

BUILDING PLAN CHECKLIST

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

PROJECT TITLE :

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

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

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<input type="checkbox"/>	<input type="checkbox"/>	(ii) Carriageway common sewer <ul style="list-style-type: none"> — cast iron — HDPE Double wall corrugated
<input type="checkbox"/>	<input type="checkbox"/>	(iii) Exposed sewer or effluent <ul style="list-style-type: none"> — cast iron
<input type="checkbox"/>	<input type="checkbox"/>	1.7 Provision for storm run off drainage and out falls
<input type="checkbox"/>	<input type="checkbox"/>	2 <u>Septic Tank / Treatment Plant and Appurtenances</u>
<input type="checkbox"/>	<input type="checkbox"/>	2.1 Position of septic tank / treatment plant and appurtenances to be indicated on site plan
<input type="checkbox"/>	<input type="checkbox"/>	2.2 Indicate position of all manholes complete with invert levels, including outfall
<input type="checkbox"/>	<input type="checkbox"/>	3 <u>Natural Lighting and Ventilation - (by-laws 32 & 34)</u>
<input type="checkbox"/>	<input type="checkbox"/>	3.1 Schedule shall be provided for natural lighting and ventilation, indicating floor area of each room, window and door openings (<i>area shall exclude fire doors</i>) to the exterior and their respective percentages, for the following:
<input type="checkbox"/>	<input type="checkbox"/>	(a) For residential, business or other purposes (except hospitals and schools) - [by-law 32(1)]
<input type="checkbox"/>	<input type="checkbox"/>	(i) <u>windows or doors opening</u> to the exterior having a total area of not less than 10% of the clear floor area of such room
<input type="checkbox"/>	<input type="checkbox"/>	(ii) <u>openings to these doors and windows to be capable of allowing a free uninterrupted</u> passage of air of not less than 5% of the clear floor area of such room (<i>this shall exclude openings for fire doors</i>)
<input type="checkbox"/>	<input type="checkbox"/>	(b) Every room used for accommodation of patients in a hospital – [by-law 32(2)]
<input type="checkbox"/>	<input type="checkbox"/>	(i) <u>windows</u> having a total area of not less than 15% of clear floor area of such room
<input type="checkbox"/>	<input type="checkbox"/>	(ii) <u>openings to these windows</u> capable of allowing a free uninterrupted passage of air of not less than 71/2% of such floor area
<input type="checkbox"/>	<input type="checkbox"/>	(c) For schools, every room used for the purpose of conducting classes – [by-law 32 (3)]
<input type="checkbox"/>	<input type="checkbox"/>	(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
<input type="checkbox"/>	<input type="checkbox"/>	(ii) <u>openings to these windows</u> shall be capable of allowing a free uninterrupted passage of air of not less than 10% of the clear floor area of such room
<input type="checkbox"/>	<input type="checkbox"/>	3.2 Water-closet, latrine, urinal or bathroom - [by-law 32 (4)] <ul style="list-style-type: none"> — 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
<input type="checkbox"/>	<input type="checkbox"/>	3.3 Permanent mechanical ventilation [by-law 34 (4)] <ul style="list-style-type: none"> — shall be provided for and maintained in accordance with the requirements of Schedule C of the SBO 1994 in lieu of the above. (<i>Air to be extracted to the external walls of the building. Fresh air to be ducted in from the external</i>)

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

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<input type="checkbox"/>	<input type="checkbox"/>	E SEPTIC TANK/SEWERAGE TREATMENT PLANT
<input type="checkbox"/>	<input type="checkbox"/>	1 <u>Conventional design</u>
<input type="checkbox"/>	<input type="checkbox"/>	1.1 detailed design drawings to incorporate:
<input type="checkbox"/>	<input type="checkbox"/>	(a) plan
<input type="checkbox"/>	<input type="checkbox"/>	(b) section
<input type="checkbox"/>	<input type="checkbox"/>	(c) distribution and collection pipe perforation
<input type="checkbox"/>	<input type="checkbox"/>	(d) standard tank schedule
<input type="checkbox"/>	<input type="checkbox"/>	(e) standard filter bed schedule
<input type="checkbox"/>	<input type="checkbox"/>	2 <u>Proprietary Systems</u>
<input type="checkbox"/>	<input type="checkbox"/>	2.1 system proposed for the above must be approved by Jabatan Perkhidmatan Pembentungan Malaysia.
<input type="checkbox"/>	<input type="checkbox"/>	— 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
<input type="checkbox"/>	<input type="checkbox"/>	F MANHOLES
<input type="checkbox"/>	<input type="checkbox"/>	1 <u>Manholes to be located at:</u>
<input type="checkbox"/>	<input type="checkbox"/>	1.1 the higher end of all sewer lines
<input type="checkbox"/>	<input type="checkbox"/>	1.2 every change in direction or alignment of pipes
<input type="checkbox"/>	<input type="checkbox"/>	1.3 every change in pipe size
<input type="checkbox"/>	<input type="checkbox"/>	1.4 all intersection, junction or convergence of pipes
<input type="checkbox"/>	<input type="checkbox"/>	1.5 Straight run of pipes for pipe size:
<input type="checkbox"/>	<input type="checkbox"/>	— 100mm Ø — 15 m interval
<input type="checkbox"/>	<input type="checkbox"/>	— 150mm Ø — 25 m interval
<input type="checkbox"/>	<input type="checkbox"/>	— 200mm Ø and above — 30 m interval
<input type="checkbox"/>	<input type="checkbox"/>	1.6 foot of all soil pipes from the upper floors
<input type="checkbox"/>	<input type="checkbox"/>	2 <u>Manhole Types</u>
<input type="checkbox"/>	<input type="checkbox"/>	2.1 normal manholes in domestic premises compound or areas shall not subject to superimposed loads
<input type="checkbox"/>	<input type="checkbox"/>	2.2 heavy duty manhole at driveways and carriage ways
<input type="checkbox"/>	<input type="checkbox"/>	2.3 provide detailed plan and section drawings of typical manhole incorporating the following construction specification:
<input type="checkbox"/>	<input type="checkbox"/>	(a) Walls (MS 1228: Design and Installation of Sewerage System)
<input type="checkbox"/>	<input type="checkbox"/>	(i) Normal Manhole - brickwork cement mortar of 230mm thickness
<input type="checkbox"/>	<input type="checkbox"/>	(ii) Heavy duty manhole - r.c. walls of 115mm thickness

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<input type="checkbox"/>	<input type="checkbox"/>	(b) Foundation of 50mm thick lean concrete
<input type="checkbox"/>	<input type="checkbox"/>	(c) Channeling of half round pipe of same material as the sewer joining the manhole
<input type="checkbox"/>	<input type="checkbox"/>	(d) sulphate resistant cement mortar rendered smooth to internal surface
<input type="checkbox"/>	<input type="checkbox"/>	(e) benching with minimum slope of 1:12
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(f) step iron/cat ladder provided for manhole exceeding 1.2m depth
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(g) frame and cover: <ul style="list-style-type: none"> — light duty in domestic compound — medium duty in domestic drives and back lanes — heavy duty in all carriage way
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(h) drop manholes to be provided if incoming sewer pipe is higher than outgoing sewer by 600mm
G COMPUTATION FOR PROVISION OF SANITARY FITTINGS <i>(Based on provisions of MS 1228: Design and Installation of Sewerage System and Sarawak Drainage, Sanitation and Sanitary Plumbing By-Laws, 1981)</i>		
1 <u>Domestic house</u>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1.1 each house to have minimum 1 W.C. for every 6 persons or 3 bedrooms
2 <u>Business premises, offices and godowns</u>		
2.1 <u>male toilet facilities</u>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(a) 25 persons and under — 1 w.c. & 1.2m urinal channel/2 no. of urinal bowl
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(b) 50 persons and under — 2 w.c. & 2.4m urinal channel/4 no. of urinal bowl
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(c) 100 persons — 3 w.c. & 3.6m urinal channel/ 6 no. of urinal bowl
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(d) one additional w.c. and 1.2m urinal channel/2 urinal bowls for every 50 persons in excess of 100 persons
2.2 <u>female toilet facilities</u>		
<input type="checkbox"/>	<input type="checkbox"/>	(a) 1 w.c. for every 20 persons
3 <u>Schools</u>		
3.1 <u>male toilet</u>		
<input type="checkbox"/>	<input type="checkbox"/>	(a) 2 w.c. and 2m urinal channel /3 urinal bowls per 100 persons
3.2 <u>female toilet</u>		
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(a) 3 w.c. for first 50 persons
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(b) 3 w.c. for second 50 persons
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	(c) 4 w.c. for each subsequent 100 persons

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<input type="checkbox"/>	<input type="checkbox"/>	<p>4 <u>Public buildings</u></p> <p>4.1 <u>male toilet</u> (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</p> <p>4.2 <u>female toilet</u> (a) 1 w.c. for every 100 persons or part thereof</p>
<input type="checkbox"/>	<input type="checkbox"/>	<p>H <u>DRAWING REQUIREMENTS</u></p> <p>The following shall be included in the drawings as notes:</p> <p>(a) Schematic drawing shall be provided for supply and waste water plumbing</p> <p>(b) Isometric drawing shall be provided if plumbing works are complex</p> <p>(c) Door and window schedule shall be provided, indicating type and dimension</p>
<input type="checkbox"/>	<input type="checkbox"/>	<p>I <u>NOTES IN THE DRAWINGS:</u></p> <p>The following shall be included in the drawings as notes:</p> <p>(a) Wheel bins shall be provided on site prior to issuance of Occupation Permit</p> <p>(b) Original warranty letter from the manufacturer to be submitted during Occupation Permit inspection</p> <p>(c) All manhole covers to be sealed with bitumen compound or equivalent</p> <p>(d) Outlet pipes shall be provided for condensers of air conditioning units and shall be discharged to concrete drains</p> <p>(e) Plumbing from floor to floor conforming to Code of Practice (<i>MS 1228: Design and Installation of Sewerage System</i>)</p> <p>(f) Inspection or roding eye provided to all bends, junctions and joints</p> <p>(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 [<i>by-law 34</i>]</p> <p>(h) Provisions of Schedule C of the SBO 1994 shall apply to buildings which are mechanically ventilated or air-conditioned [<i>by-law 34(3)</i>]</p>

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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*