

QUALITY FEE METHOD (QFM)

Guide to QFM Framework

Effective for Expression of Interest (EOI) exercises and tenders called on and after 15 December 2020

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1. Introduction to QFM

GENERAL

1.1. The QFM is a structured framework for the selection of the most suitable bid proposal that provides the best value for the tender. It is a competitive selection method that considers both Fee and non-Fee proposals submitted by firms.

KEY PRINCIPLES AND FEATURES OF QFM FRAMEWORK

1.2. The QFM framework is underpinned by the following three key principles and its distinct features.

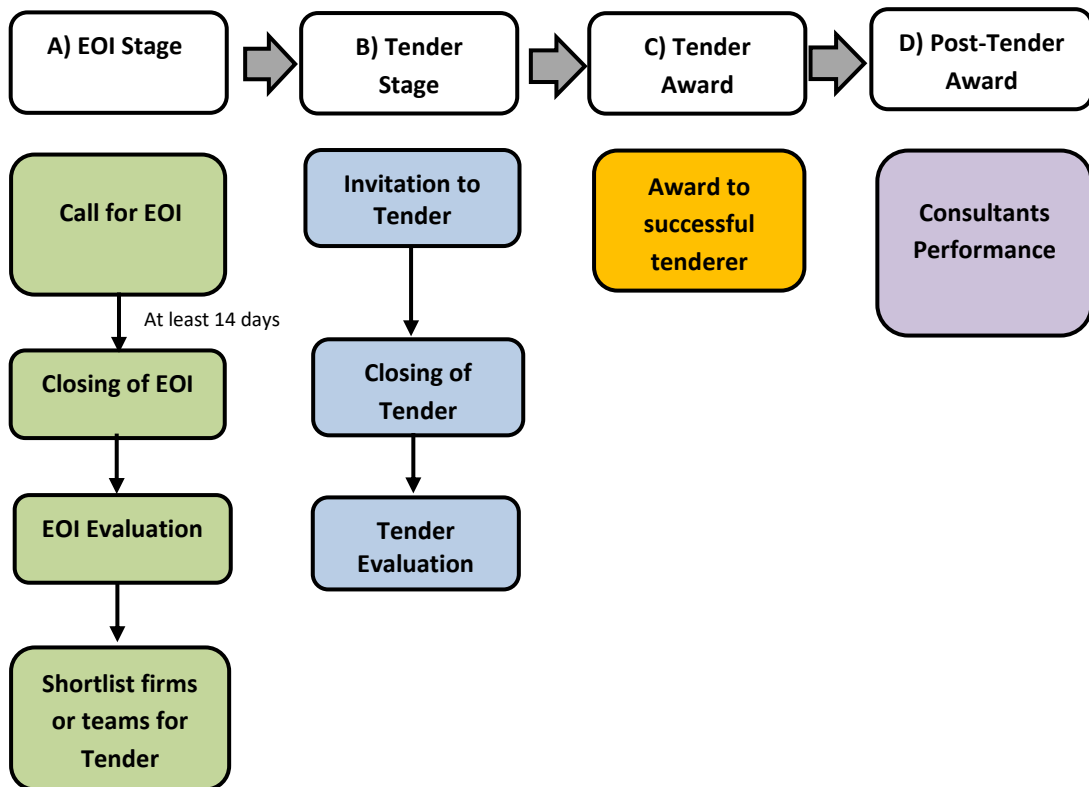
Key Principles	Features of QFM framework								
<p>1) Quality-focused Emphasis on firms' capacity and capability to undertake the project and quality of service; Discourage fee-diving behaviour in tenderers</p>	<p>i. Higher weightage for non-Fee* component</p> <table border="1"> <thead> <tr> <th>Component</th> <th>QFM Weightage</th> </tr> </thead> <tbody> <tr> <td>Quality*</td> <td>50% - 70%</td> </tr> <tr> <td>Productivity*</td> <td>20%</td> </tr> <tr> <td>Fee</td> <td>30% - 10%</td> </tr> </tbody> </table> <p>ii. Mechanism to reduce fee-diving Fee score for low outlier bids is capped; Outlier¹ bids are excluded from the computation of the average fees to prevent skewing of the average.</p>	Component	QFM Weightage	Quality*	50% - 70%	Productivity*	20%	Fee	30% - 10%
Component	QFM Weightage								
Quality*	50% - 70%								
Productivity*	20%								
Fee	30% - 10%								
<p>2) Open and transparent Ensure all tenderers' proposals are evaluated objectively and not affected by the fees proposed</p>	<p>i. Two-envelope system Quality proposals are first opened and evaluated before Fee proposals</p>								
<p>3) Resource efficient Reduce tendering efforts</p>	<p>i. Public Sector Panels of Consultants (PSPC) Tenders are only opened to tenderers from specific PSPC panels, which provides the first sieve to ensure firms' capacity and capability</p> <p>ii. Expression-of-Interest (EOI) stage 5 tenderers are selected for tender stage through the EOI shortlisting process</p>								

¹ Please refer to para 3.7.1 for definition of outlier bids
QFM (updated 17 November 2020)

2. QFM Procedures

QFM TENDER

2.1. There are four key stages of a QFM tender .



A) EOI Stage

2.2. EOI Duration. The EOI stage shall be at least 14 days.

2.3. Tender Eligibility

2.3.1. Public Sector Panel of Consultants (PSPC)

- i. As part of the QFM framework, a central panel called PSPC is to be adopted for procurement of public sector consultancy services in the discipline of Architectural² (AR), Civil and Structural (CS), Mechanical and Electrical (ME), Quantity Surveying (QS) and Project Management (PM).

² Architectural scope includes masterplanning

- ii. The eligibility of PSPC firms is pegged to the estimated construction cost of project and only firms listed in PSPC under the corresponding panels are eligible.
- iii. PSPC-registered firms (within the same discipline) may pool their resources to be eligible to tender for projects beyond their panels' current allowable tendering limits under Collaborative Bidding.

2.3.2. Single-discipline and Multi-disciplinary Team (MDT) approach. The tenderers or members of MDT shall fulfil the eligibility criteria stipulated at the point of EOI closing. In an MDT, the lead consultant shall not participate as a lead consultant in another MDT for the same tender.

2.4. Shortlisting Method. Tenderers shall be shortlisted for tender stage through i) Balloting (1-stage QFM), or ii) Selection by merits (2-stage QFM) depending on the Estimated Construction Cost of Project as below.

	1-stage QFM (Balloting)	1-stage QFM or 2-stage QFM (Balloting or Selection by merits)	2-stage QFM (Selection by merits)
Project value	Up to \$40mil	Above \$40mil and up to \$85mil	Above \$85mil

Note: Please refer to BCA's website for the latest cut-off values as these will be adjusted based on the current tender price index (TPI).

2.5. EOI Evaluation

2.5.1. *EOI Shortlisting process*

- a) 1-stage QFM. The EOI Stage involves balloting of five eligible firms.
 - i. There shall be no request for or evaluation of Quality proposal, other than those used to fulfil critical criteria, and Fee proposal
 - ii. Balloting shall be performed on firms which had expressed interest and fulfilled the critical criteria (e.g. correct PSPC panel)
- b) 2-stage QFM. The EOI Stage involves selection of five eligible firms based on government ' stipulated Quality criteria.
 - i. Quality proposals can be requested and evaluated at the EOI Stage. However, Fee proposals and Concept Design Proposals (if any) shall be requested only at tender stage
 - ii. Scoring criteria are to be stated upfront clearly in the EOI document

B) Tender Stage

2.6. Submission by tenderers. Each shortlisted single-disciplinary firm or MDT shall submit a Quality proposal and Fee proposal in two separate envelopes.

2.7. Eligibility at Tender. Only shortlisted firms/MDTs are eligible to participate in tender.

2.8. Tender Evaluation.

2.8.1. GPEs shall open the Quality proposals, of all complying submissions, to compute and finalise the Quality scores, followed by the Productivity scores. Quality proposals are to be opened and the Quality scores be computed and finalised, followed by the Productivity scores. Subsequently, the Fee proposals would be opened and Fee scores computed and finalised.

2.8.2. The QFM score shall be the sum of Quality, Productivity and Fee scores. The detailed guide on the QFM scoring methodology can be found in Section 3.

C) Tender Award

2.9. Award to highest QFM scorer. The firm or MDT with the highest QFM score shall be awarded the project. Agencies reserved the right not to award to the highest QFM scorer if it is a low outlier bid.

2.10. Feedback on tenderers' tender performance. After tender has been awarded, unsuccessful tenderers can submit a written request to the agencies to find out about their individual tender performance. This includes sharing with the tenderer their own strengths and weaknesses, and performance in specific scoring attributes.

D) Post Tender Award

2.11. Consultants' Performance Appraisal System (CPAS). Upon tender award, a Project Registration Report would be submitted by the agencies for subsequent consultants performance appraisals.

2.12. Bi-annual performance assessment³. Consultants' performances under CPAS are assessed by agencies on a six-monthly basis.

³ More information on CPAS can be obtained at www.bca.gov.sg/pspc under "About CPAS" QFM (updated 17 November 2020)

3. QFM Scoring Methodology

GENERAL

3.1. The QFM score shall be derived from the summation of Quality, Productivity and Fee scores. Please refer to Annex A for working examples.

$$\text{QFM score} = \text{Quality score (Q-score)} + \text{Productivity score (PD-score)} + \text{Fee score (F-score)}$$

QUALITY SCORE

3.2. The Quality score shall be derived from the summation of Consultants' Performance score and Quality sub-score that comprises of other quality attributes:

$$\text{Quality score (Q-score)} = \text{Consultants' Performance score (CP-score)} + \text{Other Quality score (Q sub-score)}$$

3.2.1. Consultants' Performance score (CP-score).

- a) The CP-score shall be based on the overall consultants' performance scores derived from Consultants' Performance Appraisal System (CPAS) i.e. CPAS-score and/or agencies' in-house consultants' performance score. The tenderer with the highest performance score among the tenderers shall be awarded the full points and those without a score shall be given the average points across all conforming tenderers.
- b) The CP-score shall have a minimum weightage of 10% out of the total QFM weightage.

$$\text{Consultants' Performance score (CP-score)} = \frac{\text{Tenderer's Performance score}}{\text{Highest CPAS score among all tenderers}} \times \text{Min. 10\% of total QFM weightage}$$

3.2.2. Other Quality score (Q sub-score). The Q sub-score is generally derived from the assessment of the other quality attributes which can include the following:

- a) Written Proposal. It is a written outline of the firm's approach and understanding of agencies' project requirements and constraints, but does not include any form of drawings or presentation (e.g. sketches or visuals with design solutions)

- i. The written proposal shall be limited to two A4 sheets to minimise wastage of tendering efforts and resources by firms
- b) Concept Design Proposal (for 2-stage QFM tenders only). Within the Quality component, the evaluation criterion on Concept Design Proposal is usually given significant Quality points.
- c) Other quality attributes. Other quality attributes could include but not limited to the following:
 - i. Firm’s track records
 - ii. Relevant expertise and experience of the proposed project team
 - iii. Awards attained by firm

3.3. The tenderer with the highest total raw points shall be given maximum Quality sub-score. The Quality sub-score for the other tenderers shall be calculated proportionally to the highest total Quality points.

$$\text{Other Quality score (Q sub-score) = } \frac{\text{Tenderer's raw quality points}}{\text{Highest raw quality points among all tenderers}} \times \text{Quality weightage}$$

PRODUCTIVITY SCORE

3.4. The Productivity score shall be derived from the points for each of the Productivity attributes and shall constitute 20% of the overall QFM weightage:

- a) Buildable-Design Score (BS) Index⁴ (min 8%)
- b) Technology Adoption (Design) (TA(D)) Index (2%)
- c) Workforce Development (Design) (WD(D)) Index (2%)
- d) (Optional) Other productivity attributes specified by agencies (up to 8%)

$$\text{Productivity Score (PD-score) = } \text{Scores from [BS Index + TA(D) Index + WD(D) Index + Other Productivity Attributes]}$$

The indices for items a) to c) are published on the BCA website and updated quarterly.

3.4.1. Score from BS Index. Score shall be pegged to the tenderer that has the highest BS Index among all tenderers

$$\text{Score from BS Index = } \frac{\text{Tenderer's BS Index}}{\text{Highest BS Index among all tenderers}} \times \text{Weightage}$$

⁴⁴ The BS Index is applicable to Architectural and Civil & Engineering disciplines only. QFM (updated 17 November 2020)

- a) The tenderer with the highest BS Index shall obtain full points
- b) Tenderers with no BS Index shall be given the average points across all conforming tenderers
- c) For cases where less than two (i.e. only one or none) of the tenderers have BS Index, the BS Index attribute will be discarded

3.4.2. Score from TA(D) Index (2%). Score shall be pegged to the tenderer that has the highest TA(D) Index among all tenderers

$$\text{Score from TA(D) Index} = \frac{\text{Tenderer's TA(D) Index}}{\text{Highest TA(D) Index among all tenderers}} \times \text{Weightage (2\%)}$$

- a) The tenderer with the highest TA(D) Index shall obtain full points
- b) Tenderers with no TA(D) Index shall score zero point

3.4.3. Score from WD(D) Index (2%). Score shall be pegged to the tenderer that has the highest WD(D) Index among all tenderers

$$\text{Score from WD(D) Index} = \frac{\text{Tenderer's WD(D) Index}}{\text{Highest WD(D) Index among all tenderers}} \times \text{Weightage (2\%)}$$

- a) The tenderer with the highest WD(D) Index shall obtain full points
- b) Tenderers with no WD(D) Index shall score zero point

3.4.4. Other Productivity attributes specified by agencies (optional).

- a) Agencies can specify the attributes and scoring method that are relevant to assess the impact of the tenderers' proposal on project productivity. For example, agencies could evaluate the design proposal of the tenderers in terms of their potential productivity gains.
- b) For projects/disciplines where minimum Buildable Design Score requirements are applicable, up to 8% could be assigned to project-specific productivity attributes. The total of BS Index and other productivity attributes specified by agencies shall make up a total of 16%.
- c) For projects/disciplines that are not subject to minimum Buildable Design Score requirements, the BS Index attribute shall not be applicable. For such cases:
 - i. Up to 16% could be assigned to project-specific productivity attributes (i.e. total QFM score will be between 85 to 100 points); or
 - ii. The full 16% could be discarded. Score will be based only on the remaining Productivity attributes (i.e. the productivity score weightage shall only be 4%, with the total QFM score at 84 points).

FEE SCORE

3.5. Tenderers shall quote for Fee proposals as specified in the tender documents, which could be one of the following.

- a) By Percentage of final construction cost (%), or
- b) By Lump Sum (\$)

3.6. Measures to reduce fee diving. To discourage firms from quoting excessively low fees, the formula in 3.7.2b) shall be employed for the calculation of Fee score where there are fees which are more than 20% below of the average quoted (“perceived fee-diving”). Tenderers with fees which are more than 20% below the average shall be awarded no further advantage than the score awarded to the fee at 20% below the average ($F_{average}$).

3.7. Fee score computation.

3.7.1. Calculation of average Fee ($F_{average}$). To prevent skewing of the average fee, outlier bids shall be excluded from the calculation of the average fee. Outlier bids are defined as bids that are more than 20% below (low outlier) or 50% above (high outlier) the average fee of all conforming bids. The steps to discard outlier bids in the calculation of $F_{average}$ are as below:

- a) Exclude the outlier bid sequentially by first excluding any high outlier and computing the new average. After which, based on the new average, exclude any low outlier and compute the $F_{average}$.
- b) Check that less than half of the qualified bids are outlier bids. Otherwise, agencies shall disregard para 3.7.1 a) and consider all qualified bids in the calculation of $F_{average}$.

3.7.2. Apply Fee-score formula. The two fee formula to be adopted are as below:

- a) Scenario A – Where the lowest fee quoted is higher than or equal to $0.8F_{average}$

$$\text{Fee score (F-score)} = \frac{\text{Lowest Proposed Fee}}{\text{Tenderer's Proposed Fee}} \times \text{Weightage}$$

- b) Scenario B – Where there is perceived fee-diving i.e. the lowest fee quoted is lower than $0.8F_{average}$

$$\text{Fee score (F-score)} = \frac{0.8F_{average}}{\text{Tenderer's Proposed Fee}} \times \text{Weightage}$$

$$\text{where, } F_{average} = \frac{\sum \text{Proposed Fees of all Conforming Bids}}{\text{No. of Conforming Bids}}$$

Any fee quoted lower than $0.8F_{average}$ will get the maximum F-score.

EVALUATING COLLABORATIVE BIDDING

3.8. The table below indicates the evaluation methodology for the various attributes when evaluating collaborative bids by firms i.e. a consortium of two or more PSPC firms which wish to tender for higher value projects under Collaborative Bidding.

QFM Components	QFM Attributes	Evaluation Methodology
Productivity (PD)	TA(D) Index	Take highest score amongst the firms within the consortium
	WD(D) Index	
	BS Index	
Quality (Q)	Past performance i.e. CPAS scores	Assessed as one consortium
	Firm's Track Record	
	Awards/Certifications	
	Expertise and experience of personnel	
	Design Proposal/Approach	
Fee (F)	Fee Proposal	

Annex A – Frequently Asked Questions

Q1. Can a firm not listed on the PSPC express interest for the projects?

A1. Firms are encouraged to be listed on PSPC on the relevant panels. Failure to do so by EOI closing, or as otherwise stated, would render firms to be ineligible for shortlisting.

Q2. Where can I view my CPAS-scores?

A2. Consultants' CPAS scores can be obtained via PSPC login accounts.

Q3. Are BS Index, TA(D) and WD(D) indices attributes applicable to all disciplines and projects?

A2. While TA(D) and WD(D) indices are applicable to all disciplines and projects, the BS Index attribute is applicable to the Architectural and Civil & Structural Engineering discipline for building developments that are subject to minimum Buildable Design Score requirements. For more details on the types of development that are subject to the Code of Practice on Buildability, please go to <https://www1.bca.gov.sg/about-us/news-and-publications/publications/codes-acts-and-regulations>

Annex B – Illustration of QFM Scoring Methodology

Example 1a - Scoring of Single-discipline (Architectural) QFM tender

QFM Configuration: Quality (Q) : Productivity (PD) : Fee (F) = 60 : 20 : 20, with consultants' performance weightage at 10% of overall QFM weightage

Fee proposal: Proportion of final construction cost (%)

Scenario:

- Tenderer E with no BS Index
- Tenderer A with no TA(D) Index and WD(D) Index – *awarded zero for both attributes*
- Tenderer D with no TA(D) Index – *awarded zero for TA(D) Index attribute*
- There are 5 conforming bids and less than half are outlier bids

		Tenderer A	Tenderer B	Tenderer C	Tenderer D	Tenderer E
Quality	CPAS score (upon 100)	55.20	64.00	75.10	45.0	67.80
	CP-score (10%)	7.35	8.52	10.00	6.00	9.03
	Q _{raw} (upon 100)	75.50	82.40	90.00	65.00	77.80
	Q _{sub-score} (50%)	41.94	45.78	50.00	36.11	43.22
	Q-score (60%)	49.29	54.30	60.00	42.11	52.25
Productivity	Score for BS Index (16pts)	16.00	15.02	15.10	14.56	15.17*
	Score for TA(D) Index (2pts)	0	2.00	1.50	0	1.74
	Score for WD(D) Index (2pts)	0	2.00	2.00	1.50	1.28
	PD-score (20%)	16.00	19.02	18.60	16.06	18.19
Fee	F (%)	2.12	2.69	1.44	2.97	2.50
	Average of all qualified bids	2.34				
	Check high outlier bids	-	-	-	-	-
	Check low outlier bids	-	-	outlier	-	-
	F _{average}	5 qualified bids and less than half are outlier bids. Hence, to <u>exclude</u> outlier in F _{average} computation $F_{average} = (2.12 + 2.69 + 2.97 + 2.50) / 4 = 2.57$ $0.8F_{average} = 0.8 * 2.57 = 2.056$				
	F-score (20%) Use fee formula 2	19.40	15.29	20.00	13.85	16.45
Total QFM score (Q-score + PD-score + F-score) (100%)	84.69	88.61	98.60	72.02	86.89	
Overall ranking	4	2	1[^]	5	3	

* Average of all scores (for BS Index) is awarded to Tenderer E, which had no BS Index

^ Awarded to Tenderer C on justification that tenderer is the highest Q-scorer, have shown good understanding of the project requirements and have consistent good performance in CPAS

Example 1bUsing the same example in 1a, except that at least half of the qualified bids are outlier bids

		Tenderer A	Tenderer B	Tenderer C	Tenderer D	Tenderer E	
Fee	F (%)	1.30	2.69	1.44	2.97	4.50	
	Average of all qualified bids		2.58				
	Check high outlier bids		-	-	-	-	outlier
	Average of remaining qualified bids		$(1.30 + 2.69 + 1.44 + 2.97) / 4 = 2.10$				
	Check low outlier bids		outlier	-	outlier	-	-
	F_{average}		5 qualified bids and at least half are outlier bids. Hence, to <u>include</u> all qualified bids in F_{average} computation $F_{\text{average}} = 2.58$ $0.8F_{\text{average}} = 0.8 \times 2.58 = 2.064$				
	F-score Use fee formula 2	(20pts)	20.00	15.35	20.00	13.90	9.17

Example 1cUsing the same example in 1a, except that there are no low outlier bids

		Tenderer A	Tenderer B	Tenderer C	Tenderer D	Tenderer E	
Fee	F (%)	2.20	2.69	2.60	2.75	4.50	
	Average of all qualified bids		2.95				
	Check high outlier bids		-	-	-	-	outlier
	Average of remaining qualified bids		$(2.20 + 2.69 + 2.60 + 2.75) / 4 = 2.56$				
	Check low outlier bids		-	-	-	-	-
	F_{average}		5 qualified bids and less than than half are outlier bids. Fee formula 1 shall apply since lowest quoted fee is higher than or equal to $0.8F_{\text{average}}$.				
	F-score Use fee formula 1	(20pts)	20.00	16.36	16.92	16.00	9.78

Example 2 – Scoring of Multi-Discipline QFM tender

QFM Configuration: Quality (Q) : Productivity (PD) : Fee (F) = 60 : 20 : 20, with consultants' performance weightage at 10% of overall QFM weightage

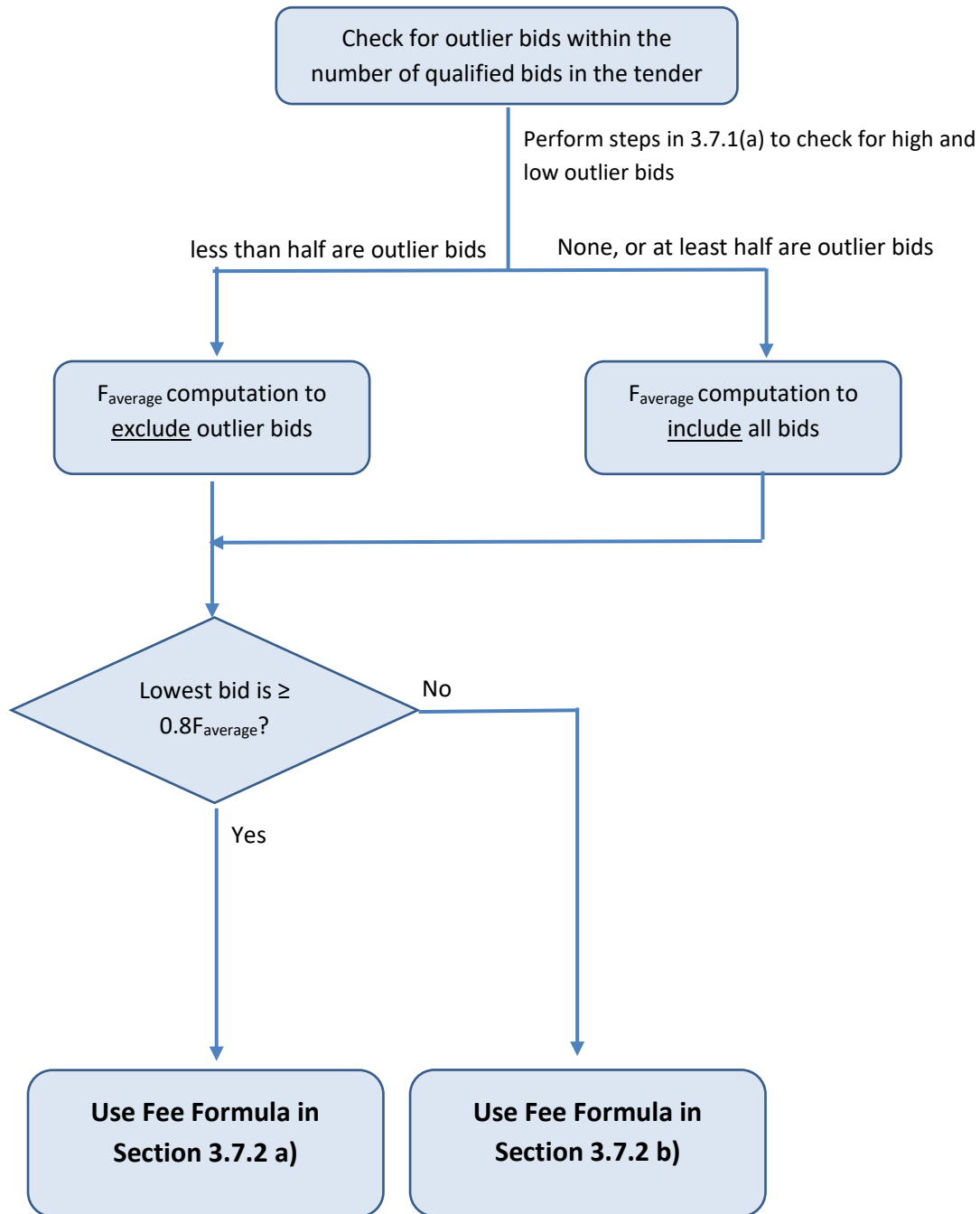
Discipline: Architectural, C&S and M&E Engineering and Quantity Surveying (MDT)

Note:

- The QFM scoring methodology for an MDT primarily follows that of a Single-Disciplinary tender as shown in example 1a where the evaluation is done on each discipline
- The QFM score for the MDT shall be derived by factoring the respective weightage^[1] of each discipline within the MDT, as illustrated in example below

MDT members			AR	CS	ME	QS
Weightage across each discipline within the MDT ^[1]			40%	30%	20%	10%
Quality	CP-score	(min 10%)	10%	10%	10%	10%
	Q _{sub-score} ^[2]	(50%)	50%	50%	50%	50%
	Total Q-score weightage		60%	60%	60%	60%
Productivity	Score for BS Index		10%	10%	0%	0%
	Score for TA(D) Index		2%	2%	2%	2%
	Score for WD(D) Index		2%	2%	2%	2%
	Other Productivity attributes		6%	6%	6%	6%
	Total PD-score weightage		20%	20%	10%	10%
Fee	Total F-score weightage		20%			
Total QFM Weightage (per discipline)			100%	100%	90%	90%
Normalised QFM score (per discipline)			QFM_{AR} =score/100*100	QFM_{AR} =score/100*100	QFM_{AR} =score/90*100	QFM_{AR} =score/90*100
Total QFM score (MDT)			40%*QFM_{AR} + 30%*QFM_{CS} + 20%*QFM_{ME} + 10%*QFM_{QS}			

Example 3 – Selecting the Fee-score formula



Example 4 – Derivation of Scores for firms under Collaborative Bidding

Firm A and Firm B, both registered in PSPC Architectural Panel 3, jointly submitted a bid i.e. Tenderer 1, to tender for a project opened to Panel 1 and 2 firms under the Collaborative Bidding

QFM Components	QFM Attributes	Evaluation Methodology
Productivity (PD)	TA(D) Index	Take highest score amongst the firms within the consortium
	WD(D) Index	
	BS Index	
Quality (Q)	Past performance i.e. CPAS scores	
	Firm's Track Record	
	Awards/Certifications	
	Expertise and experience of personnel	Assessed as one consortium
Design Proposal/Approach		
Fee (F)	Fee Proposal	

For a consortium (i.e. Tenderer 1) formed by Firm A and Firm B within the same discipline:

		QFM Weightage	Tenderer 1		
			Firm A	Firm B	Score to be used
Quality (Q)	i) CP-Score (CPAS) (10) (by discipline)		10	8	10
	ii) Track Record (10)		6	8	8
	iii) Awards/Certification (5)		5	4	5
	iv) Written Proposal (30)		28		28
	v) Expertise and experience of personnel (5)		5		5
	Total Q-Score (by discipline)	60			56
Productivity (PD)	i) BS-Score (16)		13	15	15
	ii) TA(D)-Score (2)		1.5	1	1.5
	iii) WD(D)-Score (2)		1	1.5	1.5
	iv) Other Productivity Attributes(N.A.)		N.A.	N.A.	N.A.
	Total PD-Score (by discipline)	20			18
Fee (F)	Total F-Score (by discipline)	20	15		15
Total QFM score (by discipline)		100			89



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QUALITY FEE METHOD FRAMEWORK
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