

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
<input type="checkbox"/>	<input type="checkbox"/>	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

BUILDING PLAN CHECKLIST

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

<u>N.A.</u>	<u>YES</u>	<u>Item</u>																
<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"/>	<table style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th></th> <th style="text-align: center;"><u>Soil</u></th> <th style="text-align: center;"><u>Total Waste</u></th> <th style="text-align: center;"><u>Effluent</u></th> </tr> </thead> <tbody> <tr> <td>(a) 100mm Ø minimum</td> <td style="text-align: center;"><i>1 to 40</i></td> <td style="text-align: center;"><i>1 to 90</i></td> <td style="text-align: center;"><i>1 to 120</i></td> </tr> <tr> <td>(b) 150mm Ø minimum</td> <td style="text-align: center;"><i>1 to 60</i></td> <td style="text-align: center;"><i>1 to 150</i></td> <td style="text-align: center;"><i>1 to 180</i></td> </tr> <tr> <td>(c) 230mm Ø minimum</td> <td style="text-align: center;"><i>1 to 90</i></td> <td style="text-align: center;"><i>1 to 265</i></td> <td style="text-align: center;"><i>1 to 270</i></td> </tr> </tbody> </table>		<u>Soil</u>	<u>Total Waste</u>	<u>Effluent</u>	(a) 100mm Ø minimum	<i>1 to 40</i>	<i>1 to 90</i>	<i>1 to 120</i>	(b) 150mm Ø minimum	<i>1 to 60</i>	<i>1 to 150</i>	<i>1 to 180</i>	(c) 230mm Ø minimum	<i>1 to 90</i>	<i>1 to 265</i>	<i>1 to 270</i>
	<u>Soil</u>	<u>Total Waste</u>	<u>Effluent</u>															
(a) 100mm Ø minimum	<i>1 to 40</i>	<i>1 to 90</i>	<i>1 to 120</i>															
(b) 150mm Ø minimum	<i>1 to 60</i>	<i>1 to 150</i>	<i>1 to 180</i>															
(c) 230mm Ø minimum	<i>1 to 90</i>	<i>1 to 265</i>	<i>1 to 270</i>															
<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																

BUILDING PLAN CHECKLIST

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

N.A.	YES	Item
<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>)

BUILDING PLAN CHECKLIST

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

N.A.	YES	Item
		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

BUILDING PLAN CHECKLIST

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

N.A.	YES	Item
<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 (<i>MS 1228: Design and Installation of Sewerage System</i>)
<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

BUILDING PLAN CHECKLIST

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

N.A.	YES	Item
	<input type="checkbox"/>	(b) Foundation of 50mm thick lean concrete
	<input type="checkbox"/>	(c) Channeling of half round pipe of same material as the sewer joining the manhole
	<input type="checkbox"/>	(d) sulphate resistant cement mortar rendered smooth to internal surface
	<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"/>	(a) 1 w.c. for every 20 persons
		3 <u>Schools</u>
		3.1 <u>male toilet</u>
	<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

BUILDING PLAN CHECKLIST

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

N.A.	YES	Item
<input type="checkbox"/>	<input type="checkbox"/>	<p>4 Public buildings</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 DRAWING REQUIREMENTS</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 NOTES IN THE DRAWINGS:</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>

BUILDING PLAN CHECKLIST

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

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

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

- 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*