

## GUIDE FOR EARLY CONTRACTOR INVOLVEMENT (ECI) PROCUREMENT METHODS FOR PUBLIC SECTOR CONSTRUCTION PROJECTS

### DEFINITION

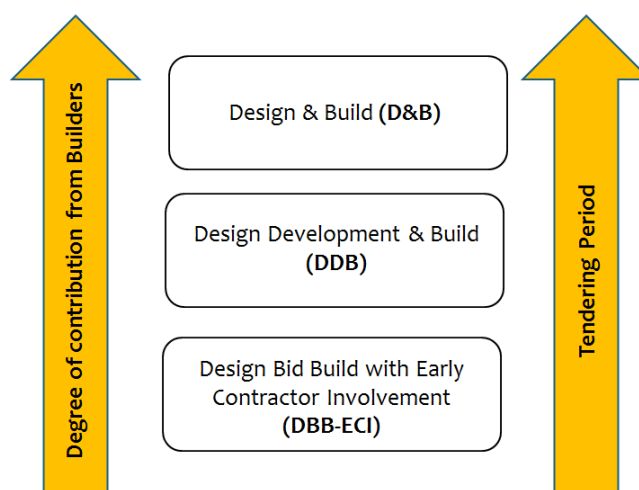
- i) “Architect” means registered architect with the Board of Architects.
- ii) “Builder” means licensed builder under Building Control (Licensing of Builders) Regulations 2008.
- iii) “Employer” means the Government Procuring Entities.
- iv) “Engineer” means professional engineer with the Professional Engineers Board.

### PREAMBLES

ECI is an approach where Builders are engaged early during the design stage to facilitate integration of design and construction process, through early collaboration between the Employer, consultants and Builders. There are different models of ECI and they vary from each other depending on the stage where the Builders become involved.

As the ECI process requires efforts from Builders, Consultants and Employer, it is encouraged to consider adopting ECI in projects of larger value and/or more complex in nature or if there are benefits in having the contractor’s early inputs into the design.

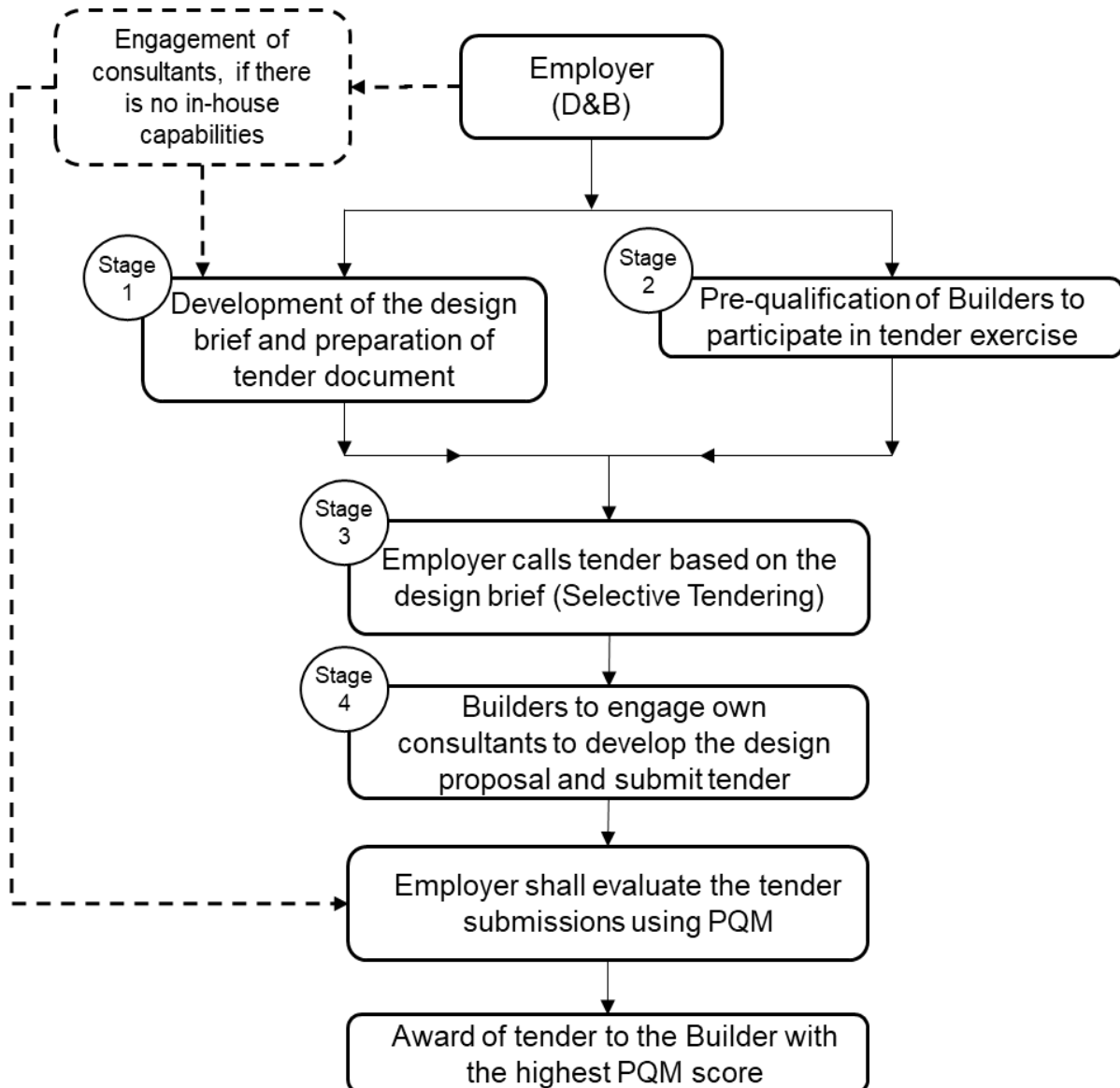
The 3 identified models of ECI below facilitate different degree of contribution from the Builders, in terms of design, and differs in the tender period required.



Model	ECI	Inputs by Builders
1.	Design & Build (D&B)	Develop full design (Arch, C&S, MEP) based on design brief
2.	Design Development & Build (DDB)	Develop detailed design, including C&S and MEP, based on architectural concept design
3.	Design Bid Build with Early Contractor Involvement (DBB-ECI)	Provide alternative design solution(s) based on full design

## MODEL 1. DESIGN & BUILD (D&B)

1.1 D&B is a procurement method where the functions of design and construction are placed entirely with the Builders. Procedures for D&B are shown in Figure 1a below:



**Figure 1a – Procedures for D&B**

- 1.2 The Employer will develop the design brief and prepare tender documents for the calling of tender for Builders, as well as administer the contract. The employer may engage consultants for these tasks if necessary.
- 1.3 Based on the design brief, each pre-qualified Builder will engage his own consultants to develop the design proposal and submit a tender bid.
- 1.4 The number of pre-qualified Builders at Tender stage is up to 4 only.
- 1.5 There may be frequent interaction between each pre-qualified Builder and the consultants during tender stage through 1-to-1 discussions. An Employer's representative would also be present at every discussion.
- 1.6 The Employer, consultants and tenderers are requested to sign a Non-disclosure Agreement to ensure the information provided by tenderers during or at tender submission is treated as confidential and shall not be disclosed or used without consent.
- 1.7 Tender submissions shall be evaluated based on the PQM framework, and the tender will be awarded to the tenderer with the highest PQM score.
- 1.8 The successful Builder will then develop and construct the project according to the accepted full design proposal.
- 1.9 The duties and responsibilities of the Qualified Persons (QPs) are undertaken by the consultancy team under the awarded Builder.

## MODEL 2. DESIGN DEVELOPMENT & BUILD (DDB)

2.1 DDB is a procurement method where the Employers are able to retain control of the architectural concept design while responsibility of full design development is placed with the Builders. Procedures for DDB are shown in Figure 2a below:

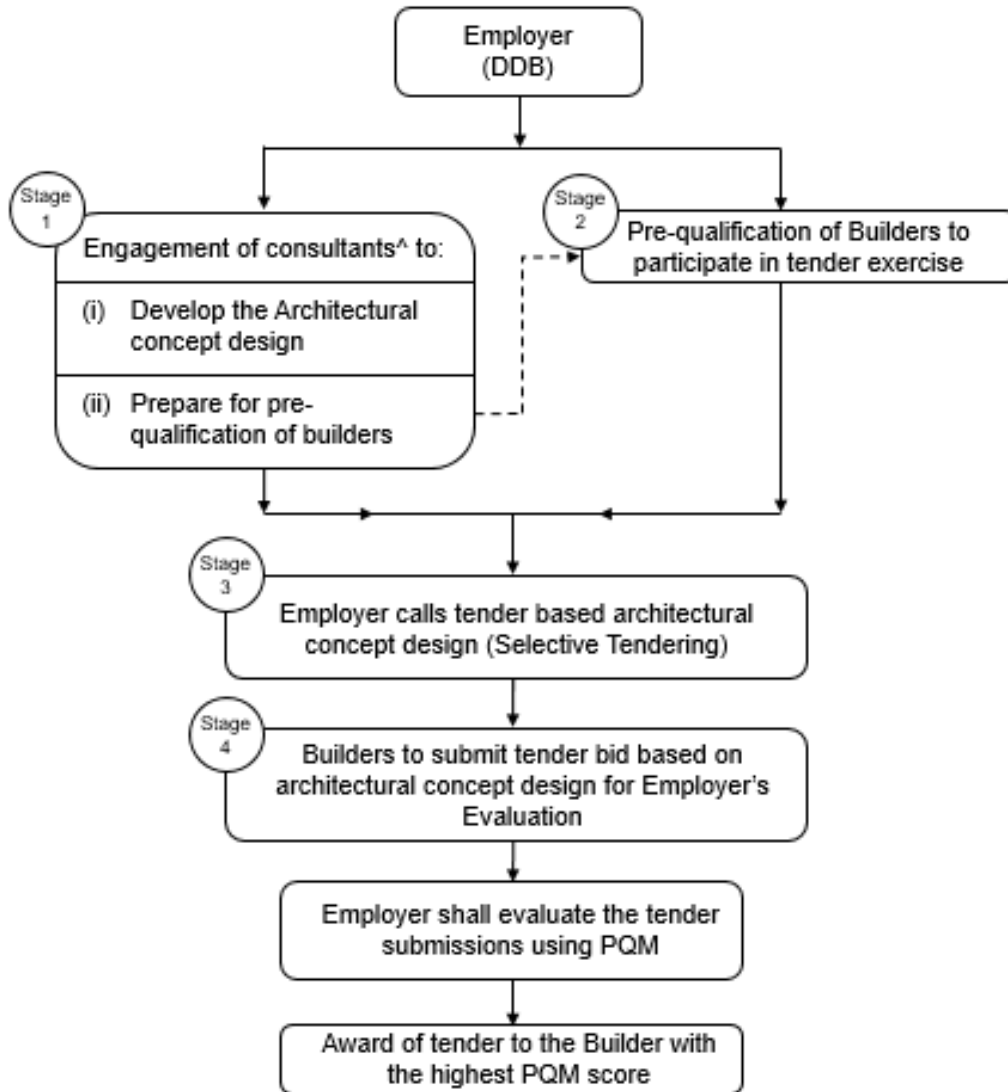


Figure 2a – Procedures for DDB

- 2.2 The Employer will engage the consultants for the architectural concept design, in accordance with the Quality-Fee Method (QFM) framework.
- 2.3 The Employer may retain his consultants as part of the project management team; novate the services of his consultants to the awarded Builder; or allow the pre-qualified Builders to have flexibility to engage their preferred consultants.
- 2.4 The number of pre-qualified Builders at Tender Stage is up to 4 only.
- 2.5 Based on the architectural concept design, each pre-qualified Builder will engage his own consultants to develop the full design proposal and submit a tender bid.
- 2.6 There may be frequent interaction between each pre-qualified Builder and the consultants during tender stage through 1-to-1 discussions. An Employer's representative would also be present at every discussion.
- 2.7 Employer, consultants and tenderers are requested to sign a Non-disclosure Agreement to ensure the information provided by tenderers during or at tender submission is treated as confidential and shall not be disclosed or used without consent.
- 2.8 Tender submissions shall be evaluated based on the PQM framework and the Tender will be awarded to the Builder with the highest PQM score.
- 2.9 The successful Builder will develop and construct the project according to the accepted full design proposal.
- 2.10 The duties and responsibilities of the Qualified Persons (QPs) are undertaken by the consultancy team under the awarded Builder.

### MODEL 3. DESIGN BID BUILD WITH EARLY CONTRACTOR INVOLVEMENT (DBB-ECI)

- 3.1 DBB-ECI is a procurement method where the Employers are able to retain control of the full design and at the same time, allow Builders to provide alternative design solutions which will result in time and/or cost savings, upfront at tender stage. Procedures for DBB-ECI are shown in Figure 3a below:

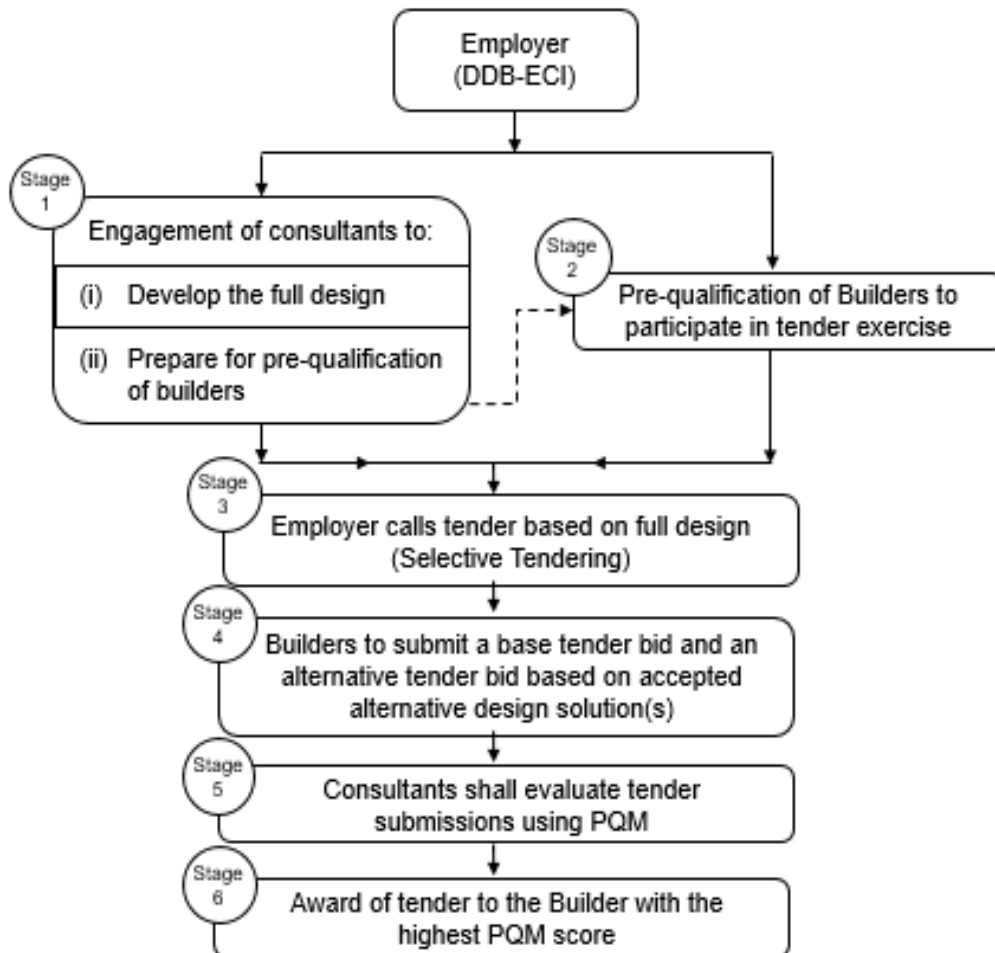
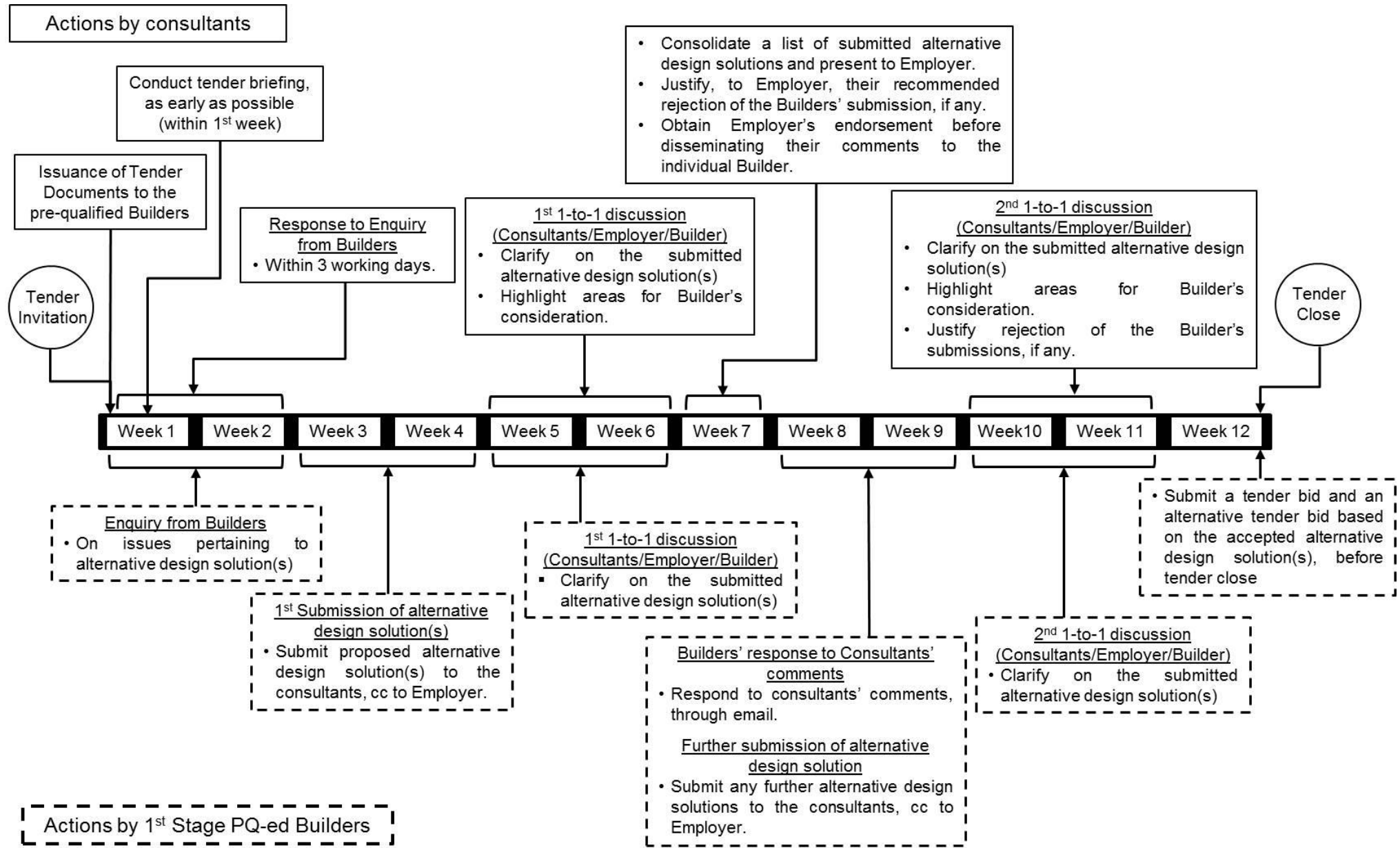


Figure 3a – Procedures for DBB-ECI

- 3.2 The Employer will engage the consultants for the full design, in accordance with the Quality-Fee Method (QFM) framework.
- 3.3 Based on the full design, each pre-qualified Builder is required to work with the consultants individually to review and fine-tune the design, and submit alternative design solution(s) which should result in time and/or cost savings for the project.
- 3.4 The number of pre-qualified Builders at Tender stage is up to 4 only.
- 3.5 There will be frequent interaction between each pre-qualified Builder and the consultants during tender stage through 1-to-1 discussions (Refer to Figure 3b for the expected interaction frequency). An Employer's representative will also be present at every discussion.
- 3.6 Employer, consultants and tenderers are requested to sign a Non-disclosure Agreement to ensure the information provided by tenderers during or at tender submission is treated as confidential and shall not be disclosed or used without consent.
- 3.7 The consultants will provide justification(s) to both the individual pre-qualified Builder, who submitted the alternative design solution(s), and the Employer for any rejection of alternative design solution(s).
- 3.8 Subsequent to the discussions with the consultants, each pre-qualified Builder will submit a base tender bid and an alternative tender bid, which should result in time and/or cost savings. Alternative design solution(s) with higher tender cost than the base tender will not be accepted.
- 3.9 Tender submissions shall be evaluated based on the PQM framework. The Quality (Q) attributes may include evaluation of the impacts of adopting ECI such as innovative proposals submitted and participation level. Tenderers that do not submit an alternative tender bid will not be scored for the ECI attribute under the Quality component.
- 3.10 The Tender will be awarded to the Builder with the highest PQM score. The successful Builder will develop and construct the project according to the accepted alternative design solution(s).



**Figure 3b – Recommended interaction frequency between consultants and 1<sup>st</sup> Stage Pre-Qualified Builders during tender (DBB-ECI)**



## VARIATION OF MODEL 3 - DESIGN BID BUILD WITH EARLY CONTRACTOR INVOLVEMENT AND PROGRESSIVE PROJECT INFORMATION (DBB-ECI-PPI)

4.1 DBB-ECI-PPI is a variation of Model 3 (DBB-ECI). Preliminary tender documents will be released in packages during tender, allowing consultants more time to develop various scopes which are of lower urgency. (E.g. MEP & Landscape) Procedures for DBB-ECI-PPI are shown in Figure 4a and 4b below. Please refer to DBB-ECI for the detailed guidelines.

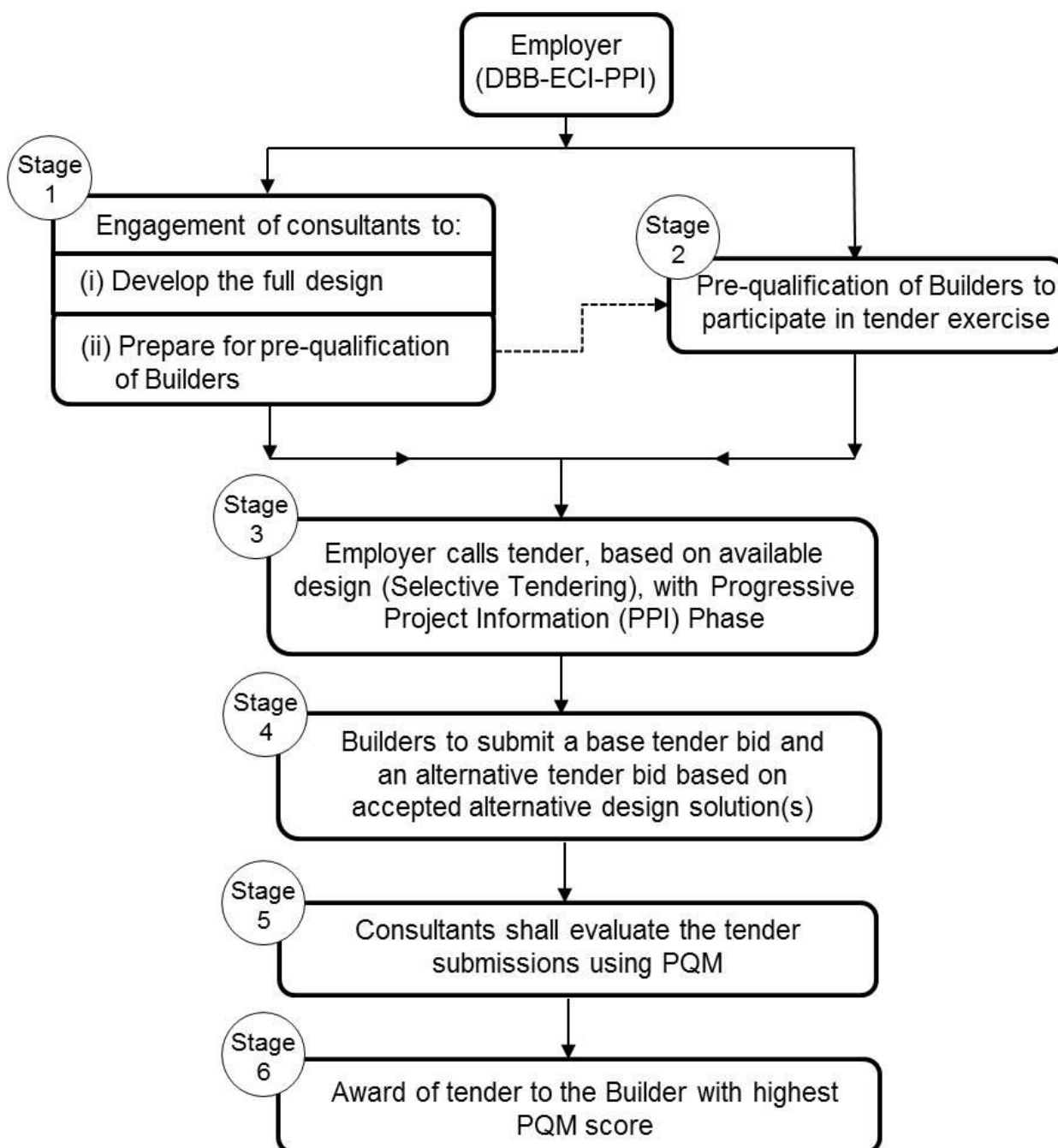


Figure 4a – Procedures for DBB-ECI-PPI

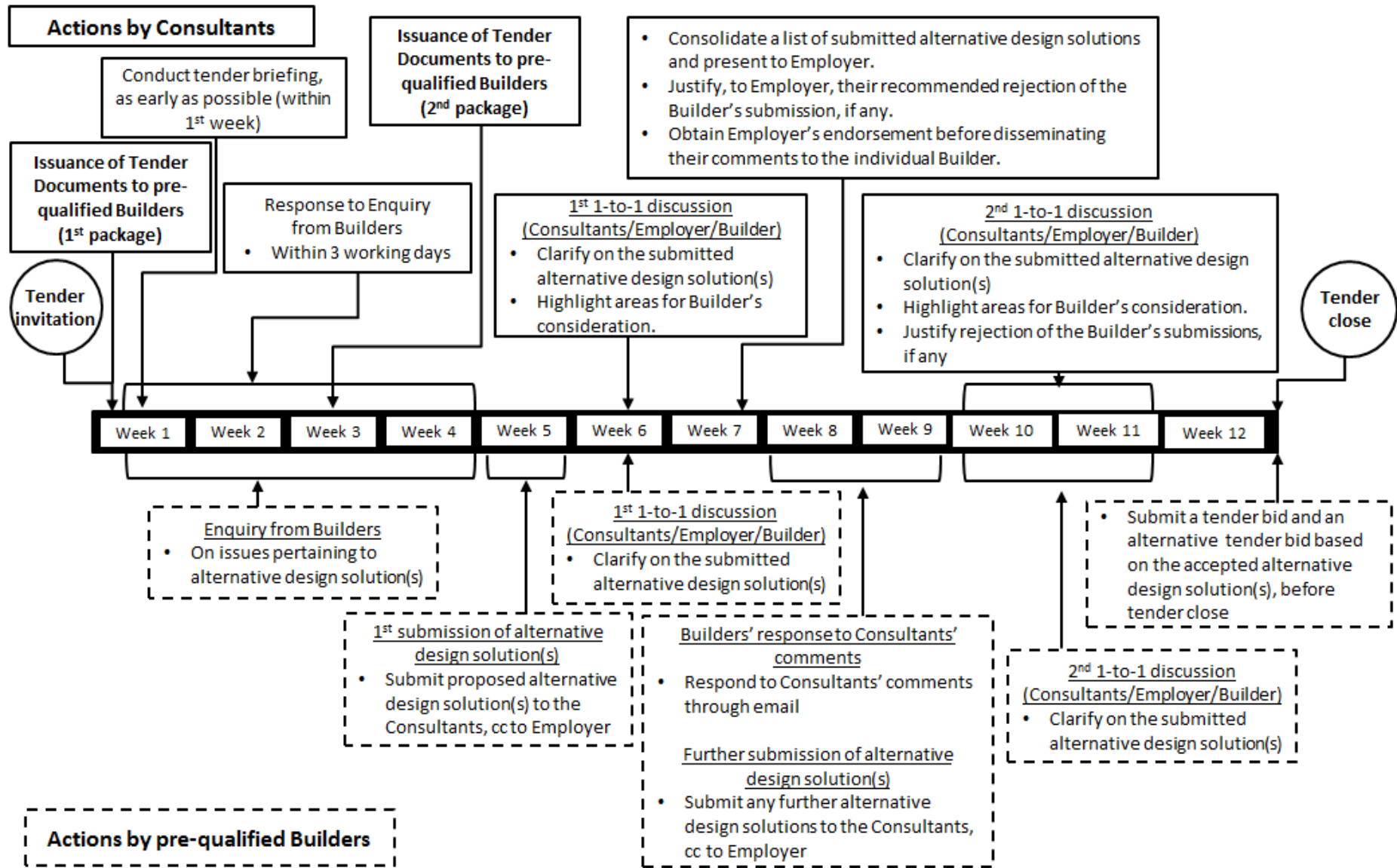


Figure 4b – Recommended interaction frequency between consultants and 1<sup>st</sup> Stage Pre-Qualified Builders during tender (DBB-ECI-PPI)