Price Quality Method

Enhancements

(Effective for tenders called on and after 31 Jan 2018)
Need for Review

More emphasis and differentiation in Quality

To place greater emphasis on quality for construction tenders.

Enhance long term sustainability of contractors and curb excessive price competition.

Recognise firms providing good performance.
Tender evaluation framework for all public sector construction tenders under BCA construction workheads CW01 & CW02 with the estimated procurement value of $3M and above.

CW01 – General Building
CW02 – Civil Engineering

Total PQM Score = Price-Score + Productivity-Score + Quality-Score
Key Enhancements to PQM

1. **Q-weightage (buildings)**
   - **↑ 10%**

2. **Mandatory Attribute for Past Performance**
   - Effective for tenders called on and after 31 Jan 2018

3. **Flexibility in Setting Productivity Evaluation Criteria**

4. **Greater Transparency on Performance**
1) Greater emphasis on non-price components

To place greater emphasis on quality during tender evaluation

- **10% increase of weightage** in Quality components for **building** projects
- Agencies have the flexibility to choose from a range of **P:PD:Q weightage for different procurement models** i.e. Design Bid Build (DBB), Design & Build (D&B) and ECI models

Weightages for building projects (CW01)

- **Price (P)**: 70% - 50% → 60% - 40%
- **Productivity (PD)**: 10%
- **Quality (Q)**: 20% - 40% → 30% - 50%
2) Introduce past performance as a mandatory criterion

To recognise contractors with good performance for past projects

Mandatory minimum 15% of Quality weightage

- Performance in past projects

Contractors are encouraged to have good performance for their projects.
2) Introduce past performance as a mandatory criterion

To recognise contractors with good performance for past projects

- All CRS contractors are able to view their own past performance reports via eBACS with effect from Jun 2017

Steps to view performance track record
1. Log into eBACS account
2. Click on the company information
3. Click on the view company track record
4. Click on the project title
5. Track record performance for that project will be shown
2) Introduce past performance as a mandatory criterion

To recognise contractors with good performance for past projects

<table>
<thead>
<tr>
<th>Area of Evaluation (All workheads)</th>
<th>Grade</th>
</tr>
</thead>
<tbody>
<tr>
<td>Quality Performance</td>
<td>Excellent</td>
</tr>
<tr>
<td>Site Planning &amp; Control</td>
<td>Excellent</td>
</tr>
<tr>
<td>Progress of Works</td>
<td>Very Good</td>
</tr>
<tr>
<td>Housekeeping</td>
<td>Very Good</td>
</tr>
<tr>
<td>Response to Instructions</td>
<td>Excellent</td>
</tr>
</tbody>
</table>

- All CRS contractors are able to view their own past performance reports via eBACS with effect from Jun 2017.

Contractors are encouraged to focus on improving their project performance.
3) Flexibility to specify productivity criteria

To recognise firms’ efforts in raising productivity

Agencies could specify for other productivity attributes under Productivity component. Tenderers are encouraged to come up with more productive proposal.
4) Greater Transparency in Tender Performance

To help firms to improve for future tenders

Request in writing to agencies to seek feedback on areas of improvement

Tenderers are encouraged to take feedback positively
Contact Us

For any clarification you may email to:
• PQM: bca_ppd@bca.gov.sg
• eBACS: bca_ebacs@bca.gov.sg

The revised PQM framework is available at https://www.bca.gov.sg/PQM/pqm.html
Thank You
Early Contractor Involvement

Key Features & Benefits
Outline of Presentation

- Early Contractor Involvement (ECI) – Why & What
- Key Features of ECI models identified by BCA
- Stakeholders’ involvement in the ECI process
Construction ITM

VISION

- Advanced and Integrated Sector
- Progressive and Collaborative Firms
- Good Jobs for Singaporeans

Through 6 key pillars

1. Innovation
2. Productivity
3. Jobs and Skills
4. Internationalisation
5. Collaboration
6. Regulations
Gap between Design & Construction
What is Early Contractor Involvement (ECI)?

- A procurement approach whereby Contractors are engaged early during the design stage, so that the knowledge of the Contractor is used to facilitate integration of design and construction process.
Benefits of ECI

• Allow Contractors’ inputs into design to make good use of their knowledge, experience and creativity

• Promote greater coordination between stakeholders

• Cost and/or time savings
Adoption of ECI

- **All public agencies are required to consider ECI upfront if possible**

- **Public agencies that adopted ECI** in their projects include JTC, MOH, HDB, DSTA, LTA, MOE, NEA and PA

- **ECI models adopted** include Design & Build (D&B), Design Development & Build (DDB) and Design Bid Build with Early Contractor Involvement (DBB-ECI)

- More to come...
ECI Initiatives

Building Capabilities
- ECI Guide
  - Details of ECI models
  - ECI guide to be published

Outreach
- ECI Seminars

Building Demand
- Productivity Gateway Framework (PGF)
Productivity Gateway Framework (PGF)

Master Productivity Plan (MPP)

Productive Technology Adoption

BIM Collaboration & Integration Approach

Productive Procurement & Management Practices

Standardisation

Reviewed & endorsed by PGAP

MPP as blueprint

Project 1
Project Productivity Plan (P3)

Project 2
Project Productivity Plan (P3)

Project N
Project Productivity Plan (P3)

ECI
• 3 different models of ECI which varies according to:
  o Stage at which the Contractors start to get involved in project
  o Level of involvement in the design
• Depends on type of projects, client needs etc

- Design & Build (D&B)
- Design Development & Build (DDB)
- Design Bid Build with Early Contractor Involvement (DBB-ECI)
1. Design and Build (D&B)

- Functions of design and construction are placed entirely with the Contractor
- Contractor *engages consultants to develop full design proposal and submit tender*

**Pre-qualification Stage**
- Shortlist to maximum 5 contractors!

**Tender Stage** (> 6 months)
- Evaluate based on Price-Quality Method (PQM)
- Contractors
- Consultants
- Full Design
- Contractor
- Construction

**Award**

---

We shape a *safe, high quality, sustainable and friendly* built environment.
2. Design Development and Build (DDB)

- **Contractor engages consultants to develop full design proposal**, based on architectural concept design and submit tender

Client

Consultants

Architectural Concept Design

Contractors

Consultants

Full Design

Contractor

Construction

Pre-Qualification Stage

Tender Stage (> 6 months)

Award

Maximum 5 tenderers!

Shortlist to maximum 5

Evaluate based on Price-Quality Method (PQM)
ECI Experience of Public Agency A

• Concept design provided - Tap on Contractor’s knowledge to explore more efficient and productive construction methodology

• Alternative proposals
  - Structural system – semi precast to full precast
  - Architectural layout – introduce external staircases reduce corridor
  - M&E provisions – lower equipment capacity same efficiency

• Savings: Time - 10% / Costs - 3%
3. Design Bid Build – Early Contractor Involvement (DBB – ECI)

- Contractor develop alternative design solution(s) that are time/cost savings and submit base tender bid and alternative tender bid for accepted solution(s)

Pre-Qualification Stage

Tender Stage

Award

- Client
- Consultants
- Contractors
- Full Design
- Evaluation based on Price-Quality Method (PQM)
1-1 Discussions

**Enquiry from Contractors**

**Issue Tender Documents**

**Tender Invitation**

**Response to Enquiry**

**1st 1-1 Discussion**

**Consolidate alternative design solutions for Client, justify any rejection, obtain Client’s endorsement to disseminate comments**

**2nd 1-1 Discussion**

**Employer’s Consultants**

**Contractors**

**Submit base and alternative tender bid**

**1st Submission of Alternative Design Solution(s)**

**1st 1-1 Discussion**

**Respond to Consultants’ comments via email; Further Submission of Alternative Design Solution(s)**

**2nd 1-1 Discussion**
Contractor will be evaluated based on

- Level of participation in ECI exercise e.g. valued ideas, responsiveness and promptness for 1-1 discussions

- Innovativeness of alternative design solution(s) - impact on productivity, quality and safety e.g. new construction methods
1-1 Discussions

• Clarifications on Contractor’s submitted alternative design solution

• Consultants highlight areas for Contractor’s consideration

• Area of discussion is limited to design solution only. No costing to be discussed

• Requires signing of a Confidentiality Agreement between consultants and individual tenderers to ensure that sensitive information shared is kept confidential and not shared with other tenderers
ECI Experience of BCAA Phase 1 Redevelopment Project

• Alternative design solutions by Contractors to structural system and M&E provisions

• Savings: Time – 4.5% / Costs – 2.7%
3. DBB-ECI – Case Study 2

**Pre-cast staging beams and planks for Lecture Theatres**

**Benefits**
- Improving productivity by removing cast in situ concreting slabs
- Reduce site-work and labour

**High Strength concrete for columns**

**Benefits**
- Reduce reinforcement up to 25% at certain sections

**Light weight ductwork**

**Provides excellent insulation, high rigidity, lightness, extremely easy to handle**

**Benefits**
- Installation is much faster than conventional system
- Save labour cost and time

Extracted from BCAA ECI briefing slides
ECI Experience of Public Agency B

• Alternative design solutions by Contractors to structural system, architectural layout and M&E provisions

• Savings: Time - 7% / Costs – 2.5%
### 3. DBB-ECI – Case Study 3

<table>
<thead>
<tr>
<th>Change of full top down construction to semi top down construction</th>
<th>Change from bored pile foundation to raft foundation with tension piles</th>
</tr>
</thead>
<tbody>
<tr>
<td>→ Reduce in plunge of columns</td>
<td>→ Reduce in costs</td>
</tr>
</tbody>
</table>

**ALTERNATIVE SOLUTIONS (arising from ECI)**

<table>
<thead>
<tr>
<th>Raise ejector tank pumps and grease separator from below B3/B3 to B3 and B1</th>
<th>Replace 25-75mm screed with screed-less floor for some areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>→ Avoid deep excavation</td>
<td>→ Reduce in time and costs</td>
</tr>
</tbody>
</table>
## Summary on Types of ECI

<table>
<thead>
<tr>
<th>Tender Stage Design Status</th>
<th>Contractors’ Design Involvement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>D&amp;B</strong></td>
<td>Full Design from Design Brief</td>
</tr>
<tr>
<td>Design Brief</td>
<td></td>
</tr>
<tr>
<td><strong>DDB</strong></td>
<td>Full Design from Concept Design</td>
</tr>
<tr>
<td>Architectural Concept Design</td>
<td></td>
</tr>
<tr>
<td><strong>DBB-ECI</strong></td>
<td>Alternative Design from Full Design</td>
</tr>
<tr>
<td>Full Design</td>
<td></td>
</tr>
</tbody>
</table>
Contributions by Contractors

- Tap on contractor’s expertise
- Better / alternative design solutions for higher constructability / productivity
- Better project control / productivity
- Cost / Time savings
Areas under Review

• Compensation framework for unsuccessful tenderers

• Number of pre-qualified tenderers for ECI exercise
Collaborative Contracting...
Collaborative Contracting

• **Adopted overseas in various public and private sector projects**
  - New Engineering Contract (NEC) in the United Kingdom (UK), Hong Kong, New Zealand and South Africa
  - AIA Standard Document for Integrated Project Delivery (IPD) in the United States (US)
  - Alliance Contract in Australia

• **Traditional form of contracts are more adversarial in nature**
NEC Adoption in Hong Kong

Benefits of Collaborative Contracting

• Project parties work together in spirit of mutual trust towards common goal

• Encourage better cost/risk management; disputes avoided/resolved early

Happy Valley Underground Storage Stormwater Scheme Project in HK

• Cost savings of 5% (~$10mil) and time savings of 12 months

• HK has been active in piloting and adopting NEC since 2009
Seminar/Workshop on Collaborative Contracting

• The **Working Committee on Collaborative Contracting (WCCC)** comprising government agencies and industry associations/practitioners was set up in Sep 2017 to study the collaborative contracting forms used overseas for adoption in Singapore

• **Seminar/workshop** to be organized to raise awareness on collaborative contracting

  ➢ Coming soon ...
Thank You!