

ISSUE	DESIGN STAGE		CONSTRUCTION STAGE		OPERATION STAGE	
	CHECK	REVIEW	CHECK	REVIEW	CHECK	INSPECT
(1) Qualifications	Accredited Checkers of BEM only (BEM is currently taking action to register Accredited Checkers.)	Any Professional Engineer of appropriate discipline, preferably an Accredited Checker or Professional Engineer possessing equivalent experience.	Accredited Checkers of BEM only (BEM is currently taking action to register Accredited Checkers.)	Any Professional Engineer of appropriate discipline, preferably an Accredited Checker or Professional Engineer possessing equivalent experience.	Not Applicable	Any Professional Engineer of appropriate discipline, preferably an Accredited Checker or Professional Engineer possessing equivalent experience.
(2) Designation	Accredited Checker	Reviewer	Accredited Checker	Reviewer	Inspector	Not applicable
(3) Responsibilities of Accredited Checker/Reviewer/Inspector	<p>(1) When an engineer is engaged to undertake a checking, reviewing or inspecting role, liabilities are implied. These will be in contract to his client, who may in some cases be the submitting/design engineer (1st Engineer), and in tort to any employer of that client or other third party. It is, therefore, essential that the terms of engagement are clearly set down and agreed to in writing by the contacting parties.</p> <p>(2) In his own interest the checking/reviewing/inspecting engineer should have adequate professional indemnity insurance cover on a project or on an on-going basis. The engineer, however, may wish to advise his client that he (a) wishes to limit his professional indemnity insurance cover; (b) has limited cover; or (c) has no insurance cover, and that he will only undertake the work if the client (i) accepts the limit of the cover specified, (ii) limits it to the cover available or (iii) undertakes not to make any claim as the case may be. Any such declaration, however, would not afford protection against claims in tort unless the employer provides an indemnity against claims above an agreed limit.</p>					
(4) Restrictions on Checker/Reviewer	A Checker shall not be permitted to take over a project of which he is the Checker or any part thereof unless with the written consent of the 1 st Engineer. Such consent shall not be unreasonably withheld except on the grounds of supplanting. Any dispute therefrom can be referred to BEM for resolution.				Not applicable	Not applicable
(5) Party to appoint Checker/Reviewer/Inspector and to pay relevant fees	Owner of project or his agent	Owner of project or his agent	Owner of project or his agent	Owner of project or his agent	Not applicable	Owner of project or his agent

TABLE A - TABLE OF GUIDELINES

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<p>(6) Type of project to be covered (as proposed by BEM to Ministry of Housing & Local Government; awaiting latter's action to amend Street, Drainage & Building Act)</p>	<p>(1) any building > 5 storeys; (2) any building on/or near hill slope with gradient > 25° and/or height > 15 meters or twice the height of the building whichever is lower (3) retaining wall > 4 meters in height or depth (4) Factory or manufacturing plant for explosives or highly inflammable materials; (5) Any project which, in the opinion of the approving authority, requires safety check.</p> <p>(Building shall mean any building intended for human habitation or occasional occupation.)</p>	<p>As required by the owner on his own accord.</p>	<p>The present provisions in Clause 70B of the Street, Drainage and Building Act 1974 cover any building under suspicion of defect.</p>	<p>As required by the owner on his own accord</p>	<p>Not applicable</p>	<p>As required by the Local Authority</p>

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<p>(7) Scope of work</p>	<p>Shall include, but not necessarily limited to, the following, where applicable:-</p> <ol style="list-style-type: none"> (1) stability of structure of building in carrying the design loads; (2) suitability and adequacy of foundation system in carrying the design loads; (3) stability of soil and/or rock mass due to :- <ol style="list-style-type: none"> (a) changes made to the ground topography by earthworks including cutting, filling and/or excavation; (b) changes in natural drainage system; and (c) changes in vegetation on site; (4) stability of artificially built soil/rock mass and its retaining system. 	<p>To be specified by the project owner. Can be any or all of the following :-</p> <ol style="list-style-type: none"> (a) engineering design; (b) engineering system; (c) choice of materials; (d) method of construction; (e) cost optimisation; (f) safety check; (g) stability check; and (h) any other aspect deemed necessary by the owner. 	<p>As specified by the relevant authority or the owner.</p>	<p>As specified by the owner.</p>	<p>Not Applicable</p>	<p>Not Applicable</p>
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	CHECK	REVIEW	CHECK	REVIEW	CHECK	INSPECT
(8) Minimum scope of checking/reviewing/inspecting	Shall include, but not necessarily limited to, the following, where applicable:- (a) design concept; (b) theory and code of practice adopted; (c) adequacy of key elements in terms of load carrying capacity, load transfer system and design, drawing details; (d) factor of safety of geotechnical aspects with respect to the project itself and its adjacent properties; (e) influence of surrounding structure/engineering features on the safety of the project; (f) any safety features specific to the project; (g) preparation of independent check calculation on key elements; and (h) preparation and submission of review report giving comments and calculation, recommendations, etc.	To be agreed between project owner and review engineer, and incorporated in agreement. If alternative design is asked for by the owner, the Reviewer must justify the merits of his alternative design with detailed description of concept, system, analyses, etc.	As specified by the relevant authority or the owner.	As specified by the owner.	Not Applicable	As required by the Local Authority

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(9) Recommended procedure for settlement of disagreement	<p><u>In Checking :</u></p> <p>(a) If the 1st Engineer accepts the comments of the Checker, he shall make necessary amendments and take responsibility.</p> <p>(b) If the 1st Engineer disagrees and rejects the comments of the Checker, the owner shall engage a 2nd Checker (acceptable to both the 1st Engineer and the Checker) whose opinion shall be final. If the 1st Engineer accepts the decision of the 2nd Checker, he shall make necessary amendments and take responsibility. Otherwise, he shall resign as consultant to the owner.</p> <p>Responsibilities of Checker and 2nd Checker shall always remain as in (3)</p> <p><u>In Reviewing :</u></p> <p>(i) If the 1st Engineer accept the comments of the Reviewer, he shall make necessary amendments and take responsibility.</p> <p>(ii) If the 1st Engineer disagrees and rejects the comments of the Reviewer, the owner shall decide whether to go along with or dismiss the 1st Engineer. The owner may get a 2nd Engineer to take over as consultant provided the restrictions as in (4) are observed.</p> <p>Responsibilities of Reviewer and any 2nd Reviewer shall always remain as in (3)</p>				Not Applicable	Not Applicable