L1 - L16	2000	x	500	Fan located at ground level inside the stair
Garbage Chute Exhuast	L1 - L17	Adjacent to Garbage Chute Room	L2 - L7	250	x	250	
Garbage Chute Exhuast	L1 - L17	Adjacent to Garbage Chute Room	L8 - L13	350	x	350	
Garbage Chute Exhuast	L1 - L17	Adjacent to Garbage Chute Room	L14 - Roof	400	x	400	Fan located on roof

Plant Area Requirements

Application	Level	Plant Location	Plant Size LengthxWidthxHeight (mm)					Comments
Carpark Exhaust	Basement Level 1	Marian St end near Stair 2 adjacent to exhaust air riser	7000	x	7000	x	3000	
Carpark Supply	Basement Level 1	North end near Stair 1 adjacent to supply air riser	6000	x	6000	x	3000	
Tenancy 1-3 and Res/Comm Lobby A/C	Ground	Roof	3000	x	3000	x	3000	
Supermarket A/C	Level 1	Roof	6000	x	6000	x	3000	
Commercial Office Tenancies A/C	Level 2	Roof	5000	x	5000	x	3000	

Note: The above air conditioning plant spaces have been calculated based on direct expansion air cooled split type systems. Similar to a Daikin or Mitsubishi VRV type.

Mechanical Services
Spatial Requirements

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General

Application	Level	Comments
Retail Air Conditioning	Ground	A minimum of 600mm clear ceiling void space
Retail Ventilation	Ground	Outside air drawn in through high level vertical louvres local to the space
Supermarket Air Conditioning	Level 1	A minimum of 800mm clear ceiling void space
Supermarket Ventilation	Level 1	Outside air drawn in through high level vertical louvres local to the space
Commercial Air Conditioning	Level 2	A minimum of 600mm clear ceiling void space
Commercial Ventilation	Level 2	Outside air drawn in through high level vertical louvres local to the space
Residential Air Conditioning	Levels 3-17	Split air conditioning unit condensers will be located on balconies and indoor fan coil units shall be in a 400mm clear bulkhead
Residential Exhaust Ventilation	Levels 3-17	Each apartment will have horizontal discharge exhaust systems for kitchens, toilet and laundry
Residential Outside Air Ventilation	Levels 3-17	Each apartment will be naturally ventilated by openable windows
Residential Lobby Outside Air Ventilation	Levels 3-17	Naturally ventilated lobby