CHECKLIST FOR AIR CONDITIONING & MECHANICAL VENTILATION INSTALLATION

Project Title:	**Project No.**
	Date:

Standard Requirements		**Applicable**		**Not Applicable**
		Complied With	**Not Complied With/Waiver Sought**	
(A)	**GENERAL**			
(1)	A legend, site and key plan must be given on the first sheet of the plans showing the symbols used.			
(2)	Any works which are to be deleted or removed must be shown in dotted lines on the plans and presented in such a manner which can be easily identified or distinguished.			
(3)	The scale of all the plans must be clearly indicated and must comply with regulation 7.			
(4)	Usages of all areas are clearly labelled on plans.			
(5)	All intermediate broken-off points in the proposed air conditioning/ mechanical ventilation layout run are indentified with their continuity link.			
(6)	Waiver applications (including Architectural) are complied and listed in application form			
(7)	Basement floor is provided with smoke purge/engineered smoke control system			

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(B) BCA			
HEADROOM (8) Cross and longitudinal sections of the installation, extension or alteration must be given and the headroom to any plant or equipment must comply with regulation 38.			
KITCHEN EXHAUST (9) The total exhaust flow rate of kitchen exhaust hoods must comply with Clause 14.3.6 of SS 553:2009. Calculations to be submitted.			
FRESH AIR (10) The quantity of fresh air supply of the air conditioning installation for any room or floor space must be determined in accordance with the Table to regulations 62(1). Calculations to be submitted.			
(11) The amount of fresh air supply in the air conditioning installation must not exceed the rates specified in the Table by more than 30%.			
(12) The quantity of fresh air supply for the mechanical ventilation of any room or floor space must be determined in accordance with the Table to regulation 62(3). Calculations to be submitted.			

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(13) The rate of fresh air supply of the mechanical ventilation installation must not exceed the rates specified in the Table by more than 30%.			
<u>BASEMENT CARPARK</u> (14) The mechanical ventilation system provided for the basement storeys and the basement carparking areas must comply with regulations 63(1) and SS 553: 2009 Clause 14.1.8.			
(15) Natural ventilation openings as a satisfactory substitute for the supply part of the mechanical ventilation must comply with regulation 63(2).			
(16) (a) At least 50% of the exhaust air must be extracted from a position not exceeding 600 mm above the finished floor level; measured from the finished floor level to the top of the grille. (b) Include "TYPICAL DETAIL OF CARPARK EXHAUST AIR DUCT DROPPER"			
(17) The quantity of replacement air must not exceed that of the exhaust air.			

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(18) The exhaust point of the extract mechanical ventilation installation must be arranged to discharge at least 5.0 m away from any doorways, apertures or other openings in the building to prevent the re-entry of objectional odours or flammable vapours into the premises.			
(19) 1.2 mm thick sheet metal shall be used in the horizontal run of ducting for Smoke Purging System.			
(20) The basement carpark ventilation system must be connected to an emergency power supply except for fume extract system.			
(21) To endorse on plan if fume extract system is provided and attach justification to show compliance to SS 553: 2009 Clause 14.1.8.3.			
<u>TOILETS & BATHROOMS</u> (22) The mechanical ventilation for bathrooms, water-closet rooms, locker rooms must comply with regulation 65 and EHD requirements.			

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(23) Air drawn from hospital operating rooms/mortuary rooms/bathrooms, toilets and lavatories/rooms used by persons suffering from infectious or contagious diseases or any space where there is present or likely to be present such quantity of flammable vapours, dust, odours or noxious gases as to be a danger to life or public health must not be recirculated.			
(24) All air intake points must be located at external walls or at roof level and arranged such that they are at least 5.0 m from exhaust discharge from kitchens, toilets, carparks, laundries or plantrooms.			
(25) The indoor design conditions for the air conditioned spaces must comply with the limits stipulated in regulation 68.			
(26) Air conditioning system for perimeter shop units must comply with regulation 70.			
(27) At least one thermostat for the regulation of space temperature must be provided to each separate air handling system and zone.			

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(28) Each air handling system must be equipped with a readily accessible means of shutting off or reducing the energy used for the air conditioning system during the periods of non-use or alternative uses of building spaces or zones served by the system.			
(29) For a hotel development, an automatic control device, acceptable to the Building Authority must be installed in every hotel guest room or suite for the purpose of automatically reducing the air conditioning when a room is not occupied.			
(30) Measuring device is provided for monitoring of energy consumption of all building M&E services			
(C) FSSD			
(31) A distinct notation for fire dampers has been used and included in the legend.			
(32) Fire doors are indicated on plan.			
(33) A distinct notation for each type of fire-rated ducts has been used and included in the legend.			
(34) No other services running above fire-rated ducts.			

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(35) Schematic air distribution line diagram for the proposed air system is complete with:			
(a) Each storey level superimposed			
(b) The appropriate segregating colour scheme for the different duct systems consistent with the legend.			
(c) Protected shafts outline for ducts, especially rise/droppers.			
(d) Location of fans and other air distribution equipment with respective capacity and areas served identified.			
(e) Location of fire dampers.			
(f) Location of smoke detectors for return air/smoke control.			
(g) Location of smoke control dampers.			
(36) The following fire compartments have been clearly highlighted and labelled according to the terms below: (a) Exit staircases			
(b) Exit passageways			
(c) Smoke stop lobbies			
(d) Fire fighting lobbies			

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(36) (e) Internal corridor			
(f) Fire command centre			
(g) Fire pump room			
(h) Generator room			
(i) Kitchen			
(j) Rooms involving flammable flumes			
(37) Mode of ventilation for the fire compartments has been clearly indicated beside the usage annotation of each area on floor plans.			
(38) Depth of ceiling spaces is indicated clearly on relevant sectional plan.			
(39) Raised floor areas are highlighted clearly on plans and depth is indicated.			
(40) Independent supply and exhaust ventilation system is provided for the Fire Command Centre with emergency electricity supply. Minimum 10 A/C ventilation rate is provided.			
(41) The following smoke control system are required in the Building Plans and the type of system required has been clearly indicated beside the usage annotation of the area concerned: (a) Exit pressurisation system			

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(41) (b) Basement carpark smoke purging system			
(c) Atrium smoke extract system			
(d) Other smoke extract system			
(42) Calculations for the following system are attached:			
(a) Exit pressurisation system			
(b) Basement carpark smoke purging system.			
(c) Carpark mechanical ventilation system.			
(c) Atrium smoke extract system			
(d) Other smoke extract system			
(e) Staircase ventilation			
(f) Exit corridor ventilation			
(g) Smoke free lobby ventilation			
(43) Emergency power supply is provided for all essential services.			

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