

[PPS-ADB] e-Procurement Training

Contracts for Public Construction Works

PPS Construction Guide for Securing Quality and Safety in Public Construction



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Construction
Works Bureau

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Public Procurement Service



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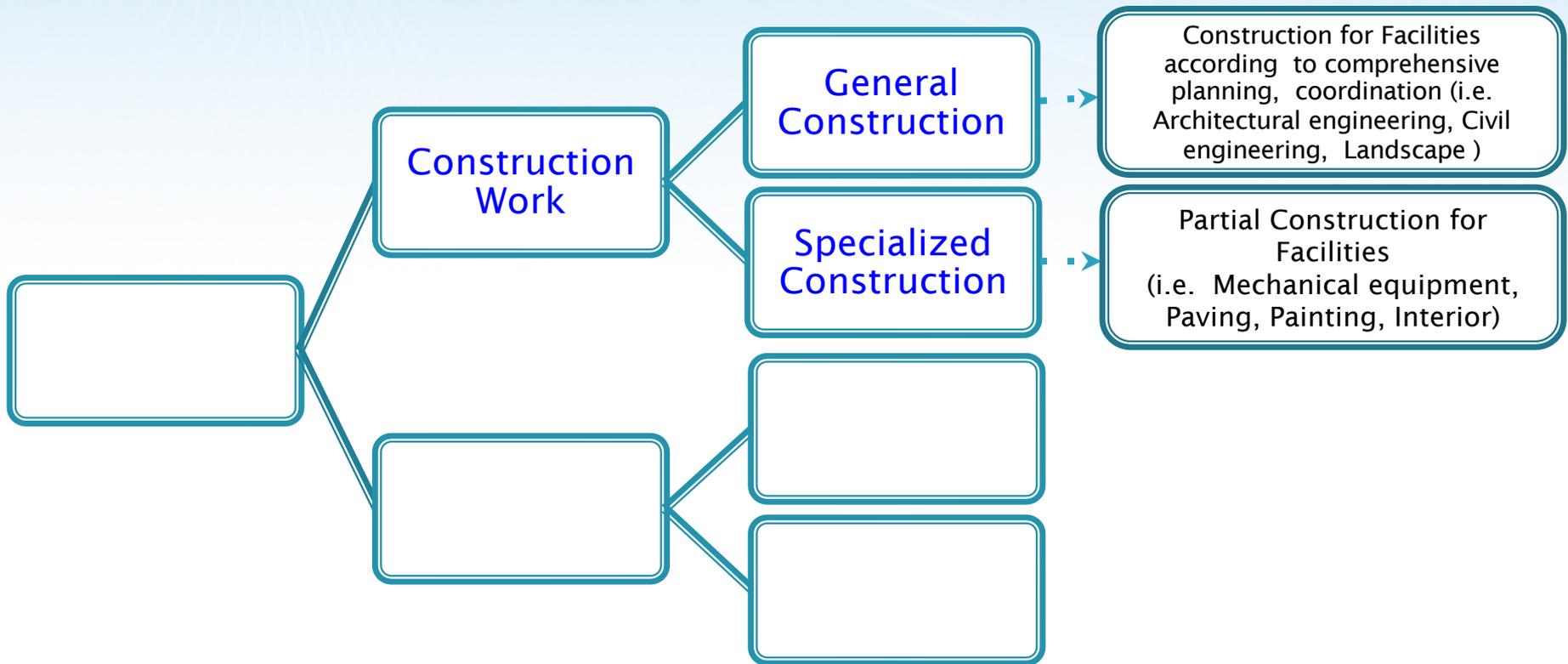
3. Customized Service

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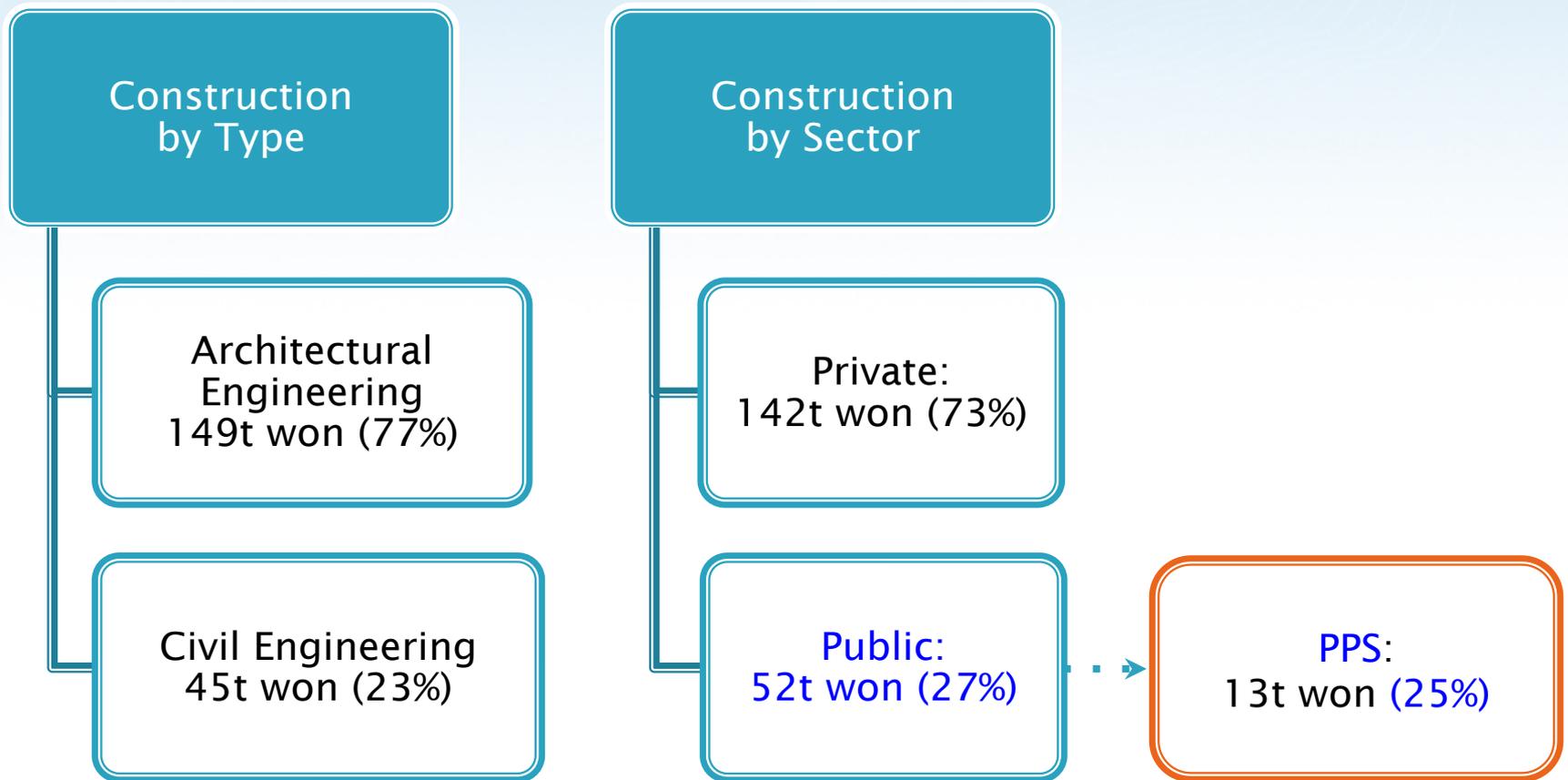
1. Status of Public Construction Market

Structure of Korean Construction Industry



1. Status of Public Construction Market

2020 Construction Volume :
194 Trillion won (₩ won : Korean Currency)



2. Flow of Construction Contract Work

1. Planning

·Business Plan Set-up ·Pre-Feasibility Study ·Impact Analysis (Environment & Traffic) ·Securing Budget & Site ·Approval



2. Design

·Planning Design ·Interim Design ·Working Design



3. Contracting

·Bid Notice ·Pre-Qualification ·Site Presentation ·Performance Ability Evaluation ·Successful Bidder ·Signing Contract



4. Construction

·Schedule, Quality, Cost, Safety Management ·Completion Inspection ·Test Operation ·Payment



5. Maintenance

·Repair ·Reinforcement ·Regular Safety Check

2-1. Planning Tasks

1. Basic Concept

Basic Layout Development for Construction Work



2. Pre-Feasibility Study

Determining whether to Promote the Business based on Economic and Political Analysis



3. Feasibility Study

The Specific Basic Information for Actual Business Initiation focusing on Technology Analysis



4. Basic Plan Development

Appropriate Construction Methods Determination through Review of the Conditions, Use, Scale of the Project



5. Design Work

2-2. Review of Design

Assessment of Design Appropriateness

Target Projects

- The projects taken over 2 years and more than 20 billion won
- They have to take the appropriateness assessment (1~3 times) before the completion of working design

Review Contents

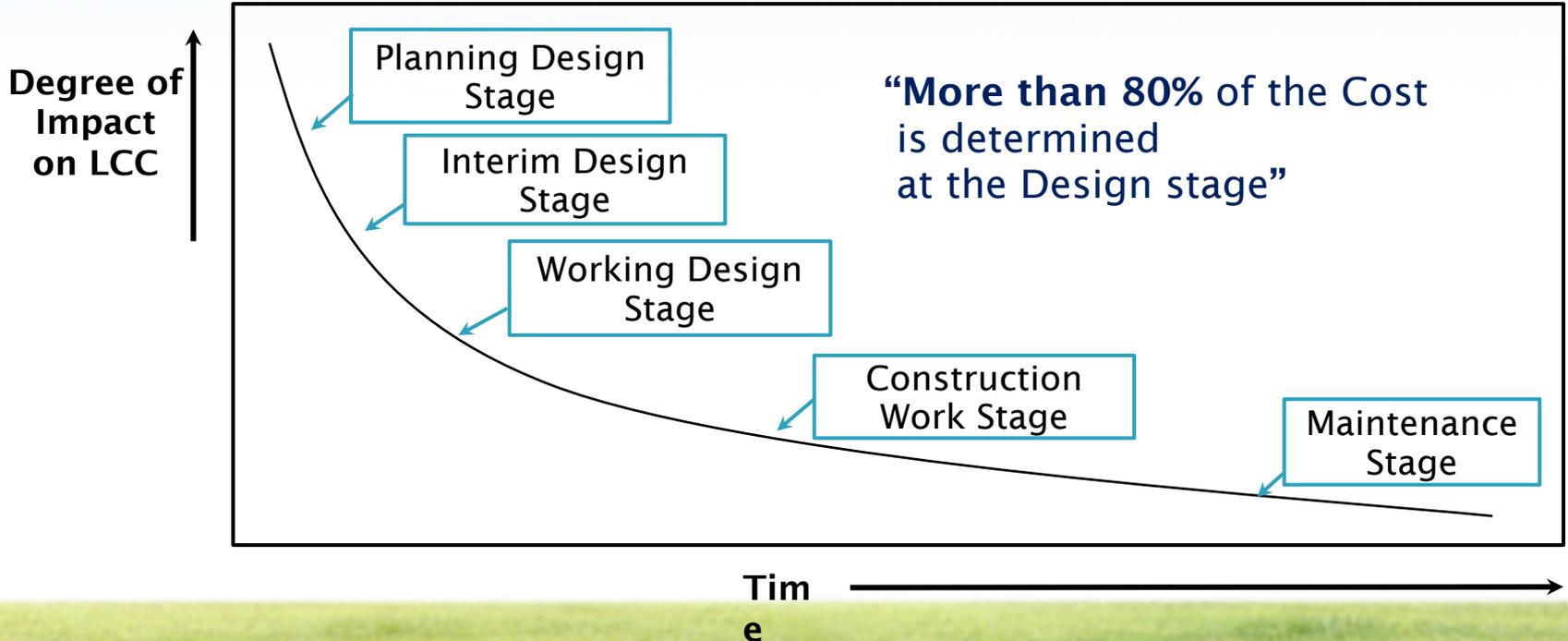
- Review of Conformity with Initial Business Plan
- Review of Appropriateness of the Design Documents
 - Scale, Layout, Floor Plan, Elevation, Section
 - Excessive or Redundant Design, Interior & Exterior Materials
 - Structure Method, Mechanical System, Equipment Selection
 - Structural Statement, Load Estimation

2-2. Review of Design

Assessment of Design Appropriateness

Necessity

- In the Earlier Stage of Design, the improvement effect is great compared to the input cost **according to LCC (*Life Cycle Cost) analysis**



2-2. Review of Design

Assessment of Design Appropriateness

Effects

- Prevention of Faulty Construction
- Prevention of Cost Rise because of design change
- Increasing Functionality and Usability of public buildings
- Providing Safe Open Place to the Public

< Performance of Design Appropriateness Work ('19.1. ~ '21.10.) >

(Cost Unit : 1 billion won)

Stage/Items	Faulty Design		Exaggerated Design		Quality Improvement		Total	
	No.	Cost	No.	Cost	No.	Cost	No.	Cost
Planning Design	1,952	1.6	1,952	8.4	1,952	35.8	5,856	45.9
Interim Design	10,839	93.0	10,839	82.7	10,839	128.6	32,517	304.2
Working Design	24,465	97.5	24,465	105.2	24,465	134.0	73,395	336.7
Total	37,256	192.1	37,256	196.3	37,256	298.4	111,768	686.8

※ 686 billion won = 600 million US dollars

2-2. Review of Design

Prior Review of Construction Cost

Target Projects

- Construction Business directly ordered by Local Governments, worth more than 10 billion won

Review Contents

- Materials, Equipment, Labor cost
- Government Standard Estimate and Standard Market Price
- Budget Appropriateness
- Consistency between the Quantity Calculation and the Detailed Statement

2-2. Review of Design

Prior Review of Construction Cost

Expected Effects

- Save on over-set construction costs
- Prevent faulty construction in advance by paying reasonable expenses

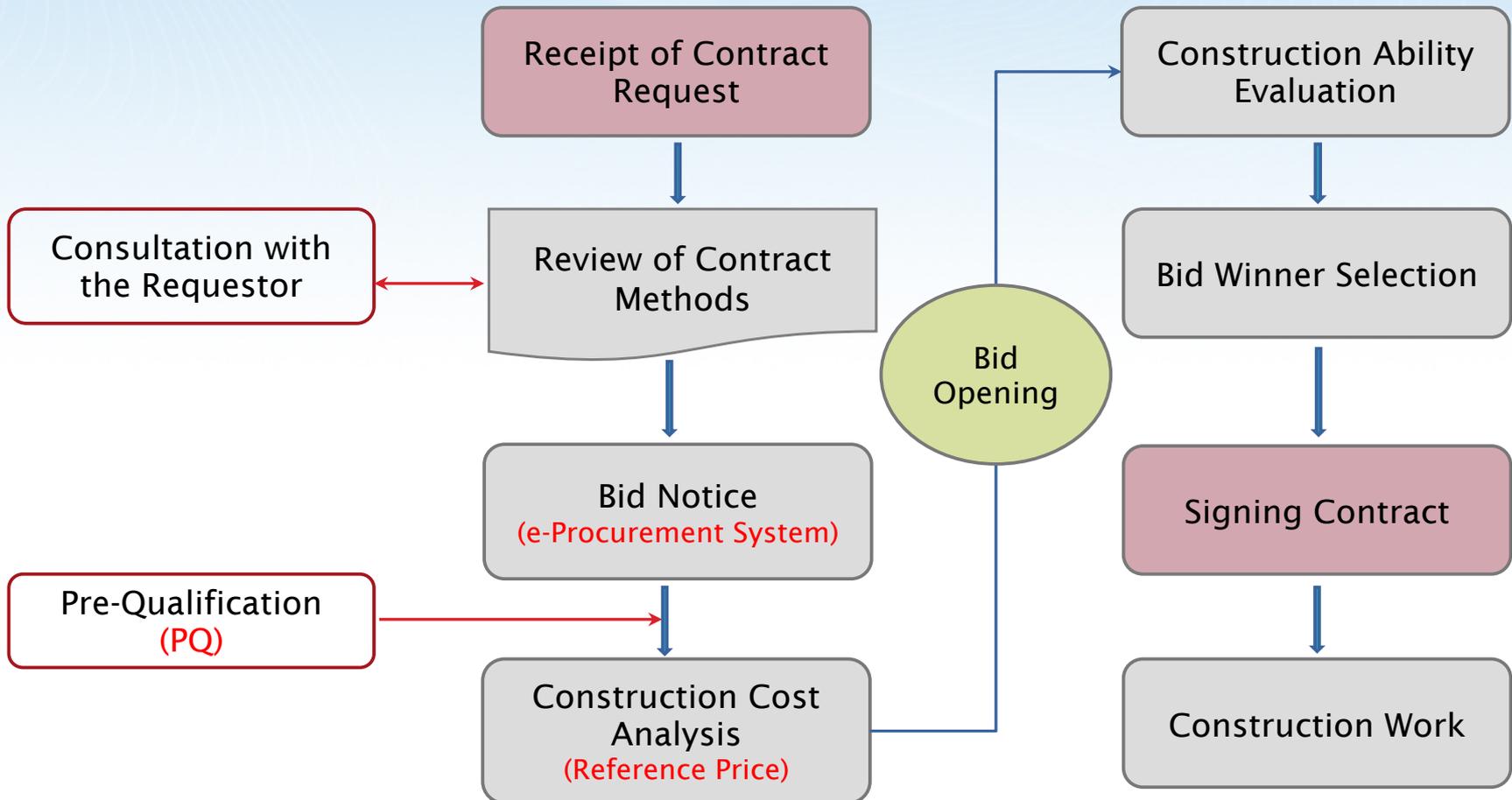
< Performance in Prior Review of Construction Cost ('18 ~ '20) >

(cost unit : 1 billion won)

Contents	2018			2019			2020		
	No.	Estimate	Saving	No.	Estimate	Saving	No.	Estimate	Saving
Civil Eng.	77	13,952	20.4	72	16,191	15.8	66	12,917	27.6
Architectural Eng.	27	5,016	19.5	15	2,294	14.4	23	12,389	35.3
Mechanical Eng.	10	122	0.4	12	1,193	0.9	11	301	1.1
Electrical Eng.	46	2,073	22.3	30	1,137	9.1	46	3,342	76.4
Total	160	21,163	62.6	129	20,815	38.4	146	28,949	140.4

2-3. Bids and Contracts

Procedure of Construction Contract



2-3. Bids and Contracts

Review of Contract Methods

Concept

- Deciding a appropriate contract method  By reviewing the usage & scale of projects, site condition, eligibility to participate, requests of end-users, relevant regulations, etc.

Review Contents

- Construction Amount and Period
- Qualification requirements, Requests of end-users
 - license standards, registration requirements
- Competitiveness Review : **Adjustment into balance** between restriction on qualification and mitigation for fair competition
 - High-skill Construction → Strengthen the standards
 - General Construction → Ease the standards

2-3. Bids and Contracts

Pre-Qualification (PQ) Process

Concept

- Evaluation of Construction capability, Management (financial) condition, Credit rating, etc. before Bid opening
- Only companies that pass the PQ evaluation can participate in the Bidding

Evaluation Process

- 1st Stage : Evaluation on Management condition
 - ☞ Pre-exclusion of companies with **insufficient financial** capacity
- 2nd Stage : Evaluation on Technical construction capability
 - ☞ Selection of firms with **excellent technical** capability

2-3. Bids and Contracts

Reference Price

Concept

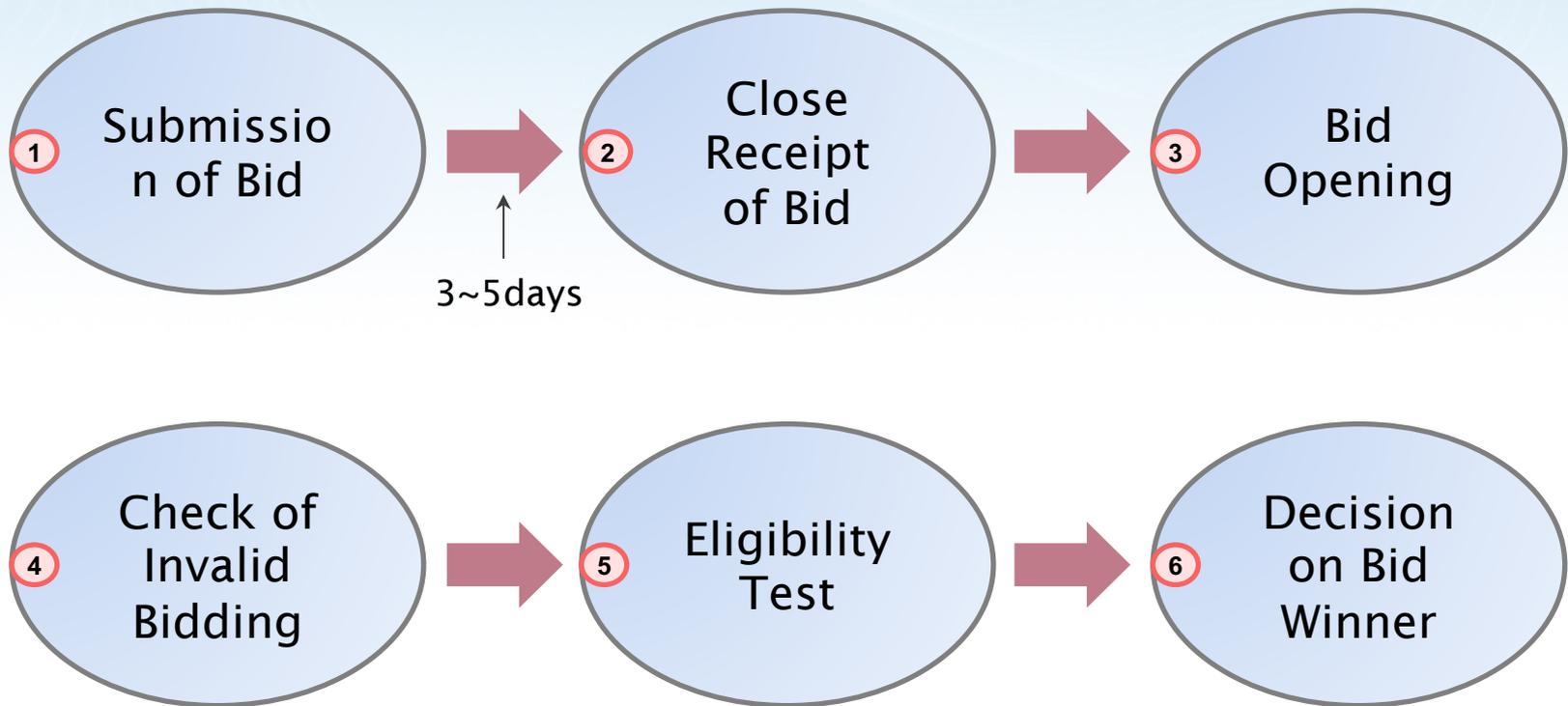
- The Price used as a standard for determining the contract amount
- Review the design documents and Announce it before the bidding begins

Decision Process

- 1st Stage : Prepare the Basic price through the review of production cost
- 2nd Stage : Reveal the Basic price to Online e-Procurement System
- 3rd Stage : Randomly Create 15 preliminary prices
- 4th Stage : Each bidder selects 2 prices out of 15
- 5th Stage : Decide the average price of the four most chosen prices as Reference Price

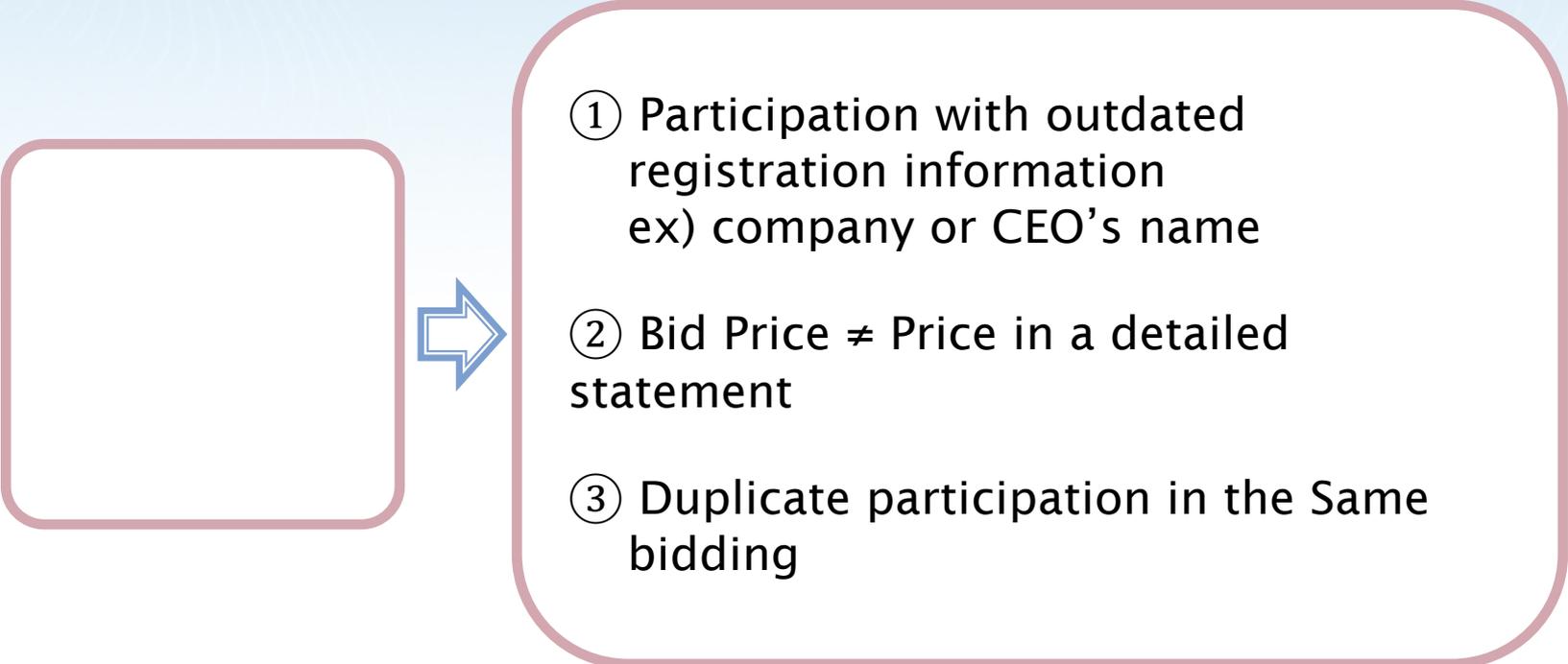
2-3. Bids and Contracts

Bidding Processing



2-3. Bids and Contracts

Bidding Processing

- 
- ① Participation with outdated registration information
ex) company or CEO's name
 - ② Bid Price \neq Price in a detailed statement
 - ③ Duplicate participation in the Same bidding

2-3. Bids and Contracts

The Selection System of Bid Winner

General
Construction
Bidding

Eligibility Test

- **Less** than 10 billion won
- Evaluation of construction capability and bid price, etc. from the lowest price bidder

Comprehensive
Evaluation

- **More** than 10 billion won
- Selection of the highest-score bidder based on the overall evaluation results

Design-Build
Delivery
Bidding

Turnkey Bidding

- **More** than 30 billion and High-level project
- Bid for the entire Design & Construction Process

Alternative
Bidding

- More than 30 billion and High-level project
- Suggest Alternatives (new technology · method) for existing design

Technical
Proposal Bidding

- High-skill construction that requires symbolism and artistry
- Bidder's technical proposal such as reduction of cost & period, and construction management

2-3. Bids and Contracts

< PPS Contract Performance by Bidding Method ('19 ~ '20) >

(unit : 1 billion won, %)

Category			'19	'20
General Construction Bidding	Eligibility Test	No.	2,530	2,362
		Value	9,158	9,525
		Average Winning Rate	(86.21)	(86.02)
	Comprehensive Evaluation	No.	19	94
		Value	1,102	2,147
		Average Winning Rate	(75.69)	(80.93)
Design-Build Delivery Bidding	Turnkey Bidding	No.	3	4
		Value	454	541
		Average Winning Rate	(97.72)	(94.85)
	Alternative Bidding	No.	2	1
		Value	435	79
		Average Winning Rate	(94.36)	(97.90)
	Technical Proposal Bidding	No.	8	4
		Value	756	1,074
		Average Winning Rate	(99.16)	(95.07)

2-3. Bids and Contracts

Eligibility Test

Assessment Method

- Assessment in the order of the Lowest Bidder (Below the reference price and Above the lower bidding limit)
- Select as the Successful bidder If the assessment result is 95 points or higher

Assessment Items

- **The Criteria Example** (for construction worth 5~10 billion won)
 - Construction Capability (30pt.) : past performance, financial status, credit rating
 - Bidding Price (50pt.)
 - Material, Labor, Sub-contract management (20pt.)

2-3. Bids and Contracts

Eligibility Test

< Detailed Assessment Items for each amount >

(price unit : 1 billion won)

Contents		General Construction				
		10~5	5~1	1~0.3	0.3~0.2	Below 0.2
Construction Capability	Past Performance	15	15	10	5	5
	Financial Status	15	15	10	5	5
	Credit Rating	(±0.9)	-	-	-	(2)
	Subcontract Mgt.	10	-	-	-	-
	Material & Labor Force Mgt.	10	-	-	-	-
	Sub Total	50	30	20	10	10
Bidding Price		50	70	80	90	90
No. of Expertise		-	(-10)	(-10)	(-10)	(-10)
Total		100	100	100	100	100

2-3. Bids and Contracts

Eligibility Test

Lower Bidding Limit

- Ensuring the minimum cost required for proper construction
- The winning rate that can pass the required score(95), getting a perfect score in all assessment items
- Classify according to the construction amount

Construction Scale (estimate)	Bid Price Score Formula	Lower Bidding Limit Rate
10b (less) ~ 5b (more)	$50 - 2 \times (a-b) \times 100 $	85.495%
5b ~ 1b	$70 - 4 \times (a-b) \times 100 $	86.745%
1b ~ 0.3b	$80 - 20 \times (a-b) \times 100 $	87.745%
0.3b ~ 0	$90 - 20 \times (a-b) \times 100 $	87.745%

$(a-b) = \{88/100 - (\text{Bid price} - A^* / \text{Reference price} - A)\}$

* A : Fixed Values  Sum of ①national pension, ②health insurance premiums, ③retirement deduction exp.,

④long-term insurance for the elderly, ⑤industrial safety and health mgt. exp.,
⑥safety mgt. exp., ⑦quality mgt. exp.

2-3. Bids and Contracts

Comprehensive Evaluation

Background

- Prevent quality deterioration due to the [Lowest Bidding Price System](#) → The lowest price bidder is first entitled for screening
- Introduced in 2016

Evaluation Method

- The bidder with the highest total score is selected by collecting scores for each evaluation item

Evaluation Items

- [The Criteria Example](#) (more than 10 billion won)
 - Construction Capability (50pt.) : Past performance, Technician placement, Expertise in same field, Consortium composition, etc.
 - Bidding Price (50pt.) : Review Price, Subcontracting, Quantity, etc.
 - Social Responsibility (bonus pt.) : Construction safety, Fair trade,

2-3. Bids and Contracts

Contents	General Criteria		Detailed	
			General	High skill
Construction Capability	Expertise	Past Performance	15	-
		Past Performance or Labor Workers	-	15
		Expertise in same field	3.5	5.5
		Technician placement	10	11
	Capability	Construction Review	15	15
		Capability by Scale	3	-
		Consortium	2	2
	Job Creation	Employment of workers	1.5	1.5
	Social Responsibility (extra 2pt.)	Safety	0.8	0.8
		Fair Trade	0.6	0.6
Contribution to local economy		0.8	0.8	
Sub total		50	50	
Bidding Price	Bidding Price		50	50
	Proper Calculation (minus)	Unit-price (general construction)	-4	-4
		Subcontracting plan	-2	-2
		Quantity	n/a	Minus -2 Bonus 1
		Construction Plan (high skilled construction)	n/a	-2
Sub total		50	50	
Contract Reliability (minus)	Breach of Expert Allotment Plan		Minus	Minus
	Breach of Subcontracting Plan		Minus	Minus
	Breach of Modification Rate in Subcontracting price		Minus	Minus
	Breach of Construction Plan		Minus	Minus
Total		100	100	

2-4. Construction Management

Construction Management

Purpose

- Supervision of Quality, Safety, Cost, and Process
- Review of design modification
- Inspection of mid-term and completion

Defect Management

Purpose

- Secure the safety of facilities through regular inspections after construction completion
- Prevention of defects and Prompt Repair in case of defects
- Feedback on the defect handling results to the design stage

Operation Status

- Regular Inspection : Inspect **3 times** (in 6months, 1year, 2years)
- Need-based Inspection : Request of users, Urgent repair

3. Customized Service

PPS Customized Service

Concept

- Target : Public Institutions that do not have professionals in the field of construction
- Providing Business Management Service to part or all of the project process

Type

- **Entire Package** : All business process from planning to maintenance
- **Planning-Design mgt.** : Acting for overall planning and design work
- **Construction mgt.** : Acting for construction and maintenance

Merits

- **Systematic** work process
- Prevention of poor design and construction
- Minimizing waste of the budget
- Optimized business promotion → construction period shortening

4. Anti-Corruption Policies

Integrity Contract System

Concept

- In order to secure Transparency and Fairness of Contract, it is mandatory for bidders to submit an integrity pledge
- In case of violation, the successful bid is cancelled or the contract is terminated

[Major Contents in Integrity Pledge]

1. Prohibition of Accepting Bribery and Providing Teat
2. Prohibition of Prior Negotiation on Bidding Price and Collusion
3. Prohibition of Requesting or Receiving Special Bid Information

4. Anti-Corruption Policies

Bid Bond Payment

Concept

- Bid bond(5% of bid amount) is generally replaced by a memorandum of payment
- Those who have been sanctioned for unfairness within the last 2 years must pay a bid bond

Sanctions for Fraudulent Workers

Concept

- **Restriction on participation** in bidding within 2 years
 - Leading or Participating in Collusion
 - Causing losses to the state during the contract process
 - Documents forgery, Submission of false documents



Thank you

