



BOARD OF ENGINEERS MALAYSIA

GUIDELINE NO. 002

INDUSTRIALISED BUILDING SYSTEM (IBS) WORKS AND IT'S IMPACT ON SCALE OF FEES

1.0 Introduction

1.1 The following two (2) modes of procurement for IBS works are considered –

- (a) The Catalogue System
Where the Consulting Engineer (CE) designs around a set of preferred standard sizes that IBS providers have in common. The CE's scope of work will remain the same as described in the Scale of Fees (Revised 1998) on Stages of Payment of Fees (Stage 1 to 5).
- (b) Registered IBS System Provider (RISP)
Where it is envisaged that the RISP provides part or full services related to detail design and calculation of the IBS components as described under Stage 3 – Design Stage (ii) of the Stages of Payment of Fees.

2.0 Rationale on Impact to the Scale of Fees

2.1 The key basis to be considered for fee computation involving IBS are –

- (a) the amount of input (in terms of knowledge, experience and time) the CE has put into the design; and
- (b) the responsibilities the CE carries for the design.

2.2 Any adjustment of fee for IBS content in design shall be analysed using these two criteria, irrespective of the type of IBS listed by CIDB.

2.3 The construction industry has been encouraged to use IBS as a means of reducing labour content and dependence on foreign labour. IBS may be able to deliver projects at an earlier completion period. However, IBS may not necessarily deliver projects below the cost of conventional construction methods. Generally it may cost more but is delivered with improved quality.

- 2.4 When a CE is engaged for a building project, he is mandated, by virtue of his appointment, to be the Submitting Person (to the Local Authority) for civil and structural works for the project, unless it has been specifically stated otherwise by the client at the time of appointment.
- 2.5 A building system, or a building sub system, is a system consisting of components which, when assembled, will function on its own as designed. A building system using IBS is one in which almost all the building components are prefabricated (e.g. precast concrete column, walls, floor, beam. etc.) and altogether the components work as a system e.g. load bearing wall system for an apartment. A building sub system using IBS is one which can be designed and prefabricated independently and assembled on site in conjunction with other sub systems to form the whole building, e.g. roof truss, structural steel frame, load bearing wall, precast staircase, etc. For a building system or a sub system which incorporates IBS, adjustment of the CE's fees may be warranted under certain circumstances.
- 2.6 The use of precast components designed by the CE, or selected by the CE from commercial catalogues, or the use of reusable formwork, though considered as IBS by CIDB, does not warrant adjustment to the CE's fee because it is merely a different method of fabrication. The CE's design input and responsibilities remain unchanged.
- 2.7 The design of an IBS system or sub system shall be undertaken by a Professional Engineer (referred herein as **IBS Designer** for ease of reference) registered with the Board of Engineers, Malaysia. The IBS Designer shall be responsible for the design as well as the fabrication and installation of the system or sub system on site in coordination with other contractors of the project.
- 2.8 For any IBS system or sub system, the IBS Designer shall be considered, for his part of the work, as "PROVIDING SPECIALIST TECHNICAL ADVICE" referred to in Clause 2(2)(b)(i) of the Scale of Fees of the Board of Engineers. He shall be mandated to sign all design drawings of the IBS works. If the IBS is a proprietary system, the IBS Designer shall take professional liabilities for the design by endorsing the proprietary drawings. He shall also take full professional responsibilities for the system installation on site (and sign off as the installation contractor) in compliance with the requirements of issuance of the **Certificate of Completion and Compliance – Form G4**.
- 2.9 Where the CE has been instructed to prepare, and has prepared, preliminary drawings which include structural layout comprising beams, columns, slabs, etc. for tendering which allows the tenderers to offer their own IBS systems, the CE shall be paid the design fees of **Preliminary Stage** and **Design Stage (i)**, as stipulated in Clause 1.(2)(a) and (b)(i) of the Scale of Fees. In addition, he shall be paid a fee as described in (2.11) below.
- 2.10 The CE shall coordinate the work of the IBS Designer to ensure that the IBS works fit into the whole building structural system. The CE shall also undertake the administrative works of being the Submitting Person. The IBS Designer and RISP shall indemnify the CE jointly and severally in writing against claims for injuries or damages due to inadequacy or failure of the IBS works.

- 2.11 As the Submitting Person, the CE is required to check the design undertaken by IBS Designer as stipulated in Clause 1.(2)(b)(ii) which includes preparing all other drawings in sufficient details to enable construction to be carried out that would have been otherwise carried out by the CE. For this checking work, the CE becomes a design checker.
- 2.12 The CE shall be paid by his Client a portion of Design Stage (ii) fees for submission to any appropriate authority, advising on conditions of contract and specifications relevant to the works.
- 2.13 In conjunction with (2.11) and (2.12) should there be no change in the scope and responsibility of the CE, then no reduction in fees shall apply.
- 2.14 Notwithstanding the above, a Client may reduce the scope of services with mutual consent of the CE.

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