

BIP Checklist

To facilitate BIP evaluation, all applications shall include the drawings, detailing, test reports, certificates, relevant approvals from overseas authorities, and other documentation of the proposed system covering sections (A) to (G) described below.

(A) General

1. Overview of the proposed system
 - 1.1. Construction cost
 - 1.2. Construction time & productivity improvement
 - 1.3. Characteristics of the proposed system
 - 1.4. Manufacturing process in factory
 - 1.5. Method of assembly on site
 - 1.6. Project track records (both local and international ,if any)

(B) Design & Construction (BCA)

Structural Design

1. Construction material – include material type, grade and dimension
2. QA/QC Inspection
 - 2.1. Off-site construction / production (local/overseas)
 - 2.2. On-site construction / installation
 - 2.3. Non destruction examinations
3. Structural design code & specification
4. Compliance with building control act & regulations and other international codes (show approvals from overseas authorities, where relevant)
5. Structural performance
6. Loading criteria – dead, live, earthquake and wind
7. Serviceability criteria - building lateral, deformation and vibration
8. Differential movement
9. Lateral stability
10. Corrosion protection (where relevant)
11. Architectural and structural plans to illustrate the proposed system (min. A3 drawing size)

Prefabrication, Quality and Maintenance

1. Method of preventing damage to finishes and fittings during storage, transportation and installation
2. Façade interfacing, types of façade available, constraints, cladding possibilities
3. Roofing interfacing, opportunities and constraints
4. Internal door interfacing
5. Areas and span of proposed system components
6. Provision of wall openings
7. Staircases material and its connection
8. Mechanical & electrical works
 - 8.1. Shaft installation
 - 8.2. Electrical wiring installation
9. Building maintenance works
 - 9.1. Corrosion
 - 9.2. Façade cleaning

9.3. Water leakage / waterproofing

9.4. Crack line

(C) Transportation & Logistics (LTA)

1. Proposed Transportation Plan -
 - 1.1 Indicate route from factory to holding area/construction site and travel schedule (to mark up on the map)
 - 1.2 State vehicle type, overall dimensions (width, rear overhang, length & height) and weight
 - 1.3 Refer to LTA.PROMPT for oversized vehicle movement (OVM) permit requirements
2. Lifting and Installation Method
3. Holding Areas - Proposed location to hold the proposed system (location to mark up on location map)
 - 3.1 The holding areas should be within development sites and lifting works should not affect public streets.
4. Road surface protection (where relevant)
 - 4.1 Type of protection material and method to be clearly illustrated. For example, protection measures for the road bitumen surface.
5. Road signage relocation (where relevant)
 - 5.1 Type and quantity of affected signages
 - 5.2 New locations to house the affected signages must be clearly illustrated in the map and photographs.

(D) Worksite Safety & Lifting (MOM)

1. Risk Management

- 1.1 Engage a MOM Approved WSH Auditor to conduct a Risk Management audit;
 - 1.1.1 Scope of audit shall include an assessment of the adequacy of the Risk Assessments/ Safe Work Procedures of the various proposed system related processes such as transportation, onsite storage, lifting, shifting and installation arrangement.
 - 1.1.2 If the plant is located in Singapore, the scope of audit shall cover full factory operations. Including an assessment of the plant layout and adequacy of the Risk Assessments/ Safe Work Procedures of the various proposed system related processes for both dry and wet trades;
- 1.2 Company to be certified minimally as bizSAFE Level 3.

2. Design for Safety (DfS)

- 2.1 Highlight PROPOSED SYSTEM "Design for Safety" considerations and features specially catered for:
 - 2.1.1 Onsite Lifting and Installation
 - Include details of lifting plan, equipment (e.g. crane, frame, chains, pulley and loading platform, design for wheeled jack), rigging details, load restraint method, PE's design and calculations;
 - Details of lifting lugs built into the proposed system component (if applicable)
 - 2.1.2 Future proposed system related building maintenance, defect rectifications and demolition work processes.
- 2.2 Step-by-step pictorial illustration:
 - 2.2.1 Submit a complete step-by-step pictorial safe work procedure illustration of the entire process of the onsite proposed system lifting, movement and installation.
- 2.3 Acceptable proposed system installation/ transfer method:
 - 2.3.1 Top-down critical path installation method, and/ or
 - 2.3.2 Horizontal entry (non-critical path installation), using on site preinstalled PE's design and PE's certified materials receiving platform.

Note: For all other methods, applicant shall submit proposal to MOM separately for case by case assessment on per project basis.

3. Submission to MOM

- 3.1 The audit report stated in 1.1
- 3.2 certification document in 1.2
- 3.3 the company's audit action plan and all the necessary supporting documents/ photographic records closing off of the Audit Report recommendations as requested in 1.1
- 3.4 supporting document under 2.1 and 2.2
- 3.5 self-declaration of installation method(s) under 2.3

(E) Bathroom, Sanitary & Water Services (PUB)

1. Sanitary System

- 1.1 The design of the sanitary work shall comply with the Sewerage and Drainage (Sanitary Work) Regulation and the code of practice for sewerage and sanitary work.
- 1.2 Mock-up Bathroom Drawing and Sectional Plan
- 1.3 Sanitary and Discharges Pipes Detail Plan
- 1.4 Corrosion Protection and Water Proofing (if relevant)
- 1.5 Floor-Trap Details
 - 1.5.1 Shallow Floor Trap requirement:
 - 1.5.1.1 State the model no of Snow Brand shallow FT to be used
 - 1.5.1.2 To submit certificate of compliance EN1253-1, with test reports to be enclosed:
 - Anti-Blockage test
 - Water tightness test
 - Flow Rate Test
 - Odour tightness Test
 - Resistance of Water Seal to Pressure
 - Depth of Water Seal
 - Access for Cleaning
 - Side inlet
 - 1.5.2 On top of the requirement specified in EN1253, the following requirement for shallow floor trap are to be complied:

Descriptions	Standard Requirements
Depth of Water Seal	Min 50mm
Passage Clearance	Min 25mm
Outlet Diameter	Min 75mm
Floor Trap (Water Compartment)	Shall be integral type, removable trap is not allowed.
Floor Trap Grating and Anti-Mosquito Valve	Shall incorporate an approved type of floor trap grating and anti-mosquito valve
Service Plug in the Floor Trap (if provided)	To provide permanent instruction label to the service plug.

2. Water Service Installation

- 2.1 The design of the water service installation and the water service work shall comply with the Public Utilities (Water Supply) Regulations as well as the Singapore Standard CP48 - The Code of Practice for Water Services.
- 2.2 Water pipes and fittings to be used shall comply with the standards and requirements stipulated by PUB.

(F) Fire Safety (SCDF)

1. Provision of documental proofs and detail drawings to illustrate compliance of fire code requirements of proposed system in terms of compartmentation, material usage, etc.
2. Mode of fire protection
3. Sectional plans to show the fire protection details and elements
4. Details on the use of plastic materials on or within floors, walls and ceilings, if any
5. Types and integrity of the fire rated board system
6. Fire safety review of the system conducted by fire safety engineer, where relevant
7. Fire test performance reports & certificates of conformity (COCs) for regulated fire safety products for building construction in Singapore
8. Mock-up physical sample (1 no.) of proposed system, where relevant. Clear illustration of the components of the system to show integrity and resistance to tampering

(G) Environmental (NEA)

1. The system shall comply with the technical requirements and provisions stipulated in the following:
 - 1.1 Code of Practice on Environmental Health
 - 1.2 Singapore Standard SS 593: Code of Practice for Pollution Control
 - 1.3 Code of Practice on Sewerage and Sanitary Works
 - 1.4 Code of Practice on Surface Water Drainage
 - 1.5 Environmental Protection and Management Act and its subsidiary regulations, including the Environmental Protection and Management (Control of Noise at Construction Sites) Regulations
 - 1.6 Environmental Public Health Act
 - 1.7 Sewerage and Drainage Act