BUILDING PLAN CHECKLIST

B.P. NO: ...../.....

PROJECT TITLE :

N.A.	YES	Item
	☐	**A SITE PLAN - Proper Identification Landmarks**
		1 Drainage
☐	☐	1.1 **Existing Drainage** (a) Indicate existing boundary drains (b) Specify invert levels at strategic points (c) Specify invert levels at strategic points
☐	☐	1.2 **Proposed Drainage** (a) Indicate gradient / invert levels / direction of flow (b) Outfall shall be at main or access roadside drain (c) Iron grating prior to drain outfall (d) Sump to be provided for the perimeter drains of the commercial building before discharge into the main drain.
☐	☐	**2 Septic Tank / Treatment Plant & Appurtenance**
☐	☐	2.1 Indicate setbacks of septic tank *(residential conventional tank)* (a) 6m from front boundary (b) 3m from rear boundary (c) 1.5m from side boundary
☐	☐	2.2 Indicate positions of all manholes
☐	☐	2.3 Indicate all soil and effluent pipes below ground
☐	☐	2.4 Effluent pipe outfall: (a) shall be to roadside drain (b) invert level specified (c) complete with tidal valve/flap if outfall water course prone to tidal variation. Detail diagram shall be incorporated.
☐	☐	**3 Refuse Bin Chamber / Centre**
☐	☐	3.1 Commercial Building / Flat / Condominium / Industrial Buildings - Compulsory
☐	☐	3.2 Shophouse - bin chamber floor level to flush with the road edge level
☐	☐	3.3 (a) Shophouse bin chamber - minimum size of 1.2m x 1.2m x 1.8m high or (b) Location of bin centre subject to clearance/agreement by Land and Survey Department - for shophouses, capacity calculation shall be based on minimum of 240 litres per ground floor unit and minimum of 120 litres per upper floor unit
☐	☐	3.4 For industrial buildings, capacity calculation shall be based on minimum of 240 litres per unit
☐	☐	3.5 Siting within proposed boundary

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N.A.	YES	Item
☐	☐	3.6 Floor - glazed ceramic tiles
☐	☐	3.7 Glazed wall tiles to walls
☐	☐	3.8 Standpipe / water tap for bin centre
☐	☐	3.9 Proper outlet drain
		B FLOOR PLAN
☐	☐	**1 <u>Plumbing for waste and soil pipes</u>**
☐	☐	1.1 floor traps shall be provided for sinks, wash hand basin, bath / toilets
☐	☐	1.2 floor traps shall be back-vented if discharged to sewer or treatment plant
☐	☐	1.3 vent pipes shall be allowed
☐	☐	1.4 Sizes of pipe: (a) ASP / Waste - 50mm Ø minimum (b) Soil - 100mm Ø minimum (c) Vent - 50mm Ø minimum (d) Common sewer - 150mm Ø minimum (e) calculations by M&E Engineer to substantiate proposed pipe sizes to be submitted *(for high buildings only, i.e. above 4-storey)*
☐	☐	1.5 Gradient of pipes: (a) 100mm Ø minimum — Soil: *1 to 40*; Total Waste: *1 to 90*; Effluent: *1 to 120* (b) 150mm Ø minimum — Soil: *1 to 60*; Total Waste: *1 to 150*; Effluent: *1 to 180* (c) 230mm Ø minimum — Soil: *1 to 90*; Total Waste: *1 to 265*; Effluent: *1 to 270* (d) calculated gradient to allow minimum flow velocity of 0.8m/s at full bore *(MS 1228:Design and Installation of Sewerage System)*
☐	☐	1.6 Material of pipes (a) Building installation: (i) Above and/or below ground: — cast iron — UPVC — Ductile Iron — HDPE Double wall corrugated
☐	☐	(ii) Below ground only: — glazed earthern ware — UPVC — cast iron — Ductile Iron — HDPE Double wall corrugated
☐	☐	(b) Sewers (i) Residential backlane common sewer: — cast iron — glazed earthern ware — UPVC — HDPE Double wall corrugated

N.A.	YES	Item
☐	☐	(ii) Carriageway common sewer — cast iron — HDPE Double wall corrugated
☐	☐	(iii) Exposed sewer or effluent — cast iron
☐	☐	1.7 Provision for storm run off drainage and out falls
☐	☐	**2 Septic Tank / Treatment Plant and Appurtenances**
☐	☐	2.1 Position of septic tank / treatment plant and appurtenances to be indicated on site plan
☐	☐	2.2 Indicate position of all manholes complete with invert levels, including outfall
		3 Natural Lighting and Ventilation - (by-laws 32 & 34)
		3.1 Schedule shall be provided for natural lighting and ventilation, indicating floor area of each room, window and door openings *(area shall exclude fire doors)* to the exterior and their respective percentages, for the following:
☐	☐	(a) **For residential, business or other purposes (except hospitals and schools) - [by-law 32(1)]**
	☐	(i) **windows or doors opening** to the exterior having a total area of not less than 10% of the clear floor area of such room
	☐	(ii) **openings to these doors and windows to be capable of allowing a free uninterrupted** passage of air of not less than 5% of the clear floor area of such room *(this shall exclude openings for fire doors)*
☐	☐	(b) **Every room used for accommodation of patients in a hospital – [by-law 32(2)]**
	☐	(i) **windows** having a total area of not less than 15% of clear floor area of such room
	☐	(ii) **openings to these windows** capable of allowing a free uninterrupted passage of air of not less than 71/2% of such floor area
☐	☐	(c) **For schools, every room used for the purpose of conducting classes – [by-law 32 (3)]**
	☐	(i) natural lighting and natural ventilation by means of windows having a total area of not less than 20% of clear floor area of such room
	☐	(ii) **openings to these windows** shall be capable of allowing a free uninterrupted passage of air of not less than 10% of the clear floor area of such room
☐	☐	3.2 **Water-closet, latrine, urinal or bathroom - [by-law 32 (4)]** — openings with a total area of not less than 0.2 square metre per water-closet, urinal, latrine or bathroom for free uninterrupted passage of air
☐	☐	3.3 **Permanent mechanical ventilation [by-law 34 (4)]** — shall be provided for and maintained in accordance with the requirements of Schedule C of the SBO 1994 in lieu of the above. *(Air to be extracted to the external walls of the building. Fresh air to be ducted in from the external)*

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N.A.	YES	Item
		4 Bath and Toilet
☐	☐	4.1 **Residential building**
	☐	(a) glazed wall tiles or any other appropriate wall finishes all round internal wall to minimum height of 1.5m
	☐	(b) WHB to have suitable trap
	☐	(c) 100mm Ø floor traps
	☐	(d) non-slip floor tiles finish
☐	☐	4.2 **Shops, Commercial or other usage**
	☐	(a) two (2) w.c. per commercial shop floor
	☐	(b) glazed wall tiles to full ceiling height
	☐	(c) WHB to have suitable+G41 trap
	☐	(d) Glazed wall tiles above WHB
	☐	(e) 100mm Ø floor traps
	☐	(f) non-slip floor tiles finish
☐	☐	4.3 **Buildings where public have access [by-law 110A]**
	☐	(a) toilet for the handicapped (minimum size of 1.5m x 2m)
☐	☐	**5 Kitchens**
	☐	5.1 Provision of sink c/w suitable trap
	☐	5.2 100mm Ø floor traps
	☐	5.3 Glazed wall tiles or other appropriate wall finishes to minimum height of 1.5m
	☐	5.4 Floor tiles finish
☐	☐	5.5 W.C. door shall not open directly to kitchen of food outlet/commercial floor of shophouses.
☐	☐	**C ROOF PLAN**
☐	☐	1 Provision of storm run-off drainage
☐	☐	2 Air wells
		D ELEVATIONS
	☐	1 All external plumbing works, drainage installation and vent pipes
☐	☐	2 Position of external air conditioning condensor units shall be indicated

N.A.	YES	Item
		E SEPTIC TANK/SEWERAGE TREATMENT PLANT
		1 Conventional design
☐	☐	1.1 detailed design drawings to incorporate: (a) plan (b) section (c) distribution and collection pipe perforation (d) standard tank schedule (e) standard filter bed schedule
		2 Proprietary Systems
☐	☐	2.1 system proposed for the above must be approved by Jabatan Perkhidmatan Pembentungan Malaysia. — capacity for the proposed system must be calculated based on the population equivalent, in accordance with the Sarawak Drainage, Sanitation and Sanitary Plumbing By-Laws, 1981. Manufacturer's tabulation and specifications of selected septic tanks shall be included in the drawings
		F MANHOLES
		1 Manholes to be located at:
☐	☐	1.1 the higher end of all sewer lines
☐	☐	1.2 every change in direction or alignment of pipes
☐	☐	1.3 every change in pipe size
☐	☐	1.4 all intersection, junction or convergence of pipes
☐	☐	1.5 Straight run of pipes for pipe size: — 100mm Ø — 15 m interval — 150mm Ø — 25 m interval — 200mm Ø and above — 30 m interval
☐	☐	1.6 foot of all soil pipes from the upper floors
		2 Manhole Types
		2.1 normal manholes in domestic premises compound or areas shall not subject to superimposed loads
		2.2 heavy duty manhole at driveways and carriage ways
		2.3 provide detailed plan and section drawings of typical manhole incorporating the following construction specification: (a) **Walls *(MS 1228: Design and Installation of Sewerage System)*** (i) Normal Manhole - brickwork cement mortar of 230mm thickness (ii) Heavy duty manhole - r.c. walls of 115mm thickness

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N.A.	YES	Item
	☐	(b) **Foundation** of 50mm thick lean concrete
	☐	(c) **Channeling** of half round pipe of same material as the sewer joining the manhole
	☐	(d) sulphate resistant cement mortar rendered smooth to internal surface
	☐	(e) benching with minimum slope of 1:12
☐	☐	(f) step iron/cat ladder provided for manhole exceeding 1.2m depth
☐	☐	(g) frame and cover: — light duty in domestic compound — medium duty in domestic drives and back lanes — heavy duty in all carriage way
☐	☐	(h) drop manholes to be provided if incoming sewer pipe is higher than outgoing sewer by 600mm
		G COMPUTATION FOR PROVISION OF SANITARY FITTINGS ***(Based on provisions of MS 1228: Design and Installation of Sewerage System and Sarawak Drainage, Sanitation and Sanitary Plumbing By-Laws, 1981)***
		1 Domestic house
☐	☐	1.1 each house to have minimum 1 W.C. for every 6 persons or 3 bedrooms
☐	☐	**2 Business premises, offices and godowns**
		2.1 male toilet facilities
☐	☐	(a) 25 persons and under — 1 w.c. & 1.2m urinal channel/2 no. of urinal bowl
☐	☐	(b) 50 persons and under — 2 w.c. & 2.4m urinal channel/4 no. of urinal bowl
☐	☐	(c) 100 persons — 3 w.c. & 3.6m urinal channel/ 6 no. of urinal bowl
☐	☐	(d) one additional w.c. and 1.2m urinal channel/2 urinal bowls for every 50 persons in excess of 100 persons
		2.2 female toilet facilities
	☐	(a) 1 w.c. for every 20 persons
☐	☐	**3 Schools**
		3.1 male toilet
	☐	(a) 2 w.c. and 2m urinal channel /3 urinal bowls per 100 persons
		3.2 female toilet
☐	☐	(a) 3 w.c. for first 50 persons
☐	☐	(b) 3 w.c. for second 50 persons
☐	☐	(c) 4 w.c. for each subsequent 100 persons

N.A.	YES	Item
☒	☒	**4 Public buildings**
	☐	4.1 male toilet (a) 1 w.c. for every 200 persons or part thereof
	☐	(b) 1.2m urinal channel/2 urinal bowls for every 100 persons or part thereof
	☐	4.2 female toilet (a) 1 w.c. for every 100 persons or part thereof
		H DRAWING REQUIREMENTS
		The following shall be included in the drawings as notes:
☒	☒	(a) Schematic drawing shall be provided for supply and waste water plumbing
☒	☒	(b) Isometric drawing shall be provided if plumbing works are complex
	☐	(c) Door and window schedule shall be provided, indicating type and dimension
	☐	**I NOTES IN THE DRAWINGS:**
		The following shall be included in the drawings as notes:
		(a) Wheel bins shall be provided on site prior to issuance of Occupation Permit
		(b) Original warranty letter from the manufacturer to be submitted during Occupation Permit inspection
		(c) All manhole covers to be sealed with bitumen compound or equivalent
		(d) Outlet pipes shall be provided for condensers of air conditioning units and shall be discharged to concrete drains
		(e) Plumbing from floor to floor conforming to Code of Practice *(MS 1228: Design and Installation of Sewerage System)*
		(f) Inspection or roding eye provided to all bends, junctions and joints
		(g) When permanent air-conditioning is intended, there shall also be provided alternative approved means of ventilating the air-conditioned enclosure, such that within half an hour of the air-conditioning system failing, not less than the stipulated volume of fresh air specified shall be introduced into the enclosure during the period when the air-conditioning system is not functioning *[by-law 34]*
		(h) Provisions of Schedule C of the SBO 1994 shall apply to buildings which are mechanically ventilated or air-conditioned *[by-law 34(3)]*

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I SUBMITTING PERSON

I, the Submitting Person, hereby undertake that all information provided in the above Checklist are correct. I confirm that I have checked all the drawings and documents submitted under the above Building Plan registration no. ..... against all the items of the Checklist above and any other items not mentioned, but stated under the Sarawak Buildings Ordinance 1994 and its By-laws (including amendments) and found them to comply.
I undertake to submit the M&E mechanical ventilation details for centralized system, which are to be provided for high rise above 4-storey building.

Signature : .....

Name of submitting person: .....

LAM/LJM Registration No. and Stamp : ..... **Date :** .....

II COUNCIL'S REMARKS:

BUILDING PLAN CHECKLIST

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Note : - To tick in box whichever is applicable

"YES" - Complied with
"N.A." - Not applicable

- *All pages of the checklist to be signed and stamped by the submitting person*
- *The checklist is to be attached to the drawings being checked and for filing*
- *"LAM" is Lembaga Arkitek Malaysia*
- *"LJM" is Lembaga Jurutera Malaysia*
- *"SP" is Submitting Person*
- *"SBBL" is Sarawak Building By-laws*