

**THE SOCIALIST REPUBLIC OF VIETNAM  
MINISTRY OF CONSTRUCTION**

**APPENDIX OF FINAL REPORT  
ON  
PROJECT FOR CAPACITY ENHANCEMENT  
IN CONSTRUCTION QUALITY  
ASSURANCE  
IN  
THE SOCIALIST REPUBLIC OF VIETNAM**

**December 2013**

**JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)**

**Katahira and Engineers International  
Central Nippon Expressway Company Limited**

<b>EI</b>
<b>JR</b>
<b>13-257</b>

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**APPENDIX 3-1-1**

**CATEGORIES OF CONSTRUCTION  
INVESTMENT PROJECTS (CIPS)**

(Enclosed with Decree No. 12/2009/ND-CP dated  
10 February 2009 by Government)





## CATEGORY OF CIPs

No.	CATEGORY OF CIPs	TOTAL INVESTMENT COST
	<b>Important national projects</b>	Pursuant to Resolution No. 66/2006/QH11 by National Assembly
<b>I</b>	<b>Group A</b>	
1	CIPs in: national security and defense works with political-social importance.	Any amount of capital
2	CIPs in: production of noxious and poisonous substances, dynamite; infrastructure for industrial zone	Any amount of capital
3	CIPs in: industrial electricity, petroleum exploitation, chemicals, fertilizers, machine manufacture, cement, metallurgy, mineral exploitation and processing, transportation projects (bridge, sea port, river port, airway, railway, national highway), residential houses.	Above VND 1.500 billion
4	CIPs in: water resources, transportation (different from works regulated in item I-3), water supply and drainage, technical infra works, electricity works, production of equipment for informatics, electronics, pharmacy and chemical, medical, other mechanical works, production of materials, postal and telecommunication services	Above VND 1.000 billion
5	CIPs in: light industry, ceramic, glass, printing, national garden, natural preservation, agricultural and forestry production, aquaculture, process of agricultural, forestry and aquatic products.	Above VND 700 billion
6	CIPs in: medical, culture, education, broadcasting and television, other civil construction works (except residential houses), storage, tourism, sports, scientific research and other works	Above VND 500 billion
<b>II</b>	<b>GROUP B</b>	
1	CIPs in: industrial electricity, exploitation of petroleum, chemical and fertilizer, machine manufacture, cement, metallurgy, mineral exploitation and process, transportation works (bridge, sea port, river port, airway, railway, national highway), residential houses.	From VND 75 billion to VND 1.500 billion
2	CIPs in: water resources, transportation (different from works regulated in item II-1), water supply and drainage, technical infra works, electricity works, production of equipment for informatics, electronics, pharmacy and chemical, medical, other mechanical works, production of materials, postal and telecommunication services	From VND 50 billion to VND 1.000 billion
3	CIPs in: technical infra for new townships, light industry, ceramic, glass, printing, national garden, natural preservation, agricultural and forestry production, aquaculture, process of agricultural, forestry and aquatic products.	From VND 40 billion to VND 700 billion
4	CIPs in: medical, culture, education, broadcasting and television, other civil construction works (except residential houses), storage, tourism, sports, scientific research and other works	From VND 30 billion to VND 500 billion
<b>III</b>	<b>GROUP C</b>	

No.	CATEGORY OF CIPs	TOTAL INVESTMENT COST
1	CIPs in: industrial electricity, exploitation of petroleum, chemical and fertilizer, machine manufacture, cement, metallurgy, mineral exploitation and process, transportation works (bridge, sea port, river port, airway, railway, national highway). Schools within plan (any amount of capital), residential houses.	Below VND 75 billion
2	CIPs in: water resources, transportation (different from works regulated in item III-1), water supply and drainage, technical infra works, electricity works, production of equipment for informatics, electronics, pharmacy and chemical, medical, other mechanical works, production of materials, postal and telecommunication services	Below VND 50 billion
3	CIPs in: light industry, ceramic, glass, printing, national garden, natural preservation, agricultural and forestry production, aquaculture, process of agricultural, forestry and aquatic products.	Below VND 40 billion
4	CIPs in: medical, culture, education, broadcasting and television, other civil construction works (except residential houses), storage, tourism, sports, scientific research and other works	Below VND 30 billion

**Notes:**

1. Projects in group A regarding railway and road must be segmented in accordance guidance by MOT.
2. Projects for construction of head office, working building of state bodies must be implemented in accordance with Decision by Prime Minister.

## **APPENDIX 3-1-2**

# **CLASSIFICATION OF GRADING FOR CIVIL WORKS**

(Circular No.33/2009/TT.BXD)



(Regulation)  
**CLASSIFICATION, GRADING OF CIVIL WORKS**  
 Circular No.33/2009/TT.BXD,

**Table A.1 Classification, Grading of civil works**

Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
A.1.1 Dwelling house	A.1.1.1 Apartment building	Number of stories	-	> 25	9 ÷ 25	4 ÷ 8	≤ 3
	A.1.1.2 Separate dwelling houses		-	-	-	Villa hoặc ≥ 4	≤ 3
A.1.2 Public works	A.1.2.1 Construction for education: Nurseries, kindergartens, schools of all levels, universities, colleges, intermediate vocational schools, job-training schools, technical workers' schools, professional schools and schools for all kinds.	Height (m)	-	> 28	>15÷28	6 ÷ 15	< 6
	A.1.2.2 Construction for health: Poli-clinic, Specialized clinic hospital at central and local levels, regional poli-clinic, specialized clinic hospital, medical station, maternity hospital, house for alternative, house for orthopedics, nursing house for old people, disease prevention and other health facilities.	Height (m)	-	> 28	>15÷28	6 ÷ 15	< 6
	A.1.2.3 Construction for sport: Stadium, gymnasium						
	Out-door	The importance or capacity (thousand seats)	International, National or > 40	>20÷40	5÷20	< 5	-
Indoor	> 7,5		> 5÷7,5	2÷5	< 2	-	

Types of works		Criteria for grading	Grades of works					
			Special grade	I	II	III	IV	
A.1.2 Public construction	A.1.2.4 Construction for culture							
	a) Conference center, theatre, recreation center, club, cinema, circus	Importance of capacity (thousand seat)	International, National or > 3	> 1,2÷3	>0,3÷1,2	≤ 0, 3	-	
	b) Museum, Library, exhibition hall, and other buildings	Importance	International, National	Provincial	The rest	-	-	
	c) Vestige construction, relic for belief.	Importance	National important vestige	National	Provincial	The rest	-	
	d) Amusement and entertainment building	With adventure factor or height (m)	-	Adventure games or > 28 m	15 ÷ 28	< 15	-	
	A.1.2.5 Construction for commerce and service: shopping center, supermarket, market, shop, restaurant, cafeteria...		Total floor area (thousand m2)	> 50	>15÷50	> 5÷15	0,5 ÷ 5	< 0,5
	A.1.2.6 Construction for information, communication							
	a) Radio and Television broadcasting tower	Height (m)	≥ 300	200 ÷ < 300	100 ÷ < 200	50 ÷ < 100	< 50	
	b) Building for communication (post office, building with communication equipments..)	Total floor area (thousand m2)	>15	> 10÷15	5 ÷ 10	1 ÷ < 5	< 1	
	A.1.2.7 Terminal: airport, harbour, railway station, bus station		Total floor area (thousand m2)	> 50	>15÷ 50	> 5÷15	0,5 ÷ 5	< 0,5
A.1.2.8 Multi-function building, hotel, dormitory, guest house, hostel		Number of stories	> 50	>25÷50	9 ÷ 25	4 ÷ 8	≤ 3	
A.1.2.9 State administrative agencies' office: National Assembly house, Offices for The		The importance	Central Party Committee,	Provincial people	District people	Party committ	-	

Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
	Government, President, Ministries, Sectors, Committee of all level		National Assembly, The President, The Government	committee, Provincial people council, Ministries and the equivalent	committee, District people council, Provincial departments and the equivalent	committee, People council at commune level	
	A.1.2.10 Office for business units, enterprises, political-social organization and other organization not in Item 2.8.	Height (m)	-	> 50	> 28÷50	> 12÷28	≤ 12

**Table A.2 Classification, Grading of civil works not in Table A.1**

Criteria for grading	Unit	Special grade	Grade I	Grade II	Grade III	Grade IV
1. The importance	Administrative level	International, national	Province, Central city	District, provincial city	Commune	-
2. Size of structure						
a) Height	m	-	> 75	> 28 ÷ 75	> 12 ÷ 28	≤ 12
b) Longest span	m	-	> 72	> 36÷72	12÷36	< 12
c) Total floor area (TFA)	m <sup>2</sup>	-	> 15÷50	> 5÷15	0,5÷5	< 0,5
d) Number of basements	number	-	4÷5	2÷3	1	-

CLASSIFICATION, GRADING OF INDUSTRIAL WORKS

Table B.1 Classification, grading of industrial works in main manufacturing line

Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
B.1.1 Construction materials manufactures	B.1.1.1 Cement plant	Capacity (million ton /per year)	-	> 2	1 ÷ 2	< 1	-
	B.1.1.2 Tile factory (Ceramic, Granite, terracotta brick)	Capacity (million m <sup>2</sup> /per year)	-	> 5	2 ÷ 5	< 2	-
	B.1.1.3 Factory for baked clay brick, roof-tile)	Capacity (million piece/per year)	-	> 20	10 ÷ 20	< 10	-
	B.1.1.4 Factory for sanitary faience	Capacity (million product/per year)	-	-	≥ 0,5	< 0,5	-
	B.1.1.5 Factory for glass	Capacity (million m <sup>2</sup> /per year)	-	> 20	10 ÷ 20	< 10	-
	B.1.1.6 Factory for concrete mixtures and concrete components	Capacity (million m <sup>3</sup> /per year)	-	> 1	0,5 ÷ 1	< 0,5	-
	B.1.1.7 Rock mines	Capacity (million m <sup>3</sup> /per year)	-	-	> 3	1 ÷ 3	< 1
B.1.2 Construction for coal-	B.1.2.1 Underground coal minings	Out put (million ton/per	-	> 1	0,3 ÷ 1	< 0,3	-



Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
mining and ore-mining	B.1.2.2 Surface coal minings	year)	-	-	> 2	0,5 ÷ 2	< 0,5
	B.1.2.3 Construction for coal-sorting, washing and selecting.		-	> 5	2 ÷ 5	0,5 ÷ < 2	< 0,5
	B.1.2.4 Underground ore-minings		-	> 3	1 ÷ 3	0,5 ÷ < 1	< 0,5
	B.1.2.5 Surface ore-minings		-	-	> 2	1 ÷ 2	< 1
	B.1.2.6 Factory for ore-selecting and ore-enriching		-	> 7	3 ÷ 7	1 ÷ < 3	< 1
	B.1.2.7 Natural bauxite mining		-	> 15	7 ÷ 15	3 ÷ < 7	< 3
	B.1.2.8 Aluminium processing plant		-	> 3	1 ÷ 3	< 1	-
B.1.3 Petroleum industry	B.1.3.1 Marine prospection and exploitation derricks	Depth below sea level (m)	> 5000	300 ÷ 5000	< 300	-	-
	B.1.3.2 Petrochemical refineries	Capacity (million ton of crude /per year)	> 10	5 ÷ 10	< 5	-	-
	B.1.3.3 Gas processing plant	Capacity (million m <sup>3</sup> khi/per day)	> 10	5 ÷ 10	< 5	-	-
	B.1.3.4 Petrol and kerosene depots	Tank capacity (thousand m <sup>3</sup> )	> 20	10 ÷ 20	5 ÷ < 10	1 ÷ < 5	< 1
	B.1.3.5 Liquefied gas depots	Tank capacity (thousand m <sup>3</sup> )	> 20	10 ÷ 20	5 ÷ < 10	1 ÷ < 5	-
	B.1.3.6 Gas and petrol pipelines	Pressure (bar)	Offshore	Ashore > 60	Ashore 19 ÷ 60	Ashore 7 ÷ < 19	-
B.1.4 Heavy industries	B.1.4.1 Non-ferrous metallurgical plant	Output (million ton/per year)	-	0,5 ÷ 1	0,1 ÷ < 0,5	< 0,1	-

Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
	B.1.4.2 Ferrous metallurgical plant steel laminating plant	Output (million ton/per year)	Metallurgica I complex	> 1	0,5 ÷ 1	< 0,5	-
	B.1.4.3 Mechanical plants for dynamic machines, machine tools of all types.	Output (thousand pieces/per year)	-	> 5	2,5 ÷ 5	< 2,5	-
	B.1.4.4 Plants for industrial equipments and complete equipments	Output (thousand ton/per year)	-	> 10	5 ÷ 10	< 5	-
	B.1.4.5 Automobiles assembly plants	Output (nghìn vehicles/per year)	-	> 20	5 ÷ 20	< 5	-
	B.1.4.6 Motorcycles manufacturing and assembly plants	Output (million vehicles/per year)	-	> 1	0,5 ÷ 1	< 0,5	-
B.1.4 Heavy industries	B.1.4.7 Constructions for energy						
	a) Thermal-electric power plant	Total Capacity (MW)	> 2000	600 ÷ 2000	300 ÷ < 600	100 ÷ < 300	< 100
	b) Hydraulic-electric plant		> 1000	300 ÷ 1000	100 ÷ < 300	50 ÷ < 100	< 50
	c) Atomic power plant		Any grade	-	-	-	-
	d) Power grids and transformer stations	Voltage (kV)	≥ 500	110 ÷ 220	1 ÷ < 110	< 1	-
	B.1.4.8 Chemical, petrochemical industry						
<b>Fertilizers and Pesticide - insecticide</b>							

Types of works		Criteria for grading	Grades of works					
			Special grade	I	II	III	IV	
	a) Factories for Urea, DAP, MPA, SA, NPK compound	Output (thousand ton/per year)	-	> 500	>200 ÷ 500	< 200	-	
	b) Factories for Phosphat fertilizer of all kinds (superphosphate, fused phosphate)		-	> 500	300 ÷ 500	100 ÷ < 300	< 100	
	c) Factories for NPK mixtures, fertilizer		-	-	> 300	50 ÷ < 300	< 50	
	d) Factories for Pesticide - insecticide			> 15	> 10 ÷ 15	3 ÷ 10	< 3	
<b>Basic chemical</b>								
	dd) Factories for ammonia, acid, alkali and chlorine of all kinds.	Output (thousand ton/per year)	> 200	100 ÷ 200	40 ÷ < 100	< 40	-	
	e) Factories for soda			> 300	200 ÷ 300	< 200	-	
	f) Factories for inorganic salt, oxide		-	-	> 20	10 ÷ 20	< 10	
	g) Factories for pure and inorganic chemicals		-	> 20	10 ÷ 20	< 10	-	
B.1.4. Heavy industries	B.1.4.8 Chemical and petrochemical industry							
	<b>Rubber and detergent manufacturing</b>							
		h) Factories for tube and tire for automobiles and tractors (Tube code 900-20)	Output (million pieces/per year)	-	> 1	0, 5 ÷ 1,0	0,2 ÷ < 0,5	-
		i) Factories for tube for motorcycles and bicycles		-	-	> 5	1÷5	< 1
		k) Factories for belt conveyor	Output (thousand	-	-	> 500	200÷	< 200

Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
		m <sup>2</sup> /per year				500	
	l) Factories for technical rubber	Output (million products/per year)	-	-	> 1,5	0,5 ÷ 1,5	< 0,5
	m) Factories for detergent (washing cream, washing powder, shampoo, detergent, soap ...)	Output (thousand tons/per year)	-	-	15 ÷ 30	5 ÷ < 15	< 5
<b>Electrochemical product, paint, chemical mining materials</b>							
	n) Factories for battery	Output (million pieces/per year)	-	-	> 150	15 ÷ 150	< 15
	o) Factories for accumulator	Output (thousand Kwh/per year)	-	> 450	150 ÷ 450	< 150	-
	p) Factories for paints of all kinds, alkyd materials, acrylic	Output (thousand ton/per year)	-	-	-	> 5 ÷ 20	< 5
	q) Factories for chemical mining materials (Apatite ore sifting)	Output (thousand ton/per year)	-	> 600	350 ÷ 600	100 ÷ < 350	-
<b>Petrochemical products and other chemicals</b>							
	r) Factories for Petrochemical products (PP, PE, PVC, PS, PET, SV, fibre, DOP, Polystyren, LAB, synthetic rubber)	Output (thousand ton/per year)	> 500	200 ÷ 500	< 200	-	-
B.1.4. Heavy industries	B.1.4.8 Chemical and petrochemical industry						

Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
	s) Factories for industrial gas	Output (thousand m <sup>3</sup> /h)	-	-	> 8,5	3,0 ÷ 8,5	< 3,0
	t) Factories for soldering stick, bead, steel fibre	Output (thousand ton/per year)	-	-	-	≥ 3,0	< 3,0
	u) Factories for pharmaceutical chemistry (microbiology), medicine	Scale	Any scale	-	-	-	-
	v) Factories for chemicals, explosive materials	Scale	Any scale	-	-	-	-
	w) Factories for cosmetic chemical	Output (thousand ton/per year)	-	-	> 5,0	≤ 5,0	-
B.1.5. Light industries	B.1.5.1 Food						
	a) Dairy factories	Output (million lit/per year)	-	≥ 100	30 ÷ < 100	< 30	-
	b) Factories for bakery and instant noodles	Output (thousand ton/per year)	-	> 25	5 ÷ 25	< 5	-
	c) Freezing stores	Capacity (thousand ton)	-	> 1	0,25 ÷ ≤ 1	< 0,25	-
	d) Factories for edible oil, flavourings	Output (million litre/per year)	-	≥ 150	50 ÷ < 150	< 50	-
	e) Factories for alcohol, beer, beverage	Output (million lit/ per year)	-	≥ 100	25 ÷ < 100	< 25	-
	f) Tobacco factories	Output (million packet/	-	≥ 200	50 ÷ < 200	< 50	-

Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
		per year)					
B.1.5 Light industries	B.1.5.2 The others						
	a) Textile mill	Output (million metre / per year)	-	$\geq 25$	$5 \div < 25$	$< 5$	-
	b) Printing, dyeing factories	Output (million metre / per year)	-	$\geq 35$	$10 \div < 35$	$< 10$	-
	c) Garment factories	Công suất (million products/per year)	-	$\geq 10$	$2 \div < 10$	$< 2$	-
	d) Leather-tanning and leather products factories	Output (million products/ per year)	-	$\geq 12$	$1 \div < 12$	$< 1$	-
	e) Factories for plastic products	Output (thousand ton/ per year)	-	$\geq 15$	$2 \div < 15$	$< 2$	-
	f) Factories for porcelain ware and glassware		-	$\geq 25$	$3 \div < 25$	$< 3$	-
	g) Pulp and paper mills		-	$\geq 60$	$25 \div < 60$	$< 25$	-
	i) Factories for electronics product assembly (TV set, computers and equivalent products), electro-refrigeration (air conditioners, refrigerators and equivalent products)	Output (thousand product / per year)	-	$> 300$	$100 \div 300$	$< 100$	-
	k) Factories for accessories, spare parts and assemblies (electronic circuits or ICs and equivalent products)	Output (million product / per year)	-	$\geq 400$	$300 \div < 400$	$200 \div < 300$	$< 200$
l) Tobacco factories	Output (million packet/ per year)	-	$\geq 200$	$50 \div < 200$	$< 50$	-	

Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
B.1.6 Aquatic product processing industry	Aquatic product processing factory	Output (ton of product/day)	-	> 300	100 ÷ 300	20 ÷ 100	<20

**Table B.2 Industrial construction grading according to the importance or the structure size**

Criteria for grading	Unit	Special grade	Grade I	Grade II	Grade III	Grade IV
1. Importance						
a) Depot for radioactive source	Economical – social – environmental-ecological consequence	Any scale	-	-	-	-
b) Factory or depot for explosive materials		Any scale	-	-	-	-
2. Structure size						
a) Height	(m)	-	>200	>100 ÷ 200	>50 ÷ 100	≤50
b) Longest span	(m)	-	>72	>36 ÷ 72	12 ÷ 36	<12
c) Number of basements or the depth of underground	Number of basements or (m)	-	≥ 4 basements or >12m	2 ÷ 3 basements or 6 ÷ 12 m	1 basements or 3 ÷ <6 m	-

CLASSIFICATION, GRADING FOR URBAN TECHNICAL INFRASTRUCTURE

**Bảng C.1 Classification, grading of urban technical infrastructure**

Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
C.1.1 Water supply	C.1.1.1 Water extraction structure, unpurified water pumping station, water treatment plant, water pumping station	thousand m <sup>3</sup> /day	-	> 100	30 ÷ 100	5 ÷ <30	< 5
	C.1.1.2 Fresh water tank	thousand m <sup>3</sup>	-	≥ 10	5 ÷ <10	1 ÷ <5	< 1
	C.1.1.3 Water supply line	Pipe diameter (mm)	-	≥ 1.200	800 ÷ < 1.200	300 ÷ < 800	< 300
	C.1.1.4 Water tower	thousand m <sup>3</sup>	-	≥ 2	1 ÷ <2	0,1 ÷ <1	< 0,1
C.1.2 Drainage	C.1.2.1 Rain sewer, sewage pipe, main sewer.	Pipe diameter (mm) or equivalent section	-	≥ 2.000	1.200 ÷ < 2.000	700 ÷ <1.200	< 700
	C.1.2.2 Detention reservoir	ha	-	≥ 20	15 ÷ <20	5 ÷ < 15	< 5
	C.1.2.3 Rainwater pumping station	m <sup>3</sup> /s	-	≥ 25	10 ÷ <25	2 ÷ < 10	< 2
	C.1.2.4 Sewage pumping station, sewage treatment plant	thousand m <sup>3</sup> /per day	-	≥ 100	30 ÷ <100	5 ÷ < 30	< 5
	C.1.2.5 Construction for mud treatment	m <sup>3</sup> /per day	-	≥ 1.000	200 ÷ < 1.000	50 ÷ < 200	< 50
C.1.3 Waste treatment	C.1.3.1 Municipal solid waste						
	a) Waste dumping ground	ton/per day	-	≥ 1.000	200 ÷ < 1.000	50 ÷ < 200	< 50
	b) Plant for waste incineration, treatment and processing	ton/per day	-	≥ 500	100 ÷ < 500	25 ÷ < 100	< 25
	C.1.3.2 Toxic solid waste	ton/per day	-	≥ 100	20 ÷ < 100	< 20	-
C.1.4 Public lighting		Scale of town	-	-	-	Town of level 3rd	The rest



Types of works		Criteria for grading	Grades of works				
			Special grade	I	II	III	IV
						and above	
C.1.5 Park		Scale of town	-	-	-	Town of level 3rd and above	The rest
C.1.6 Urban cemetery			-	-	-	Town of level 3rd and above	The rest
C.1.7 Garage for automobiles and motorcycles <sup>(1)</sup>	C.1.5.1 Underground garage	Number of basements or depth(m)	-	4 ÷ 5 or 12 m ÷ 18 m	2 ÷ 3 or 6 m ÷ < 12 m	1 or < 6 m	-
	C.1.5.2 Ground garage	Number of stories or height (m)	-	-	6 ÷ 9 or 18 m ÷ 32,6 m	3 ÷ 5 or 9 m ÷ < 18 m	≤ 2 or < 9 m
C.1.8 Technical tunnel (Tunnel for electric-cables, communication cables, water pipes...)		Diameter of tunnel; (mm) or equivalent section	-	≥ 2.000	1.200 ÷ < 2.000	700 ÷ < 1.200	< 700
<b>Municipal transportation infrastructure</b>							
C.1.9 Metro		Scale	Any scale	-	-	-	-
C.1.10 Roadway, urban road		Converted vehicle flow capacity/ day	≥ 30.000	10.000 ÷ < 30.000	3.000 ÷ < 10.000	300 ÷ < 3.000	< 300
C.1.11 Railway			High-speed railway	Light rail	National railway	Dedicated railway	-
C.1.12 Highway bridge, pedestrian bridge, railway bridge		Span (m)	-	> 100	50 ÷ 100	25 ÷ 50	< 25
C.1.13 Tunnel for cars, railway and pedestrians		Length (m)	-	> 1.000	100 ÷	25 ÷ <	< 25

Types of works	Criteria for grading	Grades of works				
		Special grade	I	II	III	IV
				1.000	100	
C.1.14 Waterway						
a) Seaport piers, docks	Capacity (DWT)	-	> 50.000	30.000 ÷ 50.000	10.000 ÷ < 30.000	< 10.000
b) Ports for ships and ship-building and –repairing plants	Ton	-	> 3.000	1.500 ÷ 3.000	750 ÷ < 1.500	< 750
c) Ship locks		-	> 1.500	750 ÷ 1.500	200 ÷ < 750	< 200
d) River navigation	Width B, depth H (m)	-	B ≥ 90 H ≥ 4	B = 70 ÷ < 90 H = 3 ÷ < 4	B = 50 ÷ < 70 H = 2 ÷ < 3	B < 50 H < 2
C.1.15 Runway for taking-off and landing	ICAO	IV E	IV D	III C	II B	I A
NOTE 1:						
- The garages for automobiles and motorcycles which have both underground parts and ground parts or which are combined in other constructions shall be graded according to the one which was higer graded.						
- The garage will be graded according to the higher level of the two criterias of the number of stories and the depth (height).						

**APPENDIX 3-2-1**  
**LIST OF REGULATIONS**



### List of Regulations

SEQ	File Name	E/V	Title
1	Dec01_2008_ND-CP_MOA_E.doc	E	DEFINING THE FUNCTIONS, TASKS, POWERS AND ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT
2	Dec111_2006_ND-CP_E.doc	E	GUIDING THE IMPLEMENTATION OF THE BIDDING LAW AND THE SELECTION OF CONSTRUCTION CONTRACTORS UNDER THE CONSTRUCTION LAW
3	Dec112_2009_ND-CP_E.doc	E	ON MANAGEMENT OF WORK CONSTRUCTION INVESTMENT EXPENSES
4	Dec113_2009_ND-CP_E.doc	E	ON INVESTMENT MONITORING AND EVALUATION
5	Dec124_2007_ND-CP.doc	E	ON MANAGEMENT OF CONSTRUCTION MATERIALS
6	Dec126_2004_ND-CP.doc	E	ON THE SANCTIONING OF ADMINISTRATIVE VIOLATIONS IN CONSTRUCTION ACTIVITIES, URBAN INFRASTRUCTURE MANAGEMENT AND HOUSE USE MANAGEMENT
7	Dec12_2009_ND-CP_E (lawweb).doc	E	ON MANAGEMENT OF INVESTMENT PROJECTS ON THE CONSTRUCTION OF WORKS
8	Dec12_2009_ND-CP_E.doc	E	ON MANAGEMENT OF INVESTMENT PROJECTS ON THE CONSTRUCTION OF WORKS (CIPs)
9	Dec131_2006_ND-MPI_E.doc	E	ISSUANCE OF REGULATION ON MANAGEMENT AND UTILIZATION OF OFFICIAL DEVELOPMENT ASSISTANCE
10	Dec16_2005_ND-CP_E.doc	E	MANAGEMENT OF INVESTMENT PROJECTS FOR CONSTRUCTION OF WORKS
11	Dec16_2005_ND-CP_summary.doc	E	MANAGEMENT OF INVESTMENT PROJECTS FOR CONSTRUCTION OF WORKS
12	Dec178_2007_ND-CP_E.doc	E	DEFINING THE FUNCTIONS, TASKS AND ORGANIZATIONAL STRUCTURES OF MINISTRIES AND MINISTERIAL-LEVEL AGENCIES
13	Dec17_2008_ND-CP_E.doc	E	DEFINING THE FUNCTIONS, TASKS, POWERS AND ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF CONSTRUCTION
14	Dec185_2007_ND-CP_MOCST_E.doc	E	DEFINING THE FUNCTIONS, TASKS, POWERS AND ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF CULTURE, SPORTS AND TOURISM
15	Dec188_2007_ND-CP_MOH_E.doc	E	DEFINING THE FUNCTIONS, TASKS, POWERS AND ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF HEALTH
16	Dec189_2007_ND-CP_MOIT_E.doc	E	DEFINING THE FUNCTIONS, TASKS, POWERS AND ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF INDUSTRY AND TRADE
17	Dec209_2004_ND-CP_revised_E.doc	E	ON QUALITY MANAGEMENT OF CONSTRUCTION WORKS

18	Dec23_2009_ND-CP_E.doc	E	SANCTIONING OF ADMINISTRATIVE VIOLATIONS IN CONSTRUCTION ACTIVITIES; REAL ESTATE BUSINESS; EXPLOITATION, PRODUCTION AND TRADING OF CONSTRUCTION MATERIALS; MANAGEMENT OF TECHNICAL INFRASTRUCTURE; AND MANAGEMENT OF TECHNICAL INFRASTRUCTURE; AND MANAGEMENT OF DEVELOPMENT OF HOUSES AND OFFICES
19	Dec29_2007_ND-CP_E.doc	E	ON THE MANAGEMENT OF URBAN ARCHITECTURE
20	Dec35_2008_ND-CP_E.doc	E	ON CONSTRUCTION, MANAGEMENT AND USE OF CEMETERIES
21	Dec41_2007_ND-CP_E.doc	E	ON URBAN UNDERGROUND CONSTRUCTION
22	Dec43_2010_ND-CP_E.pdf	E	Về đăng ký doanh nghiệp
23	Dec48_2010_ND-CP_E.doc	E	ON CONTRACTS IN CONSTRUCTION ACTIVITIES
24	Dec49_2008_ND-CP_E.doc	E	AMENDING AND SUPPLEMENTING A NUMBER OF ARTICLES OF THE GOVERNMENT'S DECREE No. 209/2004/ND-CP OF DECEMBER 16, 2004, ON QUALITY MANAGEMENT OF CONSTRUCTION WORKS
25	Dec51_2008_ND-CP_MOT_E.doc	E	DEFINING THE FUNCTIONS, TASKS, POWERS AND ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF TRANSPORTATION
26	Dec58_2008_ND-CP_E.doc	E	ON TENDERING MAKING DETAILED PROVISIONS FOR IMPLEMENTATION OF THE LAW ON TENDERING AND FOR SELECTION OF CONSTRUCTION CONTRACTORS PURSUANT TO THE LAW ON CONSTRUCTION
27	Dec83_2009_ND-CP_E.doc	E	AMENDING AND SUPPLEMENTING A NUMBER OF ARTICLES OF THE GOVERNMENT'S DECREE NO. 12/2009/ND-CP OF FEBRUARY 12, 2009, ON MANAGEMENT OF WORK CONSTRUCTION INVESTMENT PROJECTS
28	Dec85_2003_ND-CP_MOET_E.doc	E	PRESCRIBING THE FUNCTIONS, TASKS, POWERS AND ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF EDUCATION AND TRAINING
29	Dec85_2009_ND-CP_E.doc	E	GUIDING THE BIDDING LAW AND THE SELECTION OF CONSTRUCTION CONTRACTORS UNDER THE CONSTRUCTION LAW
30	Dec99_2007_ND-CP_E.doc	E	ON MANAGEMENT OF WORK CONSTRUCTION INVESTMENT EXPENDITURES
31	Dec08_2005_ND-CP_Construction Planning_E.pdf	E	ON CONSTRUCTION PLANNING
32	Dec112_2009_ND-CP.PDF	E	ON MANAGEMENT OF WORK CONSTRUCTION INVESTMENT EXPENSES
33	Dec 185_2007_ND-CP_MOCST_E.doc	E	DEFINING THE FUNCTIONS, TASKS, POWERS AND ORGANIZATIONAL STRUCTURE OF THE MINISTRY OF CULTURE, SPORTS AND TOURISM
34	Dec209_2004_ND-CP_E.pdf	E	QUALITY MANAGEMENT OF CONSTRUCTION WORKS
35	Dec209_2004_ND-CP_revised_E.doc	E	QUALITY MANAGEMENT OF CONSTRUCTION WORKS

36	Cir01_2009_TT-BXD_E.doc	E	PROVIDING FOR SOME ISSUES ON THE GRANT OF HOUSE OWNERSHIP CERTIFICATES AND GUIDING THE MODEL CONTRACT ON TRADING IN APARTMENTS UNDER CONSTRUCTION INVESTMENT PROJECTS OF HOUSE DEALING ORGANIZATIONS
37	Cir01_2010_TT-BKH_E.doc	E	DETAILING THE MAKING OF CONSTRUCTION AND INSTALLATION BIDDING DOSSIERS
38	Cir01_2010_TT-BKH_E_2.doc	E	DETAILING THE MAKING OF CONSTRUCTION AND INSTALLATION BIDDING INVITATION DOSSIERS
39	Cir02_2010_TT-BKH_E.doc	E	DETAILING THE COMPILATION OF BIDDING DOSSIERS OF SMALL-SIZED CONSTRUCTION AND INSTALLATION BIDDING PACKAGES
40	Cir02_2010_TT-BKH_V.doc	E	Mẫu hồ sơ mời thầu Gói thầu xây lắp quy mô nhỏ (Ban hành kèm theo thông tư số 02/2010/TT-BKH)
41	Cir03_2007_TT-BKH_E.doc	E	GUIDING THE ORGANIZATIONAL STRUCTURE, FUNCTIONS AND RESPONSIBILITIES OF ODA PROGRAM OR PROJECT MANAGEMENT UNITS
42	Cir03_2008_TT-BXD_E.doc	E	GUIDING THE ADJUSTMENT OF WORK CONSTRUCTION COST ESTIMATES
43	Cir03_2010_TT-BKH_E.doc	E	DETAILING DOSSIERS OF INVITATION FOR CONSTRUCTION AND INSTALLATION PREQUALIFICATION
44	Cir04_2010_TT-BKH_E.doc	E	DETAILING DOSSIERS OF REQUIREMENTS ON APPOINTMENT OF CONSTRUCTION AND INSTALLATION CONTRACTORS
45	Cir05_2004_TT-BXD_E.doc	E	PROVIDING GUIDANCE ON PROCEDURES FOR, AND MANAGEMENT OF, THE GRANT OF CONTRACTING LICENSES TO FOREIGN CONTRACTORS OPERATING IN THE CONSTRUCTION DOMAIN IN VIETNAM
46	Cir05_2004_TT-BXD_E_2.doc	E	PROVIDING GUIDANCE ON PROCEDURES FOR, AND MANAGEMENT OF, THE GRANT OF CONTRACTING LICENSES TO FOREIGN CONTRACTORS OPERATING IN THE CONSTRUCTION DOMAIN IN VIETNAM
47	Cir05_2007_TT-BXD_E.doc	E	GUIDING THE FORMULATION AND MANAGEMENT OF WORK CONSTRUCTION INVESTMENT EXPENDITURES
48	Cir06_2006_TT-BXD_E.doc	E	GUIDING GEO-TECHNICAL SURVEYS IN SERVICE OF SELECTION OF CONSTRUCTION LOCATIONS AND DESIGNING OF WORKS
49	Cir06_2007_TT-BXD_E.doc	E	PROVIDING GUIDANCE ON CONTRACTS IN CONSTRUCTION ACTIVITIES
50	Cir06_2010_TT-BKH_E.doc	E	DETAILING THE MAKING OF CONSULTANCY SERVICE BIDDING DOSSIERS
51	Cir07_2006_TT-BXD_E.doc	E	GUIDING THE ADJUSTMENT OF COST ESTIMATES OF CONSTRUCTION WORKS
52	Cir07_2008_TT-BXD_E.doc	E	GUIDING THE ELABORATION, EVALUATION, APPROVAL AND MANAGEMENT OF CONSTRUCTION PLANNINGS
53	Cir08_2006_TT-BXD_E.doc	E	GUIDING THE MAINTENANCE OF CONSTRUCTION WORKS
54	Cir09_2010_TT-BKH_E.doc	E	DETAILING THE MAKING OF REPORTS ON EVALUATION OF BID DOSSIERS APPLICABLE TO PROCUREMENT AND CONSTRUCTION AND INSTALLATION BID PACKAGES
55	Cir01_2010_TT-BKH_V_2.doc		

56	Cir10_2008_TT-BXD_E.doc	E	GUIDING THE APPRAISAL AND RECOGNITION OF MODEL NEW URBAN CENTERS
57	Cir11_2010_TT-BKH_E.doc	E	DETAILING COMPETITIVE OFFERING
59	Cir121_2000_TT-BTC_E.doc	E	GUIDING THE IMPLEMENTATION OF BIDDING FOR PROCUREMENT OF UTENSILS, MATERIALS, EQUIPMENT AND WORKING FACILITIES FOR STATE AGENCIES, ARMED FORCES, MASS ORGANIZATIONS AND STATE ENTERPRISES USING CAPITAL FROM THE STATE BUDGET SOURCES
60	Cir12_2008_TT-BXD_E.doc	E	GUIDING THE FORMULATION AND MANAGEMENT OF CONSTRUCTION SURVEY EXPENSES
61	Cir12_2009_TT-BXD_E.doc	E	DETAIL GUIDELINES ON THE ISSUANCE OF CONSTRUCTION PRACTICE CERTIFICATES
62	Cir16_2008_TT-BXD_E.doc	E	GUIDING THE INSPECTION AND CERTIFICATION OF FULL SATISFACTION OF FORCE-BEARING SAFETY CONDITIONS AND THE CERTIFICATION OF QUALITY STANDARD CONFORMITY OF CONSTRUCTIONS
63	Cir16_2008_TT-BXD_V.doc	E	Hướng dẫn kiểm tra, chứng nhận đủ điều kiện đảm bảo an toàn chịu lực và chứng nhận sự phù hợp về chất lượng công trình xây dựng
64	Cir17_2010_TT-BKH_E.doc	E	PROVIDING IN DETAIL PILOT ONLINE BIDDING
65	Cir18_2010_TT-BXD_E.doc	E	ON APPLICATION OF NATIONAL TECHNICAL CODES, NATIONAL STANDARD, BASIC STANDARDS AND FOREIGN CONSTRUCTION STANDARDS FOR CONSTRUCTION ACTIVITIES IN VIETNAM
66	Cir22_2009_TT-BXD_E.doc	E	DETAIL REGULATION ON THE CAPACITY IN CONSTRUCTION ACTIVITY
67	Cir25_2009_TT-BXD_E.doc	E	GUIDANCE ON PROFESSIONAL TRAINING OF CONSTRUCTION INVESTMENT PROJECT MANAGEMENT AND CONSTRUCTION SUPERVISION
68	Cir27_2007_TT-BTC_revised.E.doc	E	GUIDING THE MANAGEMENT AND PAYMENT OF INVESTMENT CAPITAL AND NON-BUSINESS CAPITAL OF INVESTMENT BELONGING TO THE STATE BUDGET CAPITAL SOURCE
69	Cir27_2009_TT-BXD_E.doc	E	GUIDING A NUMBER OF PROVISIONS ON QUALITY MANAGEMENT OF CONSTRUCTION WORKS
70	Cir33_2009_TT.BXD_E.doc	E	PROMULGATE NATIONAL TECHNICAL CODE: CLASSIFICATION, GRADING OF CIVIL WORKS; INDUSTRIAL WORKS; URBAN TECHNICAL INFRASTRUCTURE
71	Cir40_2009_TT-BXD_E.doc	E	ON APPLICATION OF FOREIGN CONSTRUCTION STANDARDS TO CONSTRUCTION ACTIVITIES IN VIETNAM
72	JointCir18_2005_TTLT-BXD-TTCP_E.doc	E	GUIDING A NUMBER OF PROVISIONS ON CONSTRUCTION INSPECTION
73	JointCir20_2008_TTLT-BXD-BNV_E.doc	E	GUIDING THE FUNCTIONS, TASKS, POWERS AND ORGANIZATIONAL STRUCTURE OF SPECIALIZED BODIES BELONGING TO THE PROVINCIAL LEVEL PEOPLE'S COMMITTEE, THE DISTRICT LEVEL PEOPLE'S COMMITTEE AND TASKS AS WELL AS POWERS OF THE COMMUNE LEVEL PEOPLE'S COMMITTEE IN THE FIELDS OF STATE MANAGEMENT OF THE CONSTRUCTION INDUSTRY
74	Cir05_2010_TT-BKH_E.doc	E	DETAILING THE MAKING OF GOODS PROCUREMENT BIDDING DOSSIERS



75	Cir06_2010_TT-BKH_E.doc	E	DETAILING THE MAKING OF CONSULTANCY SERVICE BIDDING DOSSIERS
77	Cir09_2010_TT-BKH_E.doc	E	DETAILING THE MAKING OF REPORTS ON EVALUATION OF BID DOSSIERS APPLICABLE TO PROCUREMENT AND CONSTRUCTION AND INSTALLATION BID PACKAGES
78	Decs02_2008_QD-BXD_E.doc	E	PROMULGATING THE REGULATION ON MANAGEMENT OF INFORMATION ON CAPABILITIES OF ORGANIZATIONS ENGAGED IN CONSTRUCTION ACTIVITIES THROUGH THE CONSTRUCTION MINISTRYS WEBSITE
80	Decs1071_2009_QD-BXD_CQM-update_E.doc	E	ON THE SUPPLEMENTATION OF TASKS OF VIETNAM CENTER FOR TECHNOLOGY OF CONSTRUCTION QUALITY MANAGEMENT (CQM)
81	Decs10_2007_QD-TTg_E_Part FH.doc	E	PROMULGATING THE ECONOMIC BRANCH SYSTEM OF VIETNAM
82	Decs10_2008_QD-BXD_E.pdf	E	REGARDING THE PROMULGATION OF CAPABILITY CRITERIA FOR CONTRACTOR UNDERTAKING WORKS, WORK ITEMS OR CIVIL WORKS WITH SPECIAL REQUIREMENTS
83	Decs131_2007_QD-TTg_E.doc	E	PROMULGATING THE REGULATION ON HIRING OF FOREIGN CONSULTANTS IN CONSTRUCTION ACTIVITIES IN VIETNAM
84	Decs14_2000_QD-BXD_E.pdf	E	PROMULGATING INVESTMENT AND CONSTRUCTION CONSULTANCY EXPENSE NORMS
85	Decs21_2004_QD-UBND_CIC of Da Nang_E.doc	E	ON THE ESTABLISHMENT OF CONSTRUCTION INSPECTION CENTER OF DA NANG CITY
86	Decs22_2007_QD-BXD_E.pdf	E	FOR PROMULGATING THE TCXDVN 104:2007 "URBAN ROADS -SPECIFICATION FOR DESIGN"
87	Decs22_2008_QD-BGTVT_E.doc	E	PROMULGATING THE REGULATION ON SUPERVISION CONSULTANCY ON THE CONSTRUCTION OF TRANSPORT WORKS
88	Decs249_2006_QD-BXD_CQM_E.doc	E	ON THE ESTABLISHMENT OF VIETNAM CENTER FOR TECHNOLOGY OF CONSTRUCTION QUALITY MANAGEMENT
89	Decs34_2008_QD-BGTVT_E.pdf	E	ROLES, DUTIES, AUTHORITIES AND ORGANIZATIONS OF TCQM
90	Decs463_QD-BXD_CAMD_E.doc	E	ON THE ESTABLISHMENT AND REGULATIONS ON FUNCTION, TASKS, AUTHORITY AND ORGANIZATIONAL STRUCTURE OF CAMD
91	Decs02_2008_QD_TTg_E.doc	E	PROMULGATING THE REGULATION ON MANAGEMENT OF CONSTRUCTION INVESTMENT PROJECTS OF FOREIGN-BASED VIETNAMESE REPRESENTATIVE MISSIONS AND OTHER AGENCIES
82	Decs493_2009_QD-BGTVT_E.pdf	E	ON APPROVAL OF STANDARDS TO BE APPLIED FOR THE CONSTRUCTION PROJECTS OF CONNECTION ROAD FROM NHAT TAN BRIDGE TO NOI BAI AIRPORT
93	Decs59_2007_QD-BGTVT_E.pdf	E	PROMULGATING THE REGULATION ON MANAGEMENT DECENTRALIZATION AND AUTHORIZATION OF STATE BUDGET-FUNDED WORK CONSTRUCTION INVESTMENT PROJECTS MANAGED BY MINISTRY OF TRANSPORT

94	Decs6541_QD-UBND_Hanoi_E.doc	E	ABOUT REGULATING THE POSITION, FUNCTIONS, RESPONSIBILITIES, POWERS AND ORGANIZATIONAL STRUCTURE OF HANOI'S DEPARTMENT OF CONSTRUCTION
95	Decs68_2006_QD-TTg_E.pdf	E	ON THE FOUNDING OF THE STATE COUNCIL OF ACCEPTANCE FOR CONSTRUCTION WORKS
96	Decs87_2004_QD-TTg_E.doc	E	PROMULGATING THE REGULATION ON MANAGEMENT OF OPERATIONS OF FOREIGN CONTRACTORS IN THE CONSTRUCTION DOMAIN IN VIETNAM
97	Decs92_QD-BXD_LegislationPlan2010_E.doc	E	ON PROMULGATING OF THE PROGRAM OF LEGISLATION AND PROPOSALS OF MOC IN THE YEAR OF 2010
98	Decs988_QD-BXD_SACQI_E.doc	E	ON REGULATING THE FUNCTION, TASKS, AUTHORITIES AND ORGANIZATIONAL STRUCTURE OF STATE AUTHORITY OF CONSTRUCTION QUALITY INSPECTION (SACQI)
99	Decs9_2005_QD-BXD_E.pdf	E	PROMULGATING THE REGULATION ON APPLICATION OF FOREIGN CONSTRUCTION STANDARDS TO CONSTRUCTION ACTIVITIES IN VIETNAM
100	Decs22_2008_QD-BGTVT_E.pdf	E	PROMULGATING THE REGULATION ON SUPERVISION CONSULTANCY ON THE CONSTRUCTION OF TRANSPORT WORKS
101	Decs64_2007_QD-BGTVT_E.pdf	E	PROMULGATING THE REGULATION ON ASSIGNMENT AND AUTHORIZATION OF TASKS TO PROJECT MANAGEMENT UNITS IN THE CONSTRUCTION INVESTMENT MANAGEMENT OF PROJECTS OF WHICH THE INVESTOR IS THE MINISTRY OF TRANSPORT
102	Dec01_2008_ND-CP_MOA_V.doc	V	Quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ Nông nghiệp và Phát triển nông thôn
103	Dec12_2009_ND-CP_V.doc	V	Về quản lý dự án đầu tư xây dựng công trình.
104	Dec178_2007_ND-CP_V.doc	V	Quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ, Cơ quan ngang Bộ
105	Dec17_2008_ND-CP_V.doc	V	Quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ Xây dựng
106	Dec188_2007_ND-CP_MOH_V.doc	V	Quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ Y tế
107	Dec189_2007_ND-CP_MOIT_V.doc	V	Quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ Công thương
108	Dec209_2004_ND-CP_V.doc	V	Về quản lý chất lượng công trình xây dựng
109	Dec23_2009_ND-CP_V.doc	V	Về xử phạt hành chính trong hoạt động xây dựng; Kinh doanh bất động sản; Khai thác, sản xuất, kinh doanh vật liệu xây dựng; Quản lý công trình hạ tầng kỹ thuật; Quản lý phát triển nhà và công sở.
110	Dec43_2010_ND-CP_V.doc	V	ON ENTERPRISE REGISTRATION
111	Dec48_2010_ND-CP_V.doc	V	Về Hợp đồng trong hoạt động xây dựng
112	Dec49_2008_ND-CP_V.pdf	V	Sửa đổi và bổ sung một số điều của Nghị định 209/2004/ND-CP ngày 26 tháng 12 năm 2004 của Chính phủ về Quản lý chất lượng công trình xây dựng
113	Dec51_2008_ND-CP_MOT_V.doc	V	Quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ Giao thông vận tải
114	Dec85_2003_ND-CP_MOET_V.doc	V	Quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ Giáo dục và Đào tạo

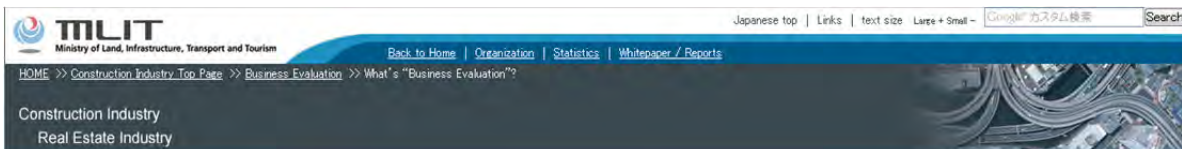
115	Dec85_2009_ND-CP_V.doc	V	Hướng dẫn thi hành Luật Đấu thầu và lựa chọn nhà thầu xây dựng theo Luật Xây dựng
116	Dec185_2007_ND-CP_MOCST_V.pdf	V	Quy định chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của Bộ Văn hóa, Thể thao và du lịch
117	Cir01_2010_TT-BKH_V.doc	V	Quy định chi tiết lập Hồ sơ mời thầu xây lắp
118	Cir02_2009_TT-BKH_V.doc	V	Hướng dẫn lập kế hoạch đấu thầu
119	Cir03_2010_TT-BKH_V.pdf	V	Quy định chi tiết Lập hồ sơ mời sơ tuyển xây lắp
120	Cir04_2010_TT-BKH_V.DOC	V	Quy định chi tiết lập Hồ sơ yêu cầu chi định thầu xây lắp
121	Cir04_2010_TT-BXD_V.doc	V	Hướng dẫn lập và quản lý chi phí đầu tư xây dựng công trình
122	Cir04_2010_TT-BXD_V_2.doc	V	Hướng dẫn lập và quản lý chi phí đầu tư xây dựng công trình
123	Cir05_2004_TT-BXD_V.DOC	V	Hướng dẫn thủ tục và quản lý việc cấp giấy phép thầu cho nhà thầu nước ngoài hoạt động trong lĩnh vực xây dựng tại Việt Nam
124	Cir07_2010_TT-BKH_V.DOC	V	Hướng dẫn thi hành Nghị định số 93/2009/NĐ-CP
125	Cir10_2010_TT-BKH_V.doc	V	Quy định về đào tạo, bồi dưỡng nghiệp vụ đấu thầu
126	Cir11_2010_TT-BKH_V.doc	V	Quy định chi tiết về chào hàng cạnh tranh
127	Cir12_2009_TT-BXD_V.doc	V	Hướng dẫn chi tiết về cấp chứng chỉ hành nghề hoạt động xây dựng
128	Cir17_2010_TT-BKH_V.doc	V	Quy định chi tiết thí điểm đấu thầu qua mạng
129	Cir17_2010_TT-BKH_V.docx	V	Quy định chi tiết thí điểm đấu thầu qua mạng
130	Cir18_2010_TT-BXD_V.doc	V	Quy định việc áp dụng quy chuẩn, tiêu chuẩn trong hoạt động xây dựng
131	Cir22_2009_TT-BXD_V.doc	V	Quy định chi tiết về điều kiện năng lực trong hoạt động xây dựng
132	Cir25_2009_TT-BXD_V.doc	V	Hướng dẫn về bồi dưỡng nghiệp vụ quản lý dự án đầu tư xây dựng công trình và giám sát thi công xây dựng công trình
133	Cir27_2007_TT-BTC_revised.V.doc	V	Hướng dẫn về quản lý, thanh toán vốn đầu tư và vốn sự nghiệp có tính chất đầu tư thuộc nguồn vốn ngân sách nhà nước
134	Cir27_2009_TT-BXD_V.doc	V	Hướng dẫn một số nội dung về Quản lý chất lượng công trình xây dựng
135	Cir33_2009_TT-BXD_V.doc	V	Ban hành Quy chuẩn kỹ thuật quốc gia Phân loại, phân cấp công trình xây dựng dân dụng, công nghiệp và hạ tầng kỹ thuật đô thị
136	JointCir18_2005_TTLT-BXD-TTCP_V.doc	V	Hướng dẫn một số nội dung về thanh tra xây dựng
137	JointCir20_2008_TTLT-BXD-BNV_V.doc	V	Hướng dẫn chức năng, nhiệm vụ, quyền hạn và cơ cấu tổ chức của cơ quan chuyên môn thuộc Ủy ban nhân dân cấp tỉnh, cấp huyện và nhiệm vụ, quyền hạn của Ủy ban nhân dân cấp xã về các lĩnh vực quản lý nhà nước thuộc ngành xây dựng
138	Cir05_2010_TT-BKH_V.pdf	V	Quy định chi tiết lập Hồ sơ mời thầu mua sắm hàng hóa
139	Cir06_2010_TT-BKH_V.pdf	V	Quy định chi tiết lập Hồ sơ mời thầu dịch vụ tư vấn
140	Cir08_2010_TT-BKH_V.pdf	V	Quy định chi tiết lập Báo cáo thẩm định đấu thầu
141	Cir09_2010_TT-BKH_V.pdf	V	Quy định chi tiết lập Báo cáo đánh giá Hồ sơ dự thầu đối với gói thầu mua sắm hàng hóa, xây lắp

142	Decs988_QD_BXD_SACQI_E	V	ON REGULATING THE FUNCTION, TASKS, AUTHORITIES AND ORGANIZATIONAL STRUCTURE OF STATE AUTHORITY OF CONSTRUCTION QUALITY INSPECTION (SACQI)
143	Decs10_2007_QD-TTg_V.doc	V	Ban hành hệ thống ngành kinh tế của Việt Nam
144	Decs21_2004_QD-UBND_CIC of Da Nang_V.doc	V	Về việc thành lập Trung tâm Kiểm định chất lượng xây dựng Đà Nẵng
145	Decs22_2008_QD-BGTVT_V.doc	V	Ban hành Quy chế tư vấn giám sát thi công xây dựng công trình trong ngành Giao thông vận tải
146	Decs35_2009_QD-UBND_Quang Tri Capital Allocation_V.DOC	V	Về việc Giao vốn kế hoạch cơ bản tập trung
147	Decs39_2005_QD-TTg_V.doc	V	Về việc Hướng dẫn thi hành Điều 121 của Luật Xây dựng
148	Decs463_QD-BXD_CAMD_V.doc	V	Về việc thành lập và quy định chức năng, nhiệm vụ, quyền hạn, cơ cấu tổ chức của Vụ Quản lý hoạt động xây dựng
149	Decs68_2006_QD-TTg_V.doc	V	Về việc thành lập Hội đồng nghiệm thu Nhà nước các công trình xây dựng

**APPENDIX 7-1-1**

**BUSINESS EVALUATION FOR  
CONTRACTOR REGISTRATION  
SYSTEM IN JAPAN**





## What's "Business Evaluation"?

Business Evaluation is a mandatory evaluation for construction companies who intend to take part in a tender for public construction works.

Contracting organizations for public construction works conduct qualification screening to construction companies which is performed upon Business Evaluation and a subjective evaluation each contracting organization formulates.

Business Evaluation evaluates construction companies in terms of the management scale, technical capability and social responsibility, which is analyzed by designated organizations for business condition.

Ministry of Land, Infrastructure, Transport and  
Tourism  
2-1-3 Kasumigaseki, Chiyoda-ku, Tokyo  
100-8918  
2-1-2 Kasumigaseki, Chiyoda-ku, Tokyo  
100-8918 (ANNEX)

Tel: +81-3-5253-8111

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## **Application Forms for Business Evaluation**

- ♦ Management Scale
- ♦ Technical Capability
- ♦ Social Responsibility



➤ **Management Scale**

様式第二十五号の八（第十九条の三関係）

**Application for Evaluation of Management Scale**

（用紙A4）

**経営状況分析申請書**

建設業法第27条の24第2項の規定により、経営に関する客観的事項の審査のうち経営状況の分析の申請をします。  
この申請書及び添付書類の記載事項は、事実と相違ありません。

登録経営状況分析機関代表者

平成 年 月 日

**To Representative of Evaluation  
Organization (designated by MLIT)**

**Applicant Name & Seal**

殿

申請者

印

<b><u>Date of Application</u></b>	平成 年 月 日
<b><u>Business Permit Number</u></b>	大臣 知事 コード 国土交通大臣 知事 許可 ( 般 特 ) 第 号 許 可 平成 年 月 日
<b><u>Business Permit Number At Last Application</u></b>	大臣 知事 コード 国土交通大臣 知事 許可 ( 般 特 ) 第 号 許 可 平成 年 月 日
<b><u>Date of Evaluation</u></b>	平成 年 月 日
<b><u>Fiscal Year for Evaluation</u></b>	期間 自 平成 年 月 日 ~ 至平成 年 月 日 処理の区分 ① ②
<b><u>Fiscal Year for Evaluation at Last Application</u></b>	期間 自 平成 年 月 日 ~ 至平成 年 月 日 処理の区分 ① ②
<b><u>Fiscal Year for Evaluation at Second Last Application</u></b>	期間 自 平成 年 月 日 ~ 至平成 年 月 日 処理の区分 ① ②
<b><u>Company or Individual</u></b>	___ ( 1. 法人 2. 個人 )
<b><u>Renew or First time</u></b>	___ ( 1. 有 2. 無 )
<b><u>Sole or Consolidated Account</u></b>	___ ( 1. 単独決算 2. 連結決算 )
<b><u>Name of Company or Individual</u></b>	商号又は名称のフリガナ
<b><u>Name of Representative in Company or Individual</u></b>	
<b><u>Business Address</u></b>	
<b><u>Telephone Number</u></b>	
<b><u>Depreciation Expense in this Fiscal Year</u></b>	(千円)
<b><u>Depreciation Expense in Last Fiscal Year</u></b>	(千円)
(備考欄)	
連絡先	
所属等	氏名
	電話番号
	ファックス番号

◇ Audited Financial Statement shall be attached.

➤ Technical Capability

様式第二十五号の十一（第十九条の七、第二十条、第二十一条の二関係）

(用紙A4)

**Application for Evaluation of Technical Capability**

2 0 0 0 1

**経営規模等評価申請書  
経営規模等評価再審査申立書  
総合評定値請求書**

平成 年 月 日

建設業法第27条の26第2項の規定により、経営規模等評価の申請をします。  
建設業法第27条の28の規定により、経営規模等評価の再審査の申立をします。  
建設業法第27条の29第1項の規定により、総合評定値の請求をします。

To Representative of Contracting Organization

地方整備局長  
北海道開発局長  
知事 殿

Applicant Name & Seal

申請者

印

行政庁側記入欄 項番 請求年月日 土木事務所コード 整理番号

Date of Application

Business Permit Number

Business Permit Number At Last Application

Date of Evaluation

Contents of Application

Classification of Applicant

Amount of Capital

Name of Company or Individual

Name of Representative in Company or Individual

Name of Representative in Company or Individual

Name of Representative in Company or Individual

Name of Representative in Company or Individual

Name of Representative in Company or Individual

Business Address

Business Address

Postal Code & Telephone Number

Permitted Field

Applied Field for Evaluation

Form with various input fields and checkboxes for permit numbers, dates, classification, capital, names, addresses, and evaluation fields.

<p><u>Amount of Net Worth</u></p>	<p>項番</p> <p>1 7 3 5 10 15</p> <p>(千円) (1. 基準決算) 2. 2期平均</p>	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">基準決算</td> <td style="width: 50%;">(千円)</td> </tr> <tr> <td>直前の審査基準日</td> <td>(千円)</td> </tr> </table>	基準決算	(千円)	直前の審査基準日	(千円)				
基準決算	(千円)									
直前の審査基準日	(千円)									
<p><u>Amount of Profit (average of two years)</u></p>	<p>1 8 3 5 10 (千円)</p> <p>利益額 (利払前税引前償却前利益) = 営業利益+減価償却実施額</p>	<p><b>Amount of Profit = Operating Income + Depreciation Expense</b></p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 50%;">審査対象事業年度</th> <th style="width: 50%;">審査対象事業年度の前審査対象事業年度</th> </tr> <tr> <td>営業利益 (千円)</td> <td>営業利益 (千円)</td> </tr> <tr> <td>減価償却実施額 (千円)</td> <td>減価償却実施額 (千円)</td> </tr> </table>	審査対象事業年度	審査対象事業年度の前審査対象事業年度	営業利益 (千円)	営業利益 (千円)	減価償却実施額 (千円)	減価償却実施額 (千円)		
審査対象事業年度	審査対象事業年度の前審査対象事業年度									
営業利益 (千円)	営業利益 (千円)									
減価償却実施額 (千円)	減価償却実施額 (千円)									
<p><u>Number of Technical Staff</u></p>	<p>1 9 3 5 (人)</p>	<p><u>Operating Income</u> <u>Depreciation Expense</u></p>								
<p><u>Name of Evaluation Organization for Management Scale</u></p>	<p>2 0 3 5</p>	<p>経営状況分析を受けた機関の名称</p>								
<p>工事種類別完成工事高、工事種類別元請完成工事高については別紙一による。 技術職員名簿については別紙二による。 その他の審査項目（社会性等）については別紙三による。</p> <p>経営規模等評価の再審査の申立を行う者については、次に記載すること。</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">審査結果の通知番号</td> <td style="width: 50%;">審査結果の通知の年月日</td> </tr> <tr> <td>第 号</td> <td>平成 年 月 日</td> </tr> <tr> <td>再審査を求める事項</td> <td>再審査を求める理由</td> </tr> <tr> <td style="height: 50px;"></td> <td></td> </tr> </table>			審査結果の通知番号	審査結果の通知の年月日	第 号	平成 年 月 日	再審査を求める事項	再審査を求める理由		
審査結果の通知番号	審査結果の通知の年月日									
第 号	平成 年 月 日									
再審査を求める事項	再審査を求める理由									
<p>連絡先</p> <p>所属等 _____ 氏名 _____ 電話番号 _____</p> <p>ファックス番号 _____</p>										

別紙一

(用紙A4)

2 0 0 0 2

**Total Amount of Projects Completed**  
**Total Amount of Projects Completed as Prime Contractor**

工事種類別完成工事高  
工事種類別元請完成工事高

項番 3 1	Fiscal Year for Evaluation at Last & Second Last Application 度 自 年 月 至 年 月 3 4 5 6 7 8 9 10	審査対象 Fiscal Year for Evaluation の区分 自 年 月 至 年 月 (1. 2年平均) 2. 3年平均 11 13 15 17 19				
<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="width: 50%;">審査対象事業年度の 前審査対象事業年度</td> <td style="width: 50%;">年 月～ 年 月</td> </tr> <tr> <td>審査対象事業年度の 前々審査対象事業年度</td> <td>年 月～ 年 月</td> </tr> </table>			審査対象事業年度の 前審査対象事業年度	年 月～ 年 月	審査対象事業年度の 前々審査対象事業年度	年 月～ 年 月
審査対象事業年度の 前審査対象事業年度	年 月～ 年 月					
審査対象事業年度の 前々審査対象事業年度	年 月～ 年 月					

Code of Selected Fields	Amount of Projects	Amount of Projects as Prime Contractor	Amount of Projects	Amount of Projects as Prime Contractor
3 2	6 10 15	16 20 25	26 30 35	36 40 45
工事の種類	完成工事高計算表	元請完成工事高計算表		
工事	審査対象事業年度の 前審査対象事業年度 審査対象事業年度の 前々審査対象事業年度	審査対象事業年度の 前審査対象事業年度 審査対象事業年度の 前々審査対象事業年度		
3 2	6 10 15	16 20 25	26 30 35	36 40 45
工事の種類	完成工事高計算表	元請完成工事高計算表		
工事	審査対象事業年度の 前審査対象事業年度 審査対象事業年度の 前々審査対象事業年度	審査対象事業年度の 前審査対象事業年度 審査対象事業年度の 前々審査対象事業年度		
3 2	6 10 15	16 20 25	26 30 35	36 40 45
工事の種類	完成工事高計算表	元請完成工事高計算表		
工事	審査対象事業年度の 前審査対象事業年度 審査対象事業年度の 前々審査対象事業年度	審査対象事業年度の 前審査対象事業年度 審査対象事業年度の 前々審査対象事業年度		
3 2	6 10 15	16 20 25	26 30 35	36 40 45
工事の種類	完成工事高計算表	元請完成工事高計算表		
工事	審査対象事業年度の 前審査対象事業年度 審査対象事業年度の 前々審査対象事業年度	審査対象事業年度の 前審査対象事業年度 審査対象事業年度の 前々審査対象事業年度		
3 3 その他	3 5 10	13 15 20	23 25 30	33 35 40
工事の種類	完成工事高計算表	元請完成工事高計算表		
その他 工事	審査対象事業年度の 前審査対象事業年度 審査対象事業年度の 前々審査対象事業年度	審査対象事業年度の 前審査対象事業年度 審査対象事業年度の 前々審査対象事業年度		
3 4 合計	3 5 10	13 15 20	23 25 30	33 35 40

契約後VEに係る完成工事高の評価の特例 ( 1. 有 2. 無 )

◇ Amount of projects completed shall be verified by submission of project lists in each field selected.

**List of Technical Staff**

技術職員名簿

頁 項番 3 5  
数 61 頁

通番	Name of Staff	Birthday of Staff	業口	有資格課		有資格課		業口	Certificate Number
				3	5	3	5		
1			6	2					
2			6	2					
3			6	2					
4			6	2					
5			6	2					
6			6	2					
7			6	2					
8			6	2					
9			6	2					
10			6	2					
11			6	2					
12			6	2					
13			6	2					
14			6	2					
15			6	2					
16			6	2					
17			6	2					
18			6	2					
19			6	2					
20			6	2					
21			6	2					
22			6	2					
23			6	2					
24			6	2					
25			6	2					
26			6	2					
27			6	2					
28			6	2					
29			6	2					
30			6	2					

◇ Certificates of staff qualification shall be attached.

➤ Social Responsibility

別紙三 (用紙A4)  
20004

***Other Evaluation Items (Sociality)***  
その他の審査項目（社会性等）

---

**労働福祉の状況** *Welfares*

	項番			
<u>Unemployment Insurance</u>	4	1	<input type="text"/>	[1. 有、2. 無、3. 適用除外]
<u>Health Insurance</u>	4	2	<input type="text"/>	[1. 有、2. 無、3. 適用除外]
<u>Welfare Annuity Insurance</u>	4	3	<input type="text"/>	[1. 有、2. 無]
<u>Retirement Fund Association</u>	4	4	<input type="text"/>	[1. 有、2. 無]
<u>Retirement / Pension System</u>	4	5	<input type="text"/>	[1. 有、2. 無]
<u>Labor Accident Insurance</u>				

---

**建設業の営業年数** *Operation Years in Construction*

営業年数

初めて許可（登録）を受けた年月日	休業等期間	備考（組織変更等）
昭和 年 月 日 平成 年 月 日	年 月 日	

---

**防災活動への貢献の状況** *Contribution to Prevention of Accidents*

防災協定の締結の有無

---

**法令遵守の状況**

営業停止処分の有無 <span style="float: right;"><i>Legality</i></span>	4	8	<input type="text"/>	[1. 有、2. 無]
<u>Business Suspension</u>	4	9	<input type="text"/>	[1. 有、2. 無]

*Administrative Directions*

**建設業の経理の状況**

監査の受審状況 <span style="float: right;"><i>Account</i></span>	5	0	<input type="text"/>	[1. 会計監査人の設置、2. 会計参与の設置、 3. 経理処理の適正を確認した旨の書類の提出、4. 無]
公認会計士等の数	5	1	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	(人)
二級登録経理試験合格者の数	5	2	<input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>	(人)

---

**研究開発の状況**

研究開発費（2期平均）  (千円)

***Research & Development (R&D)***

	事業年度	前審査対象事業年度
<u>Expense for R &amp; D</u>	<input style="width: 50px;" type="text"/> (千円)	<input style="width: 50px;" type="text"/> (千円)

✧ Papers like application to unemployment insurance shall be attached.



**APPENDIX 7-1-2**  
**CONTRACTOR REGISTRATION**  
**SYSTEM IN SINGAPORE**



## **Contractor Registration System in Singapore**

- ◆ BCA Registered Contractor Terms of Registration
- ◆ Specific Requirements for Construction Workhead (CW)
- ◆ Application Form





UNITED NATIONS PUBLIC SERVICE AWARD

# CONTRACTORS REGISTRATION SYSTEM

## BCA REGISTERED CONTRACTOR TERMS OF REGISTRATION

DEC 2012 EDITION

5 MAXWELL ROAD #02-00  
TOWER BLOCK MND COMPLEX  
SINGAPORE 069110

Toll-free: 1800-dial bca (3425 222) press 2 after connecting

Fax: 6 324 0346

E-mail: [bca\\_enquiry@bca.gov.sg](mailto:bca_enquiry@bca.gov.sg)

Website: [www.bca.gov.sg](http://www.bca.gov.sg)

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<u>TERMS OF REGISTRATION</u>	
Functions & Scope of the Contractors Registration System	2
Application Details	2
Registration Requisites	3
Conditions of Registration	5

# TERMS OF REGISTRATION

## FUNCTIONS & SCOPE OF THE CONTRACTORS REGISTRATION SYSTEM (CRS)

### **Functions of CRS**

The CRS is administered by the Building and Construction Authority to serve the procurement needs of government departments, statutory bodies and other public sector organizations including first level sub-contractors involved in government projects. Except for Regulatory Workheads (RW), CRS functions as an administrative body only for the public sector procurement. As such, business entities which are not registered with BCA are not precluded from conducting business as contractors or suppliers outside the public sector.

### **Scope of Registration**

There are seven major registration categories, namely **Construction Workhead (CW)**, **Construction-Related Workhead (CR)**, **Mechanical & Electrical Workhead (ME)**, **Maintenance Workhead (MW)**, **Supply Head (SY)**, **Trade Head (TR)** and **Regulatory Workhead (RW)**. There are 7 financial grades for CW, 6 financial grades for CR, ME, MW, SY and single grading for CR01, CR03, CR15, CR17, CR18, TR and RW. Please refer to respective Specific Registration Requirements.

## APPLICATION DETAILS

### **Application Procedure**

The Specific Registration Requirements specify in detail the registration requisites. Applicants who wish to apply for registration must read these Terms of Registration and the Specific Registration Requirements carefully before submitting the application form which can be found from this link <http://www.bca.gov.sg/Professionals/Procurement/procurement.html>. In submitting the application form, Applicants shall be deemed to have agreed to these Terms of Registration and the Specific Registration Requirements.

Applicants are encouraged to submit CRS applications online at this link <http://www.bca.gov.sg/ecrcs/> in order to avoid long queues if submitting manually over the CRS counter. The submissions should include every item in the checklist in the correct sequence. It is the Applicants' responsibility to ensure completeness of the submissions, including the provision of a valid email address. Incomplete or uncompiled submissions may be disregarded. Processing will commence only after the submissions are found to be in order.

### **Processing Fees**

The processing fees for all applications are quoted on the respective application forms. Payment can only be accepted through GIRO, NETS, VISA or Cashcard for all forms of transaction. The processing fee is non-refundable irrespective of the application result. BCA may adjust the processing fees without giving any prior notice whatsoever. All fees quoted are inclusive of GST.

### **Upgrading**

Registered contractors/suppliers who meet the requirements for a higher grade may apply for upgrading to that higher grade. Applicants may apply for upgrading under one or more workheads at any one time.

### **References**

In submitting the application form, the Applicant will be taken to have authorised BCA to make all necessary enquiries relating to the Applicant. In the course of processing the applications, BCA may wish to obtain further information from the Applicant's references (auditors, bankers, clients/consultants who supervised the works of the Applicant) either by requesting the presence of such persons or sending officers from BCA to the Applicant's head office (local or overseas) for further verification. All flight/transport, accommodation (overseas), incidental and service charges, shall be borne by the Applicants.

### **Processing Time**

Under normal circumstances, if the submissions are complete and in order, it is expected that the Applicants will be informed of the outcome within 2 weeks (except for B2-A1, L5-L6 and applications that require overseas verification). Applicants are required to forward references directly from the clients/consultants of the projects. The references should be submitted together with the application form to BCA in an envelope marked "Strictly Confidential". In the event that no reference is forwarded, BCA will complete the processing based only on the available information.

Firms are requested to apply for renewals one month before the expiry date of their registration. Processing is on first-come-first-serve basis. Late applications cannot be expedited.

### **Outcome of Application**

Upon successful application, the Applicant's name, workhead, grade and such other details deemed appropriate by BCA will be published in the CRS webpage at [www.bca.gov.sg](http://www.bca.gov.sg). Successful Applicants may also wish to purchase a copy of the Certificate of Registration (optional) at our counter.

## REGISTRATION REQUISITES

### **Track Record and Performance**

1. Applicants are expected to meet the Specific Registration Requirements for each workhead. In the event of any inconsistency between these Terms of Registration and the Specific Registration Requirements, the Specific Registration Requirements shall prevail.
2. Applicants are expected to have, in the last three years, completed projects relevant to the particular workhead. The total value of these projects should be at least equal to the value assigned to the grade applied for (see the Specific Registration Requirements) and reflected under the column 'Track Record'. The Applicants must forward the relevant letters of award, completion, latest payment certificates and client's endorsement to substantiate to BCA's satisfaction of these track records.
3. Main contracts and NSC should generally form the substantial portion of the track records. Please refer to the Specific Registration Requirements for details. Trade Head require endorsement from two main contractors registered with BCA.
4. Applicants may use the same project to apply for more than one workhead provided that the project value is apportioned to the relevant types of works under the respective workheads.
5. For applicants applying for registration as supply contractors;
  - (a) Applicants are expected to have maintained a business or other commercial undertaking for the trading, supply, and/or installation of the respective type of materials, over the last three years, and having an aggregate value equal to the value assigned to the grade applied for (see SY Specific Registration Requirements) and reflected under the column 'Track Record'.
  - (b) Where a particular firm has insufficient track record, BCA may permit the firm's entry to the financial grade applied if they have agency rights and their paid-up capital and net worth meet the-concessionary rules in Table B3 of the SY Specific Registration Requirements.
  - (c) In addition, Applicants are expected to give documentary evidence that they are able to supply such items. The documentary evidence together with the financial statement (for the most recent 1-year) and brochures should clearly illustrate the Applicants' dealership, distribution or sole agency rights.
  - (d) The applications are expected to be accompanied by letters from the principals.
6. In addition to the requirements on aggregate project values, Applicants are expected to have a consistently good performance record. Those with poor performance history may be refused registration. Firms applying for upgrading to higher grades are expected to have achieved a high standard of performance in the projects undertaken by them.
7. A firm applying for renewal of its registration status is expected to prove that it is still active in the line of business. It is expected to produce evidence to show to BCA's satisfaction that it has undertaken relevant works or supplies during the preceding three years (five years for CW01 and CW02).

### **Financial Capacity**

1. Applicants should satisfy BCA that they have sufficient financial resources to meet the financial commitments for the respective workheads and grades.
2. Applicants are expected to submit their audited financial report or accounts (not more than 12 months old) for verification and processing. Alternatively, applicants applying for CR01, CR03, CR15, CR17, CR18, TR, RW01, C3 or L1 grades may submit their management accounts (not more than 12 months old). Outdated reports or documents will not be accepted. All financial reports or management accounts have to be written in English.
3. Grades A1 to B2 firms are required to submit their audited accounts (not more than 4 months old for SGX listed companies and not more than 6 months old for non-SGX listed companies) annually and meet the financial requirement in order to retain in their respective grades. A1 to B2 firms are also required to submit the certified value-added productivity (VAP) figure on an annual basis (based on their latest financial statements available). The details on computation of VAP figure and the required data items can be found on BCA's website: <http://www.bca.gov.sg/vacalculator/>
4. Firms under a scheme of arrangement, judicial management or financial embarrassment (bankrupt, liquidation, wind-up, negative press reports, etc.) will not be considered for registration and (if registered) may be de-registered.



## REGISTRATION REQUISITES (CONT'D)

### **Personnel Resources**

1. Applicants should satisfy BCA that they have the necessary full-time personnel resources stationed in Singapore to undertake the work corresponding to the registration head applied for.
2. Consultants or part-time employees cannot be considered as personnel resources for registration purposes.
3. The following should be submitted during application for verification:

<u>Personnel/Qualification</u>	<u>To Submit copies of</u>
Full-time Singaporean/PR employees	(i) CPF contribution statement (Form 90) (ii) NRIC (iii) Educational certificates, licenses (in English)
Full-time foreign technical personnel	(i) Employment Pass (ii) Educational certificates, licenses (in English) (iii) In-principle letter of approval from Ministry of Manpower (MOM)

4. The minimum number of personnel required in A1 and A2 firms must comply with the Continuing Education & Training (CET) requirement to obtain a minimum of 14 hours of structured training annually over a 12-month period from 1 Nov to 31 Oct (of the next calendar year). The declaration form should reach BCA by 30 Nov each year for verification. More information on the CET requirement is available from the BCA's website.

5. Companies registered in entry grades of CW, CR, ME, MW, including single grade of CR01, CR03, CR15, CR17 and CR18, and are unable to meet the track record requirement, an interview with the technical personnel will be conducted. For new application, the technical personnel are required to come down to BCA for a short interview before the application can be accepted. For existing registered companies, the technical personnel (lodged with BCA in your last submission) are required to come down for a short interview. The interview will be conducted annually until your company is able to achieve the track record requirement. An appointment date for the interview will be arranged with your technical personnel. During the interview, we will require the technical personnel to furnish the following documents for our inspection:

- i) Original Identification Documents (e.g. NRIC, Employment Pass, S-Pass)
- ii) Latest CPF statement for the past three months (for existing personnel with NRIC)
- iii) Letter of employment (for new personnel employed less than three months from date of submission to BCA)

All contractors are to note that its technical personnel submitted for registration must be full-time employed and cannot be employed by more than one registered company even if the companies are related (e.g. subsidiary, parent/holding company).

### **Company Status with the Accounting & Corporate Regulatory Authority (ACRA)**

1. All firms must be registered with the ACRA at the time of application.
2. Firms seeking to register for grade above C3 or L1 are required to be companies (duly incorporated) under the laws of Singapore or under the laws of a foreign jurisdiction which are accepted by BCA to produce a substantially similar legal effect.
3. Firms of sole proprietor, partnership or limited partnership will only be registered or renewed at C3, L1 or single grade.
4. All firms shall furnish a copy of the latest ACRA printout.

## CONDITIONS OF REGISTRATION

### **Authority of BCA**

1. BCA reserves the right to review and downgrade the registration status of the registered firms from time to time.
2. BCA may inter alia take the following courses of action if registered firms fail to continuously meet the requirements set out under these Terms of Registration or the Specific Registration Requirements:
  - (a) Downgrading of registration grades
  - (b) De-registration or suspension from the Contractors Registration System.
3. BCA is not bound to accept any application notwithstanding that the Applicant may have met the requirements set out under these Terms of Registration or the Specific Registration Requirements. In the event that any Applicant seeking to be registered under any grade or Workhead is unable to meet the requirements of the grade or Workhead, BCA may nevertheless on a discretionary basis allow the Applicant to be so registered. Without prejudice to generality of the aforesaid, in the event that a firm has an abundance of relevant track records or experience but lack sufficient local track record or experience, BCA may at its discretion allow the registration applied for if the firm is endorsed by the respective government agency.
4. BCA is not bound to assign any reasons for rejecting or accepting applications or for downgrading/suspending a registered contractor or de-registering a firm from CRS.
5. Firms and its directors that are debarred by the Ministry of Finance will be refused registration for all lines of business and for the duration stated in the debarment order. New firms formed by debarred directors will also be refused registration. Debarred firms and/or new firms formed by directors of debarred firms may only apply for registration after their debarment period has lapsed.
6. BCA may publish information on projects handled by the registered contractors.

### **Update of Firms' Particulars**

1. A BCA registered contractor is required to advise BCA immediately of any changes in its management status, address (both mailing and email addresses) or any other pertinent particulars which may occur from time to time. Please ensure correct email address. All announcements and notifications will be informed through email ONLY.
2. It should be noted that registration status is accorded to the firm on the basis of the firm's particulars at the time of application and BCA reserves the right to revoke or modify the registration status in the event of any development or change in the firm's particulars which, in the opinion of BCA, renders the firm unsuitable to be accorded the current registration status.
3. Notification of change of firm's particulars should be in writing and accompanied by copies of the supporting documents (e.g. latest ACRA printout) and addressed to the Manager, BCA Contractors Registration System or email to [bca\\_enquiry@bca.gov.sg](mailto:bca_enquiry@bca.gov.sg).
4. In addition, BCA may periodically require registered firms to furnish pertinent particulars to BCA for the purpose of assessing the eligibility of their continued registration with BCA.

### **Validity**

1. The validity for a first time registration is for a period of three years. Registration will thereafter lapse automatically unless a renewal (for a period of three years) is filed and approved by BCA. Upgrading, transfer, additional workhead(s) and any other applications are separate registration processes and will not affect the firm's current validity period, i.e. the expiry date will remain unchanged.
2. Renewals shall be made one month before the expiry of the validity period. Application forms for renewals will be sent by BCA to all registered contractors two months before the registration expiry date.

### **Use of BCA's Logo**

BCA's logo cannot be reproduced or printed on materials such as company's name card, office stationery, promotional material, website, etc. However, registered firms under BCA Contractors Registration System may use the following text: **"BCA Registered Contractor (for public sector works) – Workhead (Grade)"** to reflect the firm's registered status. Notwithstanding this, BCA reserves the right, at its absolute discretion, to require the firm to remove such text without giving any reason whatsoever, and will not be held liable for any loss or expense incurred by the firm in removing the text.



## SPECIFIC REGISTRATION REQUIREMENTS FOR CONSTRUCTION WORKHEAD (CW)

DEC 2012 EDITION

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**WORKHEAD CLASSIFICATION AND DESCRIPTION**

<b>Workhead</b>	<b>Title</b>	<b>Description</b>
CW01	General Building	All types of building works in connection with any structure, being built or to be built, for the support, shelter and enclosure of persons, animals, chattels or movable property of any kind, requiring in its construction the use of more than two unrelated building trades and crafts. Such structure includes the construction of multi-storey carparks, buildings for parks and playgrounds and other recreational works, industrial plants, and utility plants. Scope of work includes the addition and alteration works on buildings involving structural changes and installation of roofs (firms which undertake waterproofing work should register under CR13).
CW02	Civil Engineering	<p>(a) Works involving concrete, masonry and steel in bridges, sewers, culverts, reservoirs, retaining walls, canals, drainage systems, underground structures, cutting and filling of embankment, river banks, excavation of deep trenches, scraping of sub-soil, surface drainage works, flexible pavement, rigid pavement or laterite roads, bus bays, open carparks and related works such as kerbs and footways.</p> <p>(b) Works involving dredging in canal, river and offshore for the purpose of deepening and extraction of mineral or construction material. It also includes reclamation works.</p> <p>(c) Works involving marine piling and the construction of marine structures such as jetties, wharves, sea and river walls. The head does not cover the construction and fabrication of marine crafts, pontoons and oilrigs or any floating platform.</p>

**TABLE B1**  
**REGISTRATION REQUIREMENTS**

Grade (See Note 2)	Financial (Min Paid-Up Capital & Min Net Worth)	Management & Development	Track Record (Past 3 years)**		Additional Requirements
			CW01	CW02	
A1	\$15m	24RP/P/T incl min 8RP ISO9001:2008 (SAC) ISO14000 OHSAS18000/ SS506 Part1	\$150.0m of which \$75.0m PS \$112.5m MC \$37.5m SP	\$150.0m of which \$75.0m PS \$75.0m MC \$37.5m SP	i) Annual submission of financial accounts and certified VAP calculation  ii) Annual submission of CET declaration - for A1,A2  iii) General Builder Licence - Class 1 (GB1)  iv) At least one RP/P/T with CCPM (by 1 Jul 13)- for A1,A2  v) At least one RP/P/T with CCPM (by 1 Jan 14) - for B1  vi) At least one RP/P/T with BCCPE (by 1 Jul 13)- for B2
A2	\$6.5m	12RP/P/T incl min 4RP ISO9001:2008 (SAC) ISO14000 OHSAS18000/ SS506 Part1	\$65.0m of which \$32.5m PS \$48.75m MC \$16.25m SP	\$65.0m of which \$32.5m PS \$32.5m MC \$16.25m SP	
B1	\$3m	6RP/P/T incl min 2 RP ISO9001:2008 (SAC) OHSAS18000/ SS506 Part1 ISO14000 (by 1 Jul 13)	\$30.0m of which \$22.5m MC \$7.5m SP	\$30.0m of which \$15.0m MC \$7.5m SP	
B2	\$1m	3RP/P/T incl min 1RP ISO9001:2008 (SAC) OHSAS18000/ SS506 Part1 ISO14000 (by 1 Jul 13)	\$10.0m of which \$7.5m MC \$2.5m SP	\$10.0m of which \$5.0m MC \$2.5m SP	
C1	\$300,000	1P + 1T SMC	\$3.0m	\$3.0m	
C2	\$100,000	1P or 2T SMC	\$1.0m	\$1.0m	
C3	\$25,000	1T	\$100,000 (see note 12)	\$100,000 (see note 12)	ii) At least one RP/P/T with BCCPE (by 1 Jul 13)

Note:

- 1) m stands for million, min stands for minimum
- 2) For the tendering limits, please refer to [www.bca.gov.sg/ContractorsRegistry/contractors\\_tendering\\_limits.html](http://www.bca.gov.sg/ContractorsRegistry/contractors_tendering_limits.html)
- 3) Both min paid-up capital and min net worth must be met. C3 firms are required to submit the latest management accounts (not more than 12 months old).
- 4) PS – projects executed in Singapore
- 5) MC – main contracts (nominated sub-contracts may be included)
- 6) SP – minimum size single project
- 7) Percentage of sub-contract value taken into consideration shall be 50% for CW01 and 75% for CW02.
- 8) RP – Professional with qualifications recognised by Professional Engineers Board (PEB) of Singapore, [www.peb.gov.sg](http://www.peb.gov.sg), Board of Architects (BOA) of Singapore, [www.boa.gov.sg](http://www.boa.gov.sg), or BCA, [www.bca.gov.sg](http://www.bca.gov.sg) (recognized for Resident Engineer)  
P/T – Professional and Technical personnel with relevant qualifications (see Table B2 for more details).
- 9) ISO 9001:2008 must be SAC accredited i.e. the certificate to bear the SAC logo
- 10) SMC (Safety Management Certificate) awarded by BCA or OHSAS 18000 required for C1 and C2.
- 11) For more details on GB1/GB2, please refer to [www.bca.gov.sg/BuildersLicensing/builders\\_licensing.html](http://www.bca.gov.sg/BuildersLicensing/builders_licensing.html)
- 12) New companies with insufficient track record for C3 will have to send its technical personnel to BCA HQ for an interview on Mondays (except public holidays) between 9am to 12pm and 2pm to 4.30pm before submitting its application.
- 13) CCPM – Certificate Course in Construction Productivity Management conducted by BCA Academy
- 14) BCCPE – Basic Concept in Construction Productivity Enhancement (Certificate of Attendance)

\*\* For renewal cases of grades A1 to C2, projects completed satisfactorily in the past 5 years including ongoing projects and recently awarded projects will be considered as track record. For CW02-A1 registration, projects completed satisfactorily in the past 5 years can be considered as track record. For evaluation of overseas projects and financial accounts, BCA may send its officers to the respective countries for further verification. All flight, allowance and accommodation expenses shall be fully paid by the applicant.

**TABLE B2**  
**PERSONNEL QUALIFICATION**

Workhead	Title	Personnel Qualifications
CW01 CW02	General Building Civil Engineering	<p>“RP” shall mean a degree in Architecture, Civil/Structural Engineering or equivalent recognised by <b>PEB, BOA or BCA</b>. The lists can be obtained from the internet at <a href="http://www.peb.gov.sg">www.peb.gov.sg</a>, <a href="http://www.boa.gov.sg">www.boa.gov.sg</a> and <a href="http://www.bca.gov.sg">www.bca.gov.sg</a> (recognized for Resident Engineer) respectively.</p> <p>“P” shall mean a recognised degree in Architecture, Building, Civil/Structural Engineering or equivalent.</p> <p>“T” shall mean a Technical qualifications in any of the following:</p> <ul style="list-style-type: none"> <li>i) A recognised polytechnic diploma in Architecture, Building, and Civil/Structural Engineering.</li> <li>ii) A National Certificate in Construction Supervision (NCCS)</li> <li>iii) Advance National Building Qualification (NBQ)/Specialist Diploma in M&amp;E Coordination</li> <li>iv) Or other equivalent qualifications approved by BCA</li> </ul>



FORM CRS003

CONTRACTORS REGISTRY
5 Maxwell Road #02-00
Tower Block MND Complex
Singapore 069110

New/Additional/Upgrading
Application Form

Toll-free line : 1800-dial bca (3425 222)
Fax : 6324 0346
Email : bca\_enquiry@bca.gov.sg
Website : www.bca.gov.sg
Office hours : Mon - Fri
8.30am - 5.00pm

INSTRUCTIONS

- 1. Please read the BCA Terms Of Registration and the respective Registration Requirements before completing this Application Form.
2. This form may take you 30\* minutes to fill in.
3. You will need the following information to fill in the form:
- Accounting and Corporate Regulatory Authority (ACRA) business profile
- Technical Personnel's NRIC/Employment Pass number
- Technical Personnel's education qualification
- Track record award letter/invoice/purchase order
4. A non-refundable processing fee is payable for each workhead applied. Payment can be made by NETS, Cashcard, Credit cards (Master/Visa) or GIRO (existing account holder only)
5. Application form for GIRO can be obtained from the Registry counter or downloaded from the Contractors Registry webpage at www.bca.gov.sg.

\* The average time required per workhead application

DECLARATION

I, Mr/Mrs/Ms (Name in Block letters) (NRIC/Passport No.) declare that the particulars given by me in this application are true. I authorise BCA to conduct any enquiries on the particulars furnished as BCA deems fit, and accept that neither BCA nor its officer shall be held liable for any loss, injury or damages howsoever caused by BCA's processing of and decision on this application.

I authorise Mr/Mrs/Ms (Name of Contact Person) to provide any additional information required by BCA. I understand that false declaration or false information provided is a serious offence which may result in penalties including debarment of my firm from participating in public sector tenders.

Signature and Company Stamp, Designation, Date

## SECTION A: APPLICATION

Please mark "X" on your choice of application type in the relevant box below

**New** application to be a BCA Registered Contractor

**Additional** workhead(s) application for BCA Registered Contractor

**Upgrading** application for BCA Registered Contractor


No	Workhead Code	Applied Grade	Existing Grade (for upgrading application only)	For Official Use Only

### Workhead Code and Description

CW01 General Building  
CW02 Civil Engineering

CR01 Minor Construction Works (*No grade*)  
CR02 Corrosion Protection  
CR03 Demolition (*No Grade*)  
CR04 Fencing & Ironworks  
CR05 Concrete Repairs  
CR06 Interior Decoration & Finishing Works  
CR07 Cable/Pipe Laying & Road Reinstatement  
CR08 Piling  
CR09 Repairs & Redecoration  
CR10 Precast Concrete Products  
CR11 Signcraft Installation  
CR12 Ground Support & Stabilisation Works  
CR13 Waterproofing Installation  
CR14 Asphalt Works & Road Marking  
CR15 Site Investigation Works (*No grade*)  
CR16 Curtain Walls  
CR17 Windows (*No grade*)  
CR18 Doors (*No grade*)

ME01 Air-Conditioning, Refrigeration & Ventilation Works  
ME02 Building Automation, Industrial & Process Control Systems  
ME04 Communication & Security Systems  
ME05 Electrical Engineering  
ME06 Fire Prevention & Protection Systems  
ME07 High & Low Tension Overhead Line Installation  
ME08 Internal Telephone Wiring for Telecommunications  
ME09 Lift & Escalator Installation  
ME10 Line Plant Cabling/Wiring for Telecommunications  
ME11 Mechanical Engineering  
ME12 Plumbing & Sanitary Works  
ME13 Traffic Light Systems  
ME14 Underground Pipeline or Telecommunications  
ME15 Integrated Building Services

MW02 Housekeeping, Cleansing, Desilting & Conservancy Services

SY01 Basic Building Materials  
SY02 Chemicals  
SY04 Electrical Equipment  
SY05 Electrical & Electronic Materials, Products & Components  
SY06 Finishing & Building Product  
SY07 Gases  
SY08 Mechanical Equipment, Plant & Machinery  
SY09 Mechanical Materials, Products & Components  
SY10 Metal & Timber Structures  
SY11 Petroleum Products  
SY12 Pipes  
SY14 Sanitary Products

RW01 Window Contractors (*No Grade*)  
RW02 (L2) Lift Contractors (*No Grade*)

PROCESSING FEES (per workhead)	
Grade	Amount (Incl GST)
CR01, CR03 CR15, CR17 CR18 RW01, RW02	\$540
} No Grade	
C3, L1	\$540
C2, L2	\$660
C1, L3	\$720
L4	\$900
B2, L5	\$1,080
B1	\$1,200
A2, L6	\$2,100



<b>SECTION B: COMPANY INFORMATION</b>	
<b>Name of Company</b>	Office Tel
	Fax
	<b>Email Address</b> (compulsory)
Please note that all future correspondence will be made through email	
<b>Business Address</b>	For foreign firms, please state Country of origin
Building / Block No	
Street Name	
Unit No	
Building Name	
Postal Code	
<b>Accounting &amp; Corporate Regulatory Authority (ACRA)</b>	Please mark "X" on one of the following types of registration
UEN Number (Previously ACRA Number)	<input type="checkbox"/> Sole Proprietorship
	<input type="checkbox"/> Partnership
ACRA Expiry Date (for sole-proprietorship & partnership)	<input type="checkbox"/> Private Limited
Accounts Closing Date	<input type="checkbox"/> Public Listed
	<input type="checkbox"/> Foreign Branch
<b>Company Ownership</b>	
Name and contact of person(s), company or corporation which owns, whether directly or indirectly, at least 50% of the total number of shares in your firm	Percentage of shares held by such person(s), company or corporation
1)	
2)	
<b>Subsidiaries and Associated Companies</b>	
Name of Subsidiary/Associated Company	Applicants' Share in the Company (%)
1)	
2)	
3)	
4)	
6)	
7)	

**SECTION C: TECHNICAL PERSONNEL \***

Please attach copies of relevant educational certificates and licences of each of the listed technical personnel for verification. Kindly place a prefix 'S' before the Singapore NRIC Numbers. A copy of Company's CPF statement must also be enclosed.

No	Name	NRIC / FIN No	Designation	Qualification (Degree, Diploma, Licence, Certificate)	Discipline	Institution (Year of Grad)
Eg	Anthony Tan Ah Teck	S1234567X	Project Manager	Degree	Civil Engineering	NUS (1999)
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						
13						
14						
15						

\* Please make duplicate copies if required.

**SECTION D: TRACK RECORD (for CW, CR, ME and MW Workheads)\***

Please complete Section D and submit to your client's representative (responsible for the supervision of the project) for assessment and endorsement. Each project must be enclosed with Award Letter or Certificate of Completion.

Name of Applicant:

<b>Workhead(s) involved:</b>	CW		CR		ME		MW	
------------------------------	----	--	----	--	----	--	----	--

Project Title:

Please give a description on the work done for the above project:

Contract No:  
(e.g. HDB P/036/99)

If Joint Venture J.V., state name of partner(s):

% share of J.V.

Date of Commencement  
(dd/mm/yy):

Scheduled Date of Completion  
(dd/mm/yy):

Actual Date of Completion  
(dd/mm/yyyy):

For on-going project, state value  
completed to date (S\$):

Initial Contract Value (S\$):

Final Value of Contract (completed) (S\$):

**Particulars of Firm(s) Involved in Project**

Please complete either Part 1 or Part 2 only.

**PART 1:**

*If project was awarded to your company as a **Main Contractor** or **Nominated Sub-Contractor***

	Owner/Developer	Architect	Engineer
Company Name			
Name of Reporting Officer			
Contact Number			
Email			

**PART 2:**

*If project was awarded to your company as a **Sub-Contractor***

Company Name of Main Contractor:

Name of Reporting Officer:

Contact Number:

Email:

- Please make duplicate copies if required.

**SECTION D: TRACK RECORD (continued)\***

**Performance Assessment**

A separate performance report will be submitted by the government agency directly to BCA for public sector projects. However, if the public sector project is assessed by consultant/architect using this form, the government agency concerned must countersign on the same report.

Please tick “✓” the appropriate rating

Quality	Excellent	Very Good	Good	Satisfactory	Poor
a) Quality Performance					
<b>Management</b>					
b) Site Planning And Control					
c) Progress of Works					
d) Housekeeping					
e) Response To Instructions					
<b>Overall Score</b>					

**Particulars Of Reporting Firm**

I have read and verified the information provided by the applicant in Section D (2 pages).

Name of Reporting Firm

Office Tel:

Fax No:

Email address:

Name of Reporting Officer

Designation

Official Stamp of Reporting Firm/Organisation

Reporting Officer's Signature / Date

\* Please make duplicate copies if required.

**SECTION E: TRACK RECORD (for SY Workheads only)\***

- 1) Firms applying for SY Workheads need only to submit a summary of **past 3 years' track record** up to the required amount of the grade applied for. For your largest 3 projects, please submit their **Award Letter or Purchase Orders or Invoices** for verification.
- 2) Firms are to prepare a separate summary table for each SY Workhead applied.

No	Invoice / Purchase Order No.	Supply Description	Commencement Date (dd/mm/yy)	Completion Date (dd/mm/yy)	Project Value (\$)	Name of Client and Contact Person	Contact No. of Client	Workhead Applied

\* Please make duplicate copies if required.

## DOCUMENT CHECKLIST

Please check against the checklist below to ensure that your application is complete before submission.

### SECTION B: COMPANY INFORMATION

*Remarks (For Official Use Only)*

1. Complete set of latest Management Accounts signed by Directors for C3, L1, CR01, CR03, CR15, CR17, CR18 and RW01.
2. Complete set of latest Audited Accounts (not more than 12 months old) signed by Directors & Auditor for C2 & above and L2 & above.

### SECTION C: TECHNICAL PERSONNEL

3. Latest Company's CPF Statement of Account, Form 90 for existing personnel or Company's letter of appointment for new employees of less than three months
4. Employment Passes and Letters of Approval from MOM for foreign technical personnel.
5. The relevant Educational Certificates for new qualified technical personnel employed.

### SECTION D: TRACK RECORD (for CW, CR, ME AND MW Workheads)

6. Award Letters / Invoices / Purchase Orders submitted for each track record.

### SECTION E: TRACK RECORD (for SY Workheads only)

7. Award Letters / Invoices / Purchase Orders submitted for the largest 3 projects.

### OTHER DOCUMENTS

#### For CW Workheads:

8. SAC accredited ISO 9001:2008, OHSAS 18000 Certificate for grades B2 and above. ISO 14000 Certificate for grades A2 and above.
9. SMC or OHSAS 18000 Certificate for grades C1 and C2.
10. GB1 for grades B2 and above. GB1 or GB2 for grades C1 to C3.

#### For CR08, CR10, CR12 and CR15:

11. SMC or OHSAS 18000 Certificate for CR08, CR10 and CR12 grades L2 and above. Relevant SB for all grades.

#### For ME05:

12. Electrician / Electrical Technician / Electrical Engineer Licence from EMA

#### For ME 08:

13. Company's Telecommunication Wiring Licence from IDA.

#### For ME 12:

14. PUB Water Service Plumber Licence or EMA Gas Service Worker Licence or Sanitary Services Plumber Licence from SPS.

#### For ME15:

15. Electrician / Electrical Technician / Electrical Engineer Licence from EMA
16. Company's Telecommunication Wiring Licence from IDA.

#### For MW04:

17. Vector Control Operator Certificate from ENV.

#### For CR17 and RW01

- CR17 require RW01.
18. RW01 require two personnel with certificate of attendance on Safety of Windows issued by HDB.

**APPENDIX 7-1-3**  
**CIRCULAR FOR**  
**CONTRACTOR / CONSULTANT**  
**REGISTRATION SYSTEM**





Blue color font with underline is subject to further discussion and change.

**THE MINISTRY OF  
CONSTRUCTION**

**SOCIALIST REPUBLIC OF VIET NAM  
Independence - Freedom – Happiness**

No. \_\_\_\_\_

Hanoi, Abcd xx, 2013

**DRAFT CIRCULAR  
ON REGISTRATION OF CONSTRUCTION CONTRACTOR AND CONSULTANT**

**THE MINISTER OF CONSTRUCTION**

*Pursuant to Construction Law No. 16/2003/QH11 of November 26, 2003;*  
*Pursuant to Tender Law No. No. 61/2005QH11 of November 29, 2005;*  
*Pursuant to Law No. 38/2009/QH12 of June 19, 2009, amending and supplementing of articles or the Laws concerning capital construction investment;*  
*Pursuant to the Governments Decree No. 17/2008/ND-CP of February 4, 2008, defining the functions, tasks, powers and organizational structure of the Ministry of Construction;*  
*Pursuant to the Government Decree No. 49/2008/ND-CP of April 18, 2008, amending and supplementing a number of articles of the government’s decree no. 209/2004/ND-CP of December 16, 2004*  
*Pursuant to the Governments Decree No. 12/2009/ND-CP of February 10, 2009, on the management of investment projects on construction of works;*  
*Pursuant to the Government Decree No. 85/2009/ND-CP of October 15, 2009, guiding the bidding law and selection of construction contractors under the construction law*  
*Pursuant to the Government Decree No. 43//2010/ND-CP of April 15, 2010 on enterprise registration*  
*Pursuant to the Government Decree No. 209/2004/ND-CP of xxx zz, 2012 on quality management of construction works*  
*Pursuant to the ministry of Construction Circular No. 01/2012/TT-BXD on guidance on contractual licensing procedures and management of foreign contractors/consultants operating construction activities in Vietnam;*  
*Pursuant to the Ministry of Construction Circular No. 33/2009/TT-BXD of September 30, 2009*  
At the proposal of the Minister of Construction;

**CIRCULAR:**

**Article 1.** To promulgate together with this Circular, the regulation on the registration system of construction contractors and consultants shall be compiled.

**Article 2.** This Circular takes effect 15 days after its publication in official gazette.

**Article 3.** Project owners / employers, related agencies and construction contractors and consultants engaged in construction works and consultant works shall observe and implement the stipulation in this Circular.

**FOR THE MINISTER OF CONSTRUCTION**

**MINISTRY OF  
CONSTRUCTION**

**SOCIALIST REPUBLIC OF VIETNAM**

**Independence - Freedom - Happiness**

*Hanoi, Abcd xx, 2013*

**REGULATION**

**ON REGISTRATION OF CONSTRUCTION CONTRACTORS AND CONSULTANTS**

(Promulgated together with the Circular No. zz/2012/ - dated Abcd xx, 2013)

**Chapter 1**

**GENERAL**

**Article 1: Objectives**

The promulgation of this regulation has the following objectives:

1. To provide project owners/employers with general information on construction contractors and consultants.
2. To assist project owners/employers and management agencies for selection of construction contractor and consultants at pre-qualification and tender by providing information on bidders.
3. To assist management agencies for managing project during planning, feasibility study, project management, survey, design, design verification, supervision, construction, inspection, certification and assessment by providing information on construction contractor and contractors or consultant and consultants (in case of joint venture).
4. To assist to classify construction contractors and consultants into several groups in capability by providing information on construction contractors and consultants.
5. To improve capabilities and activities of construction contractors and consultants through submission of company information by them.
6. To allow construction contractors and consultants with less papers to be submitted in pre-qualification and tender stage.

**Article 2: Scope and Object of System**

This regulation focuses on construction contractors and consultants, and stipulates the registration system of construction contractors and consultants, who tender and carry out planning, feasibility study, project management, survey, design, design verification, supervision, construction, inspection, certification and assessment in Vietnam.

## Chapter 2

### INFORMATION FROM CONSTRUCTION CONTRACTORS AND CONSULTANTS

#### Article 3: Obligation and Right of Construction Contractors and Consultants

1. Construction contractors and consultants intending to participate tenders to construction works and/or consultant works (planning, feasibility study, project management, survey, design, design verification, supervision, inspection, certification and assessment) in Vietnam shall provide information and obtain acceptance for the registration system according to the contents specified in Article 4 and 5 of this Regulation for construction contractors and consultants respectively.
2. Construction contractors and consultants who are in the list of the registration system will have right to be selected by project owners in pre-qualification and tender.
3. Providing that construction contractors and consultants intending to submit tenders for construction works and/or consultant works funded and/or aided by international financial organizations and/or foreign countries official development assistance may take pre-qualification and tender process formulated by them prior to this registration. When they are awarded, they shall take the process for registration system specified in this regulation.
4. Grace periods for construction contractors and consultants to provide information and obtain acceptance to the registration system prior to participating tenders are shown below.
  - a) Those intending tender to works at special grade and grade I:  
one year after this regulation becomes effect
  - b) Those intending tender to works at grade II: x years after this regulation becomes effect

#### Article 4: Construction Contractor Registration System (CRG- 1)

Information of the following items shall be provided in accordance with the attached file (1) for Construction Contractor Registration System (CRG- 1).

1. The name of construction contractor
2. The address of head office  
Telephone number  
Fax number  
Website
3. The address of representative office or branch office (If any)
4. Decision of establishment  
Decision no  
Date of issuance  
Organization issuing decision
5. Business registration certificate  
Certificate no  
Date of certificate  
Organization issuing certificate

6. Investment certificate (for foreign company)
  - Certificate no
  - Date of certificate
  - Organization issuing certificate
7. Type of company
  - Limited liability company / Shareholding company / Partnership / Private company
8. Construction activity fields
  - Civil / Industry / Transportation / Irrigation / Infrastructure
9. Financial figures in three recent years
  - a) Paid-up capital
  - b) Equity
  - c) Turnover
  - d) Profit after enterprise income tax
  - e) Enterprise income tax
10. Staff information
  - a) General information
    - Total number  
of which
    - Number of management
    - Number of university degree and above holder
    - Number of college graduate
    - Number of skilled technical workers
  - b) Professional (Qualified) staff list
11. Construction site chief commander list
12. Specialized machinery and execution equipment list
13. Quality management system
14. Completed construction packages in three years in each type
  - 1) Package name
  - 2) Location (province)
  - 3) Project name
  - 4) Project category
  - 5) Work grade
  - 6) Joint Venture details (in case of JV)
  - 7) Contract amount

- 8) Dates of commencement & completion
- 9) Project owner name
- 10) Result of performance evaluation
- 11) Contract agreement and Final acceptance
- 15. Ongoing construction packages in each type
  - 1) Package name
  - 2) Location (province)
  - 3) Project name
  - 4) Project category
  - 5) Work grade
  - 6) Joint Venture details (in case of JV)
  - 7) Contract amount
  - 8) Dates of commencement & completion
  - 9) Project owner name
  - 10) Contract agreement
- 16. Prize-won works
- 17. Others
- 18. Full Name of person provided Information
  - Title
  - Telephone number
  - Email address
- 19. Commitment

**Article 5: Construction Consultant Registration System (CRG- 2)**

Information of the following items shall be provided in accordance with the attached file (2) for Construction Consultant Registration System (CRG- 2).

- 1. The name of construction consultant
- 2. The address of head office
  - Telephone number
  - Fax number
  - Website
- 3. The address of representative office or branch office (If any)
- 4. Decision of establishment
  - Decision no

- Date of issuance
- Organization issuing decision
- 5. Business registration certificate
  - Certificate no
  - Date of certificate
  - Organization issuing certificate
- 6. Investment certificate (for foreign company)
  - Certificate no
  - Date of certificate
  - Organization issuing certificate
- 7. Type of company
  - Limited liability company / Shareholding company / Partnership / Private company
- 8. Operation field and Construction activity fields
  - Operation field: Feasibility study / Project management / Survey / Design / Design verification / Supervision / Inspection / Certification / Assessment
  - Construction activity field: Civil / Industry / Transportation / Irrigation / Infrastructure
- 9. Financial figures in three recent years
  - a) Paid-up capital
  - b) Equity
  - c) Turnover
  - d) Profit after enterprise income tax
  - e) Enterprise income tax
- 10. Staff information
  - a) General information
    - Total number
    - of which
    - Number of management
    - Number of university degree and above holder
    - Number of college graduate
    - Number of skilled technical workers
  - b) Professional (Qualified) staff number (Architect / Engineer / Supervisor / Project manager / Cost estimator)
- 11. Manger list (Feasibility study / Project management / Survey / Design / Design verification)
- 12. Quality management system
- 13. Completed packages in three years in each operation field

- 1) Package name
  - 2) Location (province)
  - 3) Project name
  - 4) Project category
  - 5) Work type
  - 6) Work grade
  - 7) Joint Venture details (in case of JV)
  - 8) Contract amount
  - 9) Dates of commencement & completion
  - 10) Project owner name
  - 11) Contract agreement and Final acceptance
14. Ongoing packages in each operation field
- 1) Package name
  - 2) Location (province)
  - 3) Project name
  - 4) Project category
  - 5) Work type
  - 6) Work grade
  - 7) Joint Venture details (in case of JV)
  - 8) Contract amount
  - 9) Dates of commencement & completion
  - 10) Project owner name
  - 11) Contract agreement
15. Prize-won works
16. Others
17. Full Name of person provided Information
- Title
- Telephone number
- Email address
18. Commitment

#### **Article 6: Procedure of Information Submission**

1. Submission of information

- a) Construction contractors and consultants (applicants) taking part in construction works and/or consultant works shall ensure to be honest and write clearly the full name, job title and the office address of organizations, including “Commitment” in accordance with the attached file (1) or (2), when providing the information to the CAMD of MOC.
  - b) Construction contractors and consultants shall make payment of fee to CAMD of MOC for management and maintenance of the system upon submission of information for first registration and subsequent renewal and update. Fee shall be indicated in the address in d).
  - c) Submission of information shall follow the steps below.
    - Applicant shall obtain application form of registration at the address in d).
    - Applicant shall send the documents via post offices or by hand, or
    - Applicant shall send the information through web-site.
    - Applicant shall respond to the comments from CAMD of MOC, until obtaining acceptance.
  - d) The address of CAMD
    - Construction Activity Management Department (CAMD) of MOC: 37 Le Dai Hanh street.
    - Fax number: 04-9762153
    - Email address: Xaylap@moc.gov.vn
    - Website: <http://doanhnghiep.xaydung.gov.vn>
2. Renewal and update of information
- a) Information shall be renewed and updated every year after first registration for construction contractor registration system (CRG- 1) and construction consultant registration system (CRG- 2).
  - b) When any changes in its management status, address or any pertinent particulars occur, registered construction contractors and consultants are required to advise to CAMD.
  - c) If construction contractors and consultants fail to renew and update in accordance with a) above, their information in the registration system will be deleted.

### **Chapter 3**

#### **IMPLEMENTATION**

##### **Article 7: Responsibilities of Relevant Parties**

1. CAMD of MOC shall manage and maintain the registration system and is the coordinator with relevant parties to implement the followings.
  - a) CAMD shall receive the information construction contractors and consultants provide.
  - b) CAMD shall review the information for registration provided by construction contractors and consultants and shall furnish either comments or acceptance on the information for registration to construction contractors and consultants within two weeks after receipt of the information.
  - c) CAMD shall put identification number to each construction contractor and consultant, store the number into the registration system and inform the construction contractor and consultant accordingly.



- d) CAMD shall update the list of construction contractors and consultants in registration system and show the names of construction contractors and consultants in the website.
  - e) Based on the information provided by construction contractors and consultants for registration, CAMD will assess construction contractors and consultants to have ranks with capability in future pursuant to some criteria such as turnovers, completed works, construction work quality, number of qualified staff etc., when required. CAMD will announce those to project owners/employers, as requested.
2. Construction contractors and consultants shall be responsible for providing the information completely, timely and honestly in accordance with the stipulation of this regulation.

(The attached file (1): Note & Format for Construction Contractor Registration System (CRG- 1))

(The attached file (2): Note & Format for Construction Consultant Registration System (CRG- 2))



**APPENDIX 7-1-4**  
**NOTE & FORMAT FOR**  
**CONTRACTOR REGISTRATION**  
**SYSTEM**



**NOTE FOR PROVIDING DATA OF CONSTRUCTION CONTRACTOR REGISTRATION (1)**

[Basic & Financial data]

1. The name of construction contractor
2. The address of head office
  - Telephone number
  - Fax number
  - Website
3. The address of representative office or branch office (If any)
4. Decision of establishment
  - Decision no
  - Date of issuance
  - Organization issuing decision
5. Business registration certificate
  - Certificate no
  - Date of certificate
  - Organization issuing certificate
6. Investment certificate (for foreign company)
  - Certificate no
  - Date of certificate
  - Organization issuing certificate
7. Type of company
  - Limited liability company / Shareholding company / Partnership / Private company: *to be selected*
8. Construction activity fields
  - Civil / Industry / Transportation / Irrigation / Infrastructure: *to be selected in accordance with decree 209*
9. Financial figures in three recent years: *audited financial statement or financial statement to be enclosed*
  - a) Paid-up capital: *Balance Sheet Code 411*
  - b) Equity: *Balance Sheet Code 400*
  - c) Turnover in each construction field: *Results of Business Activities Code 01 for Total Turnover*
  - d) Profit after enterprise income tax: *Results of Business Activities Code 60*
  - e) Enterprise income tax: *Results of Business Activities Code 51, certificate of tax payment to be enclosed*

**NOTE FOR PROVIDING DATA OF CONSTRUCTION CONTRACTOR REGISTRATION (2)**

[Technical data]

10. Staff information
  - a) General information
    - Total number, of which
    - Number of management
    - Number of university degree and above holder
    - Number of college graduate
    - Number of skilled technical workers
  - b) Professional (Qualified) staff list with format in CRG1 Appendix I:  
*professional means a) Architect and b) Engineer with university degree  
professional certificate to be enclosed, if any*
11. Construction site chief commander list with format in CRG 1 Appendix II in accordance with decree 12  
*certificate to be enclosed, if any*
12. Specialized machinery and execution equipment owned with format in CRG1 Appendix III
13. Quality management system ISO 9000 certificate: *If certified, copy of certificate to be enclosed*
14. Completed construction packages (maximum three packages) in each construction field in three years with format in CRG1 Appendix IV
  - 1) Package name
  - 2) Location (province)
  - 3) Project name
  - 4) Project category in accordance with decree 12
  - 5) Work grade in accordance with regulation of quality management
  - 6) Joint Venture details with shares (in case of JV)
  - 7) Contract amount (shared amount)
  - 8) Dates of commencement & completion
  - 9) Project owner name
  - 10) Result of evaluation at completion (from performance evaluation system) , if any
  - 11) Contract agreement and Final acceptance: *to be enclosed*
15. Ongoing construction packages (maximum three packages) in each construction field with format in CRG1 Appendix V
  - 1) Package name
  - 2) Location (province)
  - 3) Project name
  - 4) Project category in accordance with decree 12
  - 5) Work grade in accordance with regulation of quality management
  - 6) Joint Venture details with shares (in case of JV)
  - 7) Contract amount shared amount
  - 8) Dates of commencement & completion
  - 9) Project owner name
  - 10) Contract agreement: *to be enclosed*
16. Prize-won works

## Construction Contractor Registration

### [basic & financial data]

items		details			remarks
1	Name of construction contractor				
2	Address of head office				
	Telephone number				
	Fax number				
	Website				
3	Address of representative office or branch office				
4	Decision of establishment				
	Decision number				
	Date of issuance				
	Organization issuing decision				
5	Business registration certificate				
	certificate number				
	Date of certificate				
	Organization issuing certificate				
6	Investment certificate (for foreign company)				
	certificate number				
	Date of certificate				
	Organization issuing certificate				
7	Type of company	Limited liability company / Shareholding company / Partnership / Private company			<i>select in accordance with decree 43</i>
8	Construction activity fields (five fields)	Civil / Industry / Transport / Irrigation / Infrastructure			<i>more than one may be selected refer to construction law &amp; decree 209/49</i>
9	Financial figures	first year (year 20XX)	second year (year 20XX)	third year (year 20XX)	<i>audited financial statement or financial statement to enclose</i>
	a) Paid-up capital				
	b) Equity				
	c) Turnover in Civil works				
	Ditto in Industry works				
	Ditto in Transport works				
	Ditto in Irrigation works				
	Ditto in Infrastructure works				
	Ditto in Others				
	Total Turnover				
	d) Profit after enterprise income tax				
	e) Enterprise income tax				<i>certificate of tax payment to enclose</i>

## Construction Contractor Registration

### [technical data]

items	details	remarks
10	Staff information	
	a) General information	
	Total number	
	of which Number of management	
	Number of university degree and above	
	Number of college graduate	
	Number of skilled technical workers	
	b) Professional staff	Refer to enclosed Professional Staff List
		<i>Professional means a) Architect and b) Engineer with university degree Professional staff list (CRG1 Appendix I) to enclose Professional certificate to enclose, if any</i>
11	Site Manager list	Refer to enclosed Site Manager List
		<i>Manager for construction site chief commander to nominate (refer articles 52 of Decree 12) Manager list (CRG2 Appendix II) to enclose Certificate of manager to enclose, if any</i>
12	Specialized machinery and equipment owned	Refer to enclosed Machinery and Equipment List
		<i>Machinery and equipment list (CRG1 Appendix III) to enclose</i>
13	Quality management system	
		<i>ISO 9000 certificate to enclose, if possessed</i>
14	Completed construction packages (max. three) in each construction field in three years	Refer to enclosed List of Completed Works List
		<i>List of Completed works (CRG1 Appendix IV) to enclose Contract agreement &amp; Final acceptance to enclose</i>
15	Ongoing construction packages (max. three) in each construction field	Refer to enclosed List of Ongoing Works
		<i>List of Ongoing works (CRG1 Appendix V) to enclose Contract agreement to enclose</i>
16	Prize-won works	
17	Others	
		<i>free statement</i>
18	Full name of person providing information	name: _____, title: _____, telephone number: _____, email address: _____
		<i>name, title, telephone and email address to fill up</i>
19	Commitment	Refer to enclosed letter
		<i>Commitment letter (CRG1 Appendix VI)</i>













Format of Commitment

**Submission of Information for Registration System**

Attention to: the Construction Activity Management Department

My name:

Position

Representative of Company:

Address:

Phone:

Fax:

We herewith commit and confirm that all information, statements and enclosures in this submission for registration of our company are true and correct. In addition, we are ready to provide further information and clarification in this regard upon your request.

We hereby certify that we comply with all requirements and stipulations specified in the circular. We also understand that if we fail to comply with those in the circular, we may be subject to penalty imposed by you.

Yours faithfully,

**Legal representative of the contractor**

(Signature & seal)

**APPENDIX 7-1-5**  
**CONSULTANT REGISTRATION**  
**SYSTEM IN JAPAN**





### **Application Forms for Consultant Registration**

- ♦ Construction Consultant Application for Registration with Attachment
- ♦ Construction Consultant: Track Records
- ♦ Construction Consultant: Yearly Turnover in Recent Three Years
- ♦ Number of Staff
- ♦ Certificate of Engineering Manager
- ♦ Curriculum Vitae of Engineering Manager
- ♦ Curriculum Vitae of Representative of Applicant
- ♦ Commitment



**Construction Consultant Application for Registration**

建設コンサルタント登録規程第4条の規定により、建設コンサルタントの登録を申請します。この申請書及び添付書類の記載事項は、事実と相違ありません。

*Date of Application*

*Attention to Director General*

*Applicant*

*Address  
Consultant name & seal*

<i>Consultant name</i>		<i>New Application or Renewal</i>	
<i>Capital</i>	<i>Yen</i>	<i>Current Registration</i>	<i>Registration Number</i>
			<i>Registration Date</i>
<i>Top Management</i>		<i>Other Business</i>	
<i>Name</i>	<i>Title</i>		
		<i>Other Post of Top Management</i>	
<i>Office Address etc.</i>	<i>refer to Attachment</i>	<i>Field of Operation Engineering Managers</i>	<i>refer to Attachment</i>
<i>to be filled by registration office</i>			

<i>Telephone no.</i>	
<i>Fax no.</i>	
<i>Contact Name &amp; Title</i>	

記載要領

- ※印のある欄は、記載しないこと。
- 「新規の登録・登録の更新」の欄は、不要のものを消すこと。
- 「資本金額」の欄は、法人である場合に記載すること。
- 「役員の氏名及び役職名」の欄は、個人の場合は、本人及び支配人について記載すること。
- 「役員の他企業役員との兼務状況」の欄は、当該役員が他企業の役員を兼務している場合に、その企業名及び役職名を記載すること。

**Attachment**

<i>Business Offices</i>			
<i>Name</i>	<i>Post Code</i>	<i>Address</i>	<i>Telephone</i>
<i>(Main Office)</i>			
<i>(Branch Office)</i>			
<i>Total</i>	<i>no</i>		
<i>Field of Operation</i>	<i>Engineering Manager</i>	<i>Field of Operation</i>	<i>Engineering Manager</i>
1 <i>River, coastal &amp; ocean engineering</i>	<i>to select field of operation for registration and to fill name of</i>	12 <i>Landscape engineering</i>	
2 <i>Port, harbor &amp; airport engineering</i>		13 <i>Urban &amp; regional planning</i>	
3 <i>Electric power civil engineering</i>		14 <i>Geology</i>	
4 <i>Road engineering</i>		15 <i>Soil mechanics &amp; foundation</i>	
5 <i>Railway engineering</i>		16 <i>Materials &amp; structure</i>	
6 <i>Water supply &amp; industrial water supply</i>		17 <i>Tunnel engineering</i>	
7 <i>Sewerage</i>		18 <i>Construction planning, management &amp; cost estimates</i>	
8 <i>Irrigation drainage &amp; rural engineering</i>		19 <i>Environmental assessment &amp; management for construction</i>	
9 <i>Forest civil engineering</i>		20 <i>Mechanical engineering</i>	
10 <i>Fisheries civil engineering</i>		21 <i>Electrical &amp; electronics engineering</i>	
11 <i>Waste management</i>			

**記載要領**

- 「営業所」の欄は、本店又は常時建設コンサルタント業務に関する契約を締結する支店若しくは事務所を記載すること。
- 「登録を受けようとする登録部門」の欄は、該当するものの番号を○で囲み、「技術管理者の氏名」の欄は、当該登録部門に係る業務の技術上の管理をつかさどる専任の者で規程第3条第1号に該当するものの氏名を記載すること。

**Construction Consultant: Track Records**

Field of Operation: \_\_\_\_\_

<i>Client</i>	<i>Work Name</i>	<i>Kind of Work</i>	<i>Prime or Sub</i>	<i>Contract Amount</i>	<i>Work Duration</i>
				<i>Yen</i>	from <i>year / month /</i> to <i>year / month /</i>
				<i>Yen</i>	from <i>year / month /</i> to <i>year / month /</i>
				<i>Yen</i>	from <i>year / month /</i> to <i>year / month /</i>
				<i>Yen</i>	from <i>year / month /</i> to <i>year / month /</i>
				<i>Yen</i>	from <i>year / month /</i> to <i>year / month /</i>

## 記載要領

- 1 この表は、登録を受けようとする登録部門ごとに、直前3年間の主な契約について、5件以内記入すること。
- 2 「業務の内容」欄は、「設計」、「監理」、「調査」、「企画」、「立案」、「助言」のうち、該当するものを記載すること
- 3 「元請」とは、建設コンサルタント以外の者から建設コンサルタント業務を受注した場合をいい、「下請」とは、他の建設コンサルタントから建設コンサルタント業務を受注した場合をいう。

**Construction Consultant: Yearly Turnover in Recent Three Years**

unit: thousand yen

Fiscal Year	Field of Operation		xxx field	yyy field			Other than Registration Field	Total
	Client							
from year / month to year / month	Domestic	Public						
		Private (sub)	( )	( )	( )	( )	( )	( )
	Overseas							
	Total							
from year / month to year / month	Domestic	Public						
		Private (sub)	( )	( )	( )	( )	( )	( )
	Overseas							
	Total							
from year / month to year / month	Domestic	Public						
		Private (sub)	( )	( )	( )	( )	( )	( )
	Overseas							
	Total							
from year / month to year / month	Domestic	Public						
		Private (sub)	( )	( )	( )	( )	( )	( )
	Overseas							
	Total							
from year / month to year / month	Domestic	Public						
		Private (sub)	( )	( )	( )	( )	( )	( )
	Overseas							
	Total							

記載要領

- 1 この表は、各事業年度の損益計算書における完成業務収入中の登録部門ごとの業務に係る収入金額を記載すること。
- 2 国内で受注した調査であって下請によるものは「民間」に含めるものとし、さらに当該収入金額を ( ) 内に記載すること。
- 3 海外で受注した調査は、元請、下請のいかんにかかわらず「海外」に記載すること。

## Number of Staff

Kind of Staff	Total	Engineers Graduated from University or College	Technician Graduated from High School	Others	Staff with Qualification			
					Professional Engineer		Other Qualification	
					Corresponding Field	Other Field	Kind of Qualification	Number
Engineering Staff	no	no	no	no	no	no		no
Staff Number in Each Field	xxx field							
	yyy field							
	Other than Registration Field							
Administrative Staff								
Total								

**記載要領**

- 1 使用人とは、役員、職員を問わず、常時雇用している者をいう。
- 2 この表の人数を記載する欄は、建設コンサルタント業務に主として従事している使用人数を整数値で記載すること。
- 3 理工系学科とは土木工学、建築学、農業土木工学、森林土木工学、機械工学、地学、造園学、電気工学等の学科をいう。
- 4 「登録部門別技術関係使用人数」の欄は、現に登録している登録部門の業務に主として従事している者の人数を記載すること。
- 5 「技術士」の「当該部門」の欄は、当該登録部門の規程別表下欄に掲げる技術士の登録を受けている人数を記載すること。また、「その他」の欄は、「当該部門」の者以外で規程別表下欄に掲げる技術士の登録を受けている者の人数を記載すること。
- 6 「その他建設コンサルタントに関する資格」の欄は、「技術士」の欄に記載した者以外で、一級建築士、一級土木施工管理技士、RCCM等の資格を有している者がいる場合には、その資格の名称及び人数について、全て記載すること。

**Certificate of Engineering Manager**

It is to confirm that the following engineering managers are assigned in each field for registration.

Date of Application

Attention to Director General

Applicant  
Address  
Consultant name & seal

Field of Operation for Registration	Office	Name of Engineering Manager (birthday)	Professional Qualification	Certificate Number (registered date)	Domain of Professional Engineer	Education (graduation year)	Classification
xxx field							イ ロ
yyy field							イ ロ
							イ ロ
							イ ロ
							イ ロ
							イ ロ
							イ ロ
							イ ロ
							イ ロ

技術管理者の技術経歴は別表のとおり。

備考

技術管理者が規程3条第1号に規定する要件を備えていることを証する書面を添付すること。

記載要領

「区分」の欄は、規程第3条第1号イに該当する者についてはイ、同号ロに該当する者についてはロを○で囲むこと。



別表

**Curriculum Vitae of Engineering Manager**

<i>Name of Engineering Manager</i>		<i>Address</i>		
<i>duration</i>	<i>Years of Experience</i>	<i>Work Experience</i>		
		<i>Content of Work</i>	<i>Client</i>	<i>Contract Amount</i>
<i>year/mo to year/mo</i>	<i>x year b month</i>	...	...	...
<i>year/mo to year/mo</i>	<i>x year b month</i>	...	...	...
<i>year/mon to year/mo</i>	<i>x year b month</i>	...	...	...
<i>year/mo to year/mon</i>	<i>x year b month</i>	...	...	...
<i>year/mon to year/mon</i>	<i>x year b month</i>	...	...	...
<i>year/mon to year/mo</i>	<i>x year b month</i>	...	...	...
<i>year/mon to year/mo</i>	<i>x year b month</i>	...	...	...
<i>Total</i>	<i>x year b</i>	/	/	/
<i>It is hereby to confirm that this staff has the experiences mentioned above.</i>				
			<i>Date of Certification</i>	
			<i>Certification Consultant name &amp; seal</i>	
<i>証明を得ることができない場合</i>	<i>その理由</i>		<i>証明者と被証明者との関係</i>	<i>社員</i>

記載要領

- 1 「業務の内容」の欄は、企業名、職名、本人が従事した工事の設計、調査、監理等の業務について、契約名、規模、本人の業務上の役割等について具体的に記載すること。
- 2 実務経験の証明は、都市計画及び地方計画部門の技術管理者で一級建築士を要件とするもの並びに造園部門の技術管理者で技術士を要件とするものに限り必要とし、証明者ごとに作成すること。
- 3 「小計」の欄は、「実務経験年数」の欄に記載した年数を月単位で通算して記載すること。  
ただし、期間が重複している場合でも実期間で通算すること。複数枚に及ぶ場合は頁毎に累計を記載すること。
- 4 同時期に2以上の業務を担当した場合は、従事した期間が重複することのないよう留意してきさいすること。

## Curriculum Vitae of Representative of Applicant

	Name		Title
<b>Work History</b>	<i>Duration</i>	<i>Work Assignment &amp; Title</i>	
	<i>from year / month / date</i>		
	<i>to year / month / date</i>		
	<i>from year / month / date</i>		
	<i>to year / month / date</i>		
	<i>from year / month / date</i>		
	<i>to year / month / date</i>		
	<i>from year / month / date</i>		
	<i>to year / month / date</i>		
	<i>from year / month / date</i>		
<i>to year / month / date</i>			
<b>Reward / Punishment</b>	<i>Year / Month/ Date</i>	<i>Content</i>	
<p><i>It is to confirm that the above is true and correct.</i></p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 20%;"> <i>Date of Certificate</i> </div> <div style="border: 1px solid black; padding: 5px; text-align: center; width: 30%;"> <i>Representative &amp; Seal</i> </div> </div>			

**記載要領**

- 1 「

「	法人の役員	」
	本 人	
	支 配 人	
	決定代理人	」

 は、不要のものを消すこと。
- 2 「賞罰」の欄は、行政処分等についても記載すること。

## Commitment

*It is to declare that representative, top management and legal representative of applicant are not the person stated below.*

*Date of Application*

*Applicant*

*Address*

*Consultant name & seal*

*Attention to Director General*

*The statements below are those who are improper to be a representative, top management and legal representative for construction consultant to register to MLIT.*

- 1 成年被後見人若しくは被保佐人又は破産者で復権を得ないもの
- 2 建設コンサルタント登録規程（以下「規程」という。）第13条第1項第4号、第8号、第10号又は第11号に該当することにより登録を消除され、その消除の日から2年を経過しない者
- 3 禁錮以上の刑に処せられ、その刑の執行を終わり、又は刑の執行を受けることがなくなった日から5年を経過しない者
- 4 暴力団員による不当な行為の防止等に関する法律（平成3年法律第77号）の規定（同法第32条の2第7項の規定を除く。）に違反したことにより、又は刑法（明治40年法律第45号）第204条、第206条、第208条、第208条の3、第222条若しくは第247条の罪若しくは暴力行為等処罰に関する法律（大正15年法律第60号）の罪を犯したことにより、罰金の刑に処せられ、その刑の執行を終わり、又は刑の執行を受けることがなくなった日から5年を経過しない者
- 5 暴力団員による不当な行為の防止等に関する法律第2条第6号に規定する暴力団員又は同号に規定する暴力団員でなくなった日から5年を経過しない者
- 6 その業務に関し不正又は不誠実な行為をするおそれがあると認めるとするに足りる相当の理由がある者
- 7 営業に関し成年者と同一の行為能力を有しない未成年者でその法定代理人が上記1から6までのいずれかに該当するもの
- 8 法人でその役員のうち上記1から6までのいずれかに該当する者（上記2に該当する者については、その者が規程第13条第1項の規定により登録を消除される以前から当該法人の役員であつた者を除く。）のあるもの
- 9 個人でその支配人のうち上記1から6までのいずれかに該当する者（上記2に該当する者については、その者が規程第13条第1項の規定により登録を消除される以前から当該個人の支配人であつた者を除く。）のあるもの
- 10 暴力団員等がその事業活動を支配する者



**APPENDIX 7-1-6**  
**CONSULTANT REGISTRATION**  
**SYSTEM IN SINGAPORE**



## **Consultant Registration System in Singapore**

- ♦ Public Sector Panels of Consultants: Terms of Listing
- ♦ Listing Criteria for Public Sector Panels of Consultants
- ♦ Public Sector Panels of Consultants: Application Form





# **PUBLIC SECTOR PANELS OF CONSULTANTS (PSPC)**

## **TERMS OF LISTING**



5 MAXWELL ROAD #02-00  
TOWER BLOCK MND COMPLEX  
SINGAPORE 069110  
Toll-free: 1800-3425222  
Fax: 62201635  
E-mail: [bca\\_enquiry@bca.gov.sg](mailto:bca_enquiry@bca.gov.sg)  
Website: [www.bca.gov.sg](http://www.bca.gov.sg)

PUBLIC SECTOR PANELS OF CONSULTANTS  
LISTING REQUIREMENTS  
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© Ministry of Finance

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- Mechanical & Electrical (M&E) Engineering	Appendix A
- Quantity Surveying (QS) Consultancy	Appendix A
- Project Management (PM)	Appendix A

# TERMS OF LISTING

## 1.0 FUNCTIONS & SCOPE OF THE PUBLIC SECTOR PANELS OF CONSULTANTS (PSPC)

### 1.1 Functions of the PSPC

1.1.1. The Public Sector Panels of Consultants (PSPC) is administered by the Building and Construction Authority, on behalf of the Ministry of Finance to serve the procurement needs of government departments, statutory bodies and other public sector organisations. The PSPC serves only for public sector procurement. As such, business entities which are not listed with PSPC are not precluded from providing consultancy services outside the public sector.

### 1.2. Scope of the PSPC

1.2.1. The Public Sector Panels of Consultants (PSPC) serves to list firms that provide consultancy services for public sector building and construction projects, categorised by different disciplines and project cost ranges.

1.2.2. There are five major disciplines, namely **Architectural (Arch) Consultancy, Civil & Structural (C&S) Engineering Consultancy, Mechanical & Electrical (M&E) Engineering Consultancy, Quantity Surveying (QS) Consultancy** and **Project Management (PM) Consultancy**. Each discipline has 4 panels that are classified into various project value banding except for \*Project Management, which has only 2 panels.

*\*The current PM 2-Panel system will be changed to a 4-Panel system with effect from **1 Apr 2013**.*

## 2.0 APPLICATION DETAILS

### 2.1 Application Procedure

2.1.1 All applications are to submit online via BCA e-submission service system at <https://www.bca.gov.sg/pspc/>. It is the applicant's responsibility to ensure the completeness of the application by following the instructions and submitting the required information online. Incomplete application, application without supporting documents submitted or application not accompanied by the stipulated fees will not be processed.

2.1.2 Consultancy firms who wish to be listed with the PSPC must show that they meet the qualifying criteria for the particular panel applied for, subject to the listing eligibility. The PSPC Listing Criteria state the specific listing requirements for the particular discipline and project cost range that each panel can undertake. Consultancy firms who wish to apply for listing on the PSPC are advised to read the Terms of Listing carefully before submitting the application form. All applications must be accompanied by the necessary supporting documents.

2.1.3 For public sector building projects adopting the PSPC and the Quality-Fee Selection Method (QFM), listed firms will be invited by the public sector agencies to indicate their interest when there is a project. Expression of Interest (EOI) will be invited through Gebiz (<http://www.gebiz.gov.sg>) under "Request for Information". The interested firms may first undergo a shortlisting process. All firms allowed to tender would then be evaluated on both quality and fee proposals. Information on the QFM can be downloaded from the BCA website at <http://www.bca.gov.sg> → "Procurement"

## **2.2 Processing Fees**

- 2.2.1 The processing fees for all applications are quoted on the respective application forms. The preferred modes of payment are credit/debit card (i.e. VISA, Mastercard) and GIRO. The processing fee is non-refundable regardless of the application result. BCA may adjust the processing fees at any time without giving prior notice. All fees quoted are inclusive of GST.

## **2.3 Eligibility for Higher Project Value Panel**

- 2.3.1 Listed consultancy firms who have acquired sufficient experience in their current panel of project value banding may apply for a panel of higher project value banding, subject to listing eligibility. Applicants may apply for a panel of higher project value banding under one or more disciplines.

## **2.4 References**

- 2.4.1 In the course of processing the applications, reference may be obtained from the clients of the projects where the applicants were the consultants. It is implied that the applicant has authorised BCA to make all necessary enquiries relating to the applicant. Should the clients impose any service charge on the enquiry, it shall be borne by the applicants. In the event that no reference is forwarded by the applicant or sought by BCA, BCA will complete the processing based only on the available information.

## **2.5 Processing Time**

- 2.5.1 Under normal circumstances, if the submissions are complete and in order, BCA will endeavour to inform the applicants of the outcome within 2 weeks.

## **2.6 Outcome of Application**

- 2.6.1 BCA will notify each applicant on the outcome of the application by electronic mail as soon as the case has been processed. The status of the successful application will be published on the BCA webpage under the "Panels of Consultants" at <http://www.bca.gov.sg/>.

## **3.0 LISTING REQUIREMENTS**

### **3.1 Track Record and Performance**

- 3.1.1. Projects are considered completed when a Certificate of Statutory Completion (CSC), Temporary Occupation Permit (TOP) or Final Completion Certificate (for non-CSC/TOP projects) has been issued. The submitted project(s) must be relevant to the discipline under which the firm is applying. Where requested, applicants must submit copies of CSC, TOP or Final Completion Certificate (for non-CSC/TOP projects) to substantiate these track records.
- 3.1.2 In addition to the requirements on project values, applicants are expected to have a consistently good performance record. Those with poor performance history may be refused for listing on the PSPC. Generally, firms applying for eligibility to panels of higher project value banding should achieve a high standard of performance in the projects undertaken by them.

- 3.1.3 For an application by a joint venture entity, the joint venture entity may adopt the track record of either or both of its shareholders (for corporation) or constituent partners, provided always that:-
- (a) the project(s) adopted by the joint venture entity for its track record (the "Adopted Project") shall not be used by either of its shareholders or partners for the purposes of its own PSPC listing when the joint venture entity is being listed on the PSPC by reason of the Adopted Project;
  - (b) the Adopted Project is expected to have been completed in the past 5 years; and
  - (c) in respect of renewal applications by the joint venture entity, the Adopted Project must have been stated in the first application by the joint venture entity.
- 3.1.4 The joint venture entity should not renew its listing using the Adopted Project if the Adopted project has been completed more than 5 years ago. Under such circumstance for renewal, the joint venture firm shall meet the track record requirement using projects completed by the joint venture entity itself.

### 3.2 Personnel Resources

- 3.2.1 Applicants should satisfy BCA that they have the necessary full-time personnel resources stationed in Singapore to undertake the work corresponding to the panel applied for.
- 3.2.2 For architectural and engineering consultants, only firms that are allowed to offer such services under the Architects Act or the Professional Engineers Act may apply. For Registered Architects, the personnel's Practising Certificate is expected to indicate the applicant firm's name, and for Professional Engineers, BCA would be looking for the applicant firm's name as the first name of practice under the "Address of Practice" in the personnel's Practising Certificate. Personnel should not be listed under more than one firm of the same discipline under the PSPC at any one time.
- 3.2.3 Part-time employees cannot be considered as personnel resources for listing purposes. For purpose of verification of qualification of employees, the following are expected to be submitted during application:

<u>Personnel/Qualification</u>	<u>To Submit</u>
Registered professionals	Educational certificates and Valid practising certificates
Professional with PEB/BOA recognised professional qualifications	Educational certificates
QS or PM Professionals <sup>^</sup> ( <sup>^</sup> Any building, architecture or construction related engineering qualifications)	Educational certificates

### 3.3 Additional Requirements for Certain Panels

#### ISO Certification and Professional Indemnity Insurance

- 3.3.1 Where applicable, the firm is expected to forward the relevant certificate to substantiate its ISO certification status and the relevant documents to support that it has the stipulated Professional Indemnity Insurance (PII).

#### Verification for QS and PM Professionals' Track Records

- 3.3.2 Where applicable, the firm must forward the client's verification of the particular QS and PM professionals' own track records.

### **Training Requirements**

#### Code of Practice on Buildable Design Course

- 3.3.3 Where applicable, the firm must satisfy the requirement that at least one technical or professional staff has attended the Code of Practice on Buildable Design course conducted by BCA. BCA would be looking for the Certificate of Attendance as proof of attendance to maintain its PSPC listing.

#### Certification Course for Green Mark Manager

- 3.3.4 Where applicable, the firm must satisfy the requirement that at least one technical or professional staff has attended and passed the Certificate Course for Green Mark Manager conducted by BCA. BCA would require a Certificate of Successful Completion as supporting document for the firm to maintain its PSPC listing.

#### \*Certification Course for Universe Design (UD) Assessor

- 3.3.5 Where applicable, the firm must satisfy the requirement that at least one technical or professional staff has attended and passed the Certificate Course for Universe Design (UD) Assessor conducted by BCA. BCA would require a Certificate of Successful Completion as supporting document for the firm to maintain its PSPC listing.

*\*This course will be a new criterion for listing with effect from **1 April 2013***

### **3.4 Renewal of Listing**

- 3.4.1 Listed firms are advised to submit their renewal applications early when the annual renewal exercise commences.

## **4.0 CONDITIONS OF LISTING**

### **4.1 Authority of BCA**

- 4.1.1 BCA reserves the right to review or alter the status of the listed firms from time to time. The Terms of Listing set out above and the Listing Criteria shall be deemed as continuous requirements. BCA may *inter alia* take the following courses of action if the firms fail to continuously fulfill the said requirements:
- (a) Lowering the eligibility of firm from the current panel listed
  - (b) De-listing from the Public Sector Panels of Consultants
- 4.1.2 Only firms, which BCA considers as having met the qualifying criteria to undertake contracts of a nature and size as required under the relevant panel and discipline applied for, shall be considered for listing. Notwithstanding the aforesaid, the requirements stipulated shall be taken as defining only the minimum requirements expected of an applicant. BCA is not bound to accept any application notwithstanding that the applicant may have complied with these minimum requirements.
- 4.1.3 BCA is not bound to accept any application notwithstanding that the applicant may have complied with the minimum requirements as set forth in this brochure.
- 4.1.4 Firms which are debarred by the Ministry of Finance will be refused listing for the duration stated in the debarment order. They may apply for consideration to be listed / re-listed after the debarment period has lapsed.
- 4.1.5 BCA may publish information on projects handled by the firms on the PSPC.
- 4.1.6 BCA shall be under no obligation to assign any reason for accepting or rejecting any application, downgrading or lowering the eligibility of any firm, or de-listing any firm.

- 4.1.7 Notwithstanding the listing status, there is no guarantee that the firms will be appointed to undertake any public sector projects under the PSPC. Public sector agencies are not precluded from procuring consultancy services for any projects (regardless of the nature and value of the project) through procurement systems / methods other than the PSPC/QFM.
- 4.1.8 Firms listed on the PSPC shall be obliged to furnish particulars and information requested by BCA, for the purpose of obtaining data for survey purposes pertaining to PSPC, QFM and other related policies. Consultant or employee of the firm shall furnish the particulars and information to the best of his or her knowledge and belief. In addition, BCA may periodically require listed firms to furnish pertinent particulars to BCA for the purpose of assessing the eligibility of their continued listing with BCA. Failure to comply with such requirements may result in de-listing.

## **4.2 Update of Firms' Particulars**

- 4.2.1 Consultancy firms that are listed on the PSPC shall advise BCA immediately of any changes in its management status, address, personnel resources or any other pertinent information relating to the firm's eligibility for listing on the relevant panel, which may occur from time to time.
- 4.2.2 Notification of change of firm's particulars should be file online at this website <https://www.bca.gov.sg/pspc/> with the supporting documents.

## **4.3 Validity**

- 4.3.1 The validity of any listing is for a period up to 31 March of each year. Listing will thereafter lapse automatically unless a renewal is filed and approved by BCA. Applications for renewal are to be submitted online and one month before the expiry of the validity period. If an application to renew a listing is submitted less than one month before the date of expiry of the listing, the listing may not be renewed before the expiry date.
- 4.3.2 There is no pro-rating of processing fees for applications after 1 April of each year.

## **4.4 Revisions**

- 4.4.1 The Government or BCA may from time to time revise the PSPC system, these Terms of Listing, and the Listing Criteria as it deems fit. Such revision may include addition to or amendment of the requirements for listing for any panel or for listing generally.





## LISTING CRITERIA FOR PUBLIC SECTOR PANELS OF CONSULTANTS (PSPC)

### ARCHITECTURAL CONSULTANCY FIRMS

(i) **Common Criteria**

Corporation (limited/unlimited), partnership (multi-disciplinary/limited liability) must be licensed with the Board of Architects.

(ii) **Specific Criteria**

**Criteria for PANEL AR04**

- (a) 1 registered professional with the respective professional body supported by 1 professional with recognised professional qualifications<sup>1</sup>

**Criteria for PANEL AR03**

- (a) 2 registered professionals with the respective professional body  
(b) Expected to have completed a project above S\$1.5M in the past 5 years  
(c) 1 technical or professional staff has attended the course on Code of Practice on Buildable Design conducted by BCA<sup>2</sup>

**Criteria for PANEL AR02**

- (a) 3 registered professionals with the respective professional body  
(b) Expected to have completed a project above \$5M in the past 5 years  
(c) Obtained ISO 9001:2008 certification in the discipline applied for  
(d) 1 technical or professional staff has attended the course on Code of Practice on Buildable Design conducted by BCA<sup>2</sup>  
(e) 1 technical or professional staff has successfully attended the Certification Course for Green Mark Manager (GMM) conducted by BCA<sup>2</sup>  
(f) 1 technical or professional staff has successfully attended the Certification Course for Universal Design (UD) Assessor conducted by BCA<sup>2,3</sup>

**Criteria for PANEL AR01**

- (a) 4 registered professionals with the respective professional body  
(b) Expected to have completed a project above \$15M in the past 5 years  
(c) Insured with a Professional Indemnity Insurance (PII) of at least \$0.5M  
(d) Obtained ISO 9001:2008 certification in the discipline applied for  
(e) Obtained ISO 14001:2004 certification in the discipline applied for  
(f) 1 technical or professional staff has attended the course on Code of Practice on Buildable Design conducted by BCA<sup>2</sup>  
(g) 1 technical or professional staff has successfully attended the Certification Course for Green Mark Manager (GMM) conducted by BCA<sup>2</sup>  
(h) 1 technical or professional staff has successfully attended the Certification Course for Universal Design (UD) Assessor conducted by BCA<sup>2,3</sup>

<sup>1</sup> Refers to a relevant recognised degree in Architecture. The list of recognised degrees in Architecture could be obtained from BOA.

<sup>2</sup> For firms that do not satisfy this requirement, please submit confirmation letter on successful placement for the course. The Certificate of Attendance is to be furnished subsequently upon successful completion of the course.

<sup>3</sup> This requirement is only applicable to AR firms listed in PSPC from 1 April 2013 onwards

## CIVIL & STRUCTURAL ENGINEERING CONSULTANCY FIRMS

### (i) Common Criteria

Corporation (limited/unlimited), partnership (multi-disciplinary/limited liability) must be licensed with the Professional Engineers Board.

### (ii) Specific Criteria

#### Criteria for PANEL CS04

- (a) 1 registered professional with the respective professional body supported by 1 professional with recognised professional qualifications<sup>4</sup>

#### Criteria for PANEL CS03

- (a) 2 registered professional with the respective professional body
- (b) Expected to have completed a project above \$1.5M in the past 5 years
- (c) 1 technical or professional staff has attended the course on Code of Practice on Buildable Design conducted by BCA<sup>5</sup>

#### Criteria for PANEL CS02

- (a) 3 registered professionals with the respective professional body
- (b) Expected to have completed a project above \$5M in the past 5 years
- (c) Obtained ISO 9001:2008 certification in the discipline applied for
- (d) 1 technical or professional staff has attended the course on Code of Practice on Buildable Design conducted by BCA<sup>5</sup>

#### Criteria for PANEL CS01

- (a) 4 registered professionals with the respective professional body
- (b) Expected to have completed a project above \$15M in the past 5 years
- (c) Insured with a Professional Indemnity Insurance (PII) of at least \$0.5M
- (d) Obtained ISO 9001:2008 certification in the discipline applied for
- (e) Obtained ISO 14001:2004 certification in the discipline applied for
- (f) 1 technical or professional staff has attended the course on Code of Practice on Buildable Design conducted by BCA<sup>5</sup>

<sup>4</sup> Refers to a relevant recognised degree in Civil/Structural Engineering. The list of recognised degrees in Civil/Structural Engineering could be obtained from PEB

<sup>5</sup> For firms that do not satisfy this requirement, please submit confirmation letter on successful placement for the course. The Certificate of Attendance is to be furnished subsequently upon successful completion of the course.

## MECHANICAL & ELECTRICAL ENGINEERING CONSULTANCY FIRMS

### (i) **Common Criteria**

Corporation (limited/unlimited), partnership (multi-disciplinary/limited liability) must be licensed with the Professional Engineers Board.

### (ii) **Specific Criteria**

#### **Criteria for PANEL ME04**

- (a) 1 registered professional with the respective professional body supported by 1 professional with recognised professional qualifications<sup>6</sup>

#### **Criteria for PANEL ME03**

- (a) 2 registered professional with the respective professional body
- (b) Expected to have completed a project above \$1.5M in the past 5 years

#### **Criteria for PANEL ME02**

- (a) 3 registered professionals with the respective professional body
- (b) Expected to have completed a project above \$5M in the past 5 years
- (c) Obtained ISO 9001:2008 certification in the discipline applied for
- (d) 1 technical or professional staff has successfully attended the Certification Course for Green Mark Manager (GMM) conducted by BCA<sup>7</sup>

#### **Criteria for PANEL ME01**

4 registered professionals with the respective professional body

- (a) Expected to have completed a project above \$15M in the past 5 years
- (b) Insured with a Professional Indemnity Insurance (PII) of at least \$0.5M
- (c) Obtained ISO 9001:2008 certification in the discipline applied for
- (d) Obtained ISO 14001:2004 certification in the discipline applied for
- (e) 1 technical or professional staff has successfully attended the Certification Course for Green Mark Manager (GMM) conducted by BCA<sup>7</sup>

<sup>6</sup> Refers to a relevant recognized degree in Mechanical/Electrical Engineering. The list of recognized degrees in Mechanical/Electrical Engineering could be obtained from PEB.

<sup>7</sup> For firms that do not satisfy this requirement, please submit confirmation letter on successful placement for the course. The Certificate of Attendance is to be furnished subsequently upon successful completion of the course.

## QUANTITY SURVEYING CONSULTANCY FIRMS

(i) **Specific Criteria**

**Criteria for PANEL QS04**

- (a) 1 degree holder<sup>8</sup> supported by 1 diploma holder<sup>9</sup>

**Criteria for PANEL QS03**

- (a) 2 degree holders<sup>8</sup>, 1 of whom is expected to have completed a project above \$1.5M (in the past 5 years) as a project QS  
(b) Firm is expected to have completed a project above \$1.5M in the past 5 years

**Criteria for PANEL QS02**

- (a) 3 degree holders<sup>8</sup>, 1 of whom is expected to have completed a project above \$5M (in the past 5 years) as a project QS  
(b) Firm is expected to have completed a project above \$5M in the past 5 years  
(c) Obtained ISO 9001:2008 certification in the discipline applied for

**Criteria for PANEL QS01**

- (a) 4 degree holders<sup>8</sup>, 1 of whom is expected to have completed a project above \$15M (in the past 5 years) as a project QS  
(b) Firm is expected to have completed a project above \$15M in the past 5 years  
(c) Obtained ISO 9001:2008 certification in the discipline applied for  
(d) Obtained ISO 14001:2004 certification in the discipline applied for

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<sup>8</sup> Degree holder in Architecture, Building, Construction-related Engineering or equivalent

<sup>9</sup> Diploma holder in Architecture, Building, Construction-related Engineering or equivalent

## PROJECT MANAGEMENT FIRMS

### (i) Specific Criteria

#### Criteria for PANEL PM02

- (a) 3 degree holders<sup>10</sup>, 1 of whom is expected to have completed a project above \$3M (in the past 5 years) as a Project PM<sup>11</sup>

#### Criteria for PANEL PM01

- (a) 4 degree holders<sup>10</sup>, 1 of whom is expected to have completed a project above \$50M (in the past 5 years) as a Project PM<sup>11</sup>
- (b) Firm must have completed at least 3 projects as project manager, each is expected to be above \$8M in the past 5 years
- (c) Obtained ISO 9001:2008 certification in the discipline applied for
- (d) Obtained ISO 14001:2004 certification in the discipline applied for

### New 4-Panel PM Services (Effective from 1 April 2013)

### (i) Specific Criteria

#### Criteria for Panel PM04

- a) 1 degree holder<sup>10</sup> supported by 1 diploma holder<sup>12</sup>
- b) 1 of the above 2 personnel is expected to have completed a project above \$3M (within the past 5 years) as a Project PM<sup>11</sup>

#### Criteria for Panel PM03

- a) 2 degree holders<sup>10</sup>, 1 of whom is expected to have completed a project above S\$10M (in the past 5 years) as a Project PM<sup>11</sup>
- b) Firm must have completed at least 3 projects as project manager, each is expected to be above S\$10M within the past 5 years
- c) Obtained ISO 9001:2008 certification in the discipline applied for

#### Criteria for Panel PM02

- a) 3 degree holders<sup>10</sup>, 1 of whom is expected to have completed a project above \$30M (in the past 5 years) as a Project PM<sup>11</sup>
- b) Firm must have completed at least 3 projects as project manager, each is expected to be above \$30M within the past 5 years
- c) Obtained ISO 9001:2008 certification in the discipline applied for
- d) Obtained ISO 14001:2004 certification in the discipline applied for
- e) 1 project manager has attended the course on Code of Practice on Buildable Design conducted by BCA<sup>13</sup>
- f) 1 project manager has successfully attended the Certification Course for Green Mark Manager (GMM) conducted by BCA<sup>13</sup>
- g) 1 project manager has successfully attended the Certification Course for Universal Design (UD) Assessor conducted by BCA<sup>13</sup>

**Criteria for Panel PM01**

- a) 4 degree holders<sup>10</sup>, 2 of whom are expected to have completed 1 project above \$65M (in the past 5 years) as a Project PM<sup>11</sup>
- b) Firm must have completed at least 3 projects as project manager, each is expected to be above \$65M within the past 5 years
- c) Obtained ISO 9001:2008 certification in the discipline applied for
- d) Obtained ISO 14001:2004 certification in the discipline applied for
- e) 1 project manager has attended the course on Code of Practice on Buildable Design conducted by BCA<sup>13</sup>
- f) 1 project manager has successfully attended the Certification Course for Green Mark Manager (GMM) conducted by BCA<sup>13</sup>
- g) 1 project manager has successfully attended the Certification Course for Universal Design (UD) Assessor conducted by BCA<sup>13</sup>

<sup>10</sup> Degree holder in Architecture, Building, Construction-related Engineering or equivalent

<sup>11</sup> Project PM refers to appointment by client/developer to provide solely project management services

<sup>12</sup> Diploma holder in Architecture, Building, Construction-related Engineering or equivalent

<sup>13</sup> For firms that do not satisfy this requirement, please submit confirmation letter on successful placement for the course. The Certificate of Attendance is to be furnished subsequently upon successful completion of the course. This requirement is only applicable to PM firms listed in PSPC from 1 April 2013 onwards.



## PUBLIC SECTOR PANELS OF CONSULTANTS (PSPC)

### Application Form

### New/Additional/Upgrading

### PSPC 01

Address : 5 Maxwell Road, #02-00, Tower Block,  
MND Complex, Singapore 069110

Toll-free line : 1800-342 5222

Fax : 6324 0346

Email : bca\_enquiry@bca.gov.sg

### INSTRUCTIONS

1. Please refer to the *Public Sector Panels of Consultants (PSPC) Terms of Listing* before completing this Application Form.
2. For application on new listing, additional and upgrading, please fill in all the relevant portions of the form. For change of particulars (including renewal and transfer of entity), please only fill in portions that you wish to update.
3. You will need the following information to fill in the form:
  - Firm's particulars
  - Firm's professional personnel qualification details
  - Track record and client's assessment details
  - Details of staff nominated for mandatory training course(s) approved by BCA
4. A non-refundable processing fee is payable for each panel applied including transfer of entity (i.e. sole-proprietor/partnership firms being incorporated). Payment can be made by NETS, Cashcard, Credit cards (Master/Visa) or GIRO (existing account holder only).
5. Application form for GIRO can be downloaded from the Public Sector Panels of Consultants webpage at [www.bca.gov.sg](http://www.bca.gov.sg) or at the Panels of Consultants counter.
6. Please note the following for submission:
  - Application form (to be duly signed) in hardcopy, and
  - All supporting documents and the application form (to be duly signed) in softcopy (in a CD-ROM) [Please refer to Annex 1 for instruction]

### DECLARATION

I, \_\_\_\_\_ (Name in Block letters) \_\_\_\_\_ (NRIC/Passport No.) do solemnly and sincerely declare that the facts contained in the documents submitted are true in substance to the best of my knowledge, information and belief and I make this declaration conscientiously believing the same to be true. I authorise the Authority to conduct any enquiries on the particulars furnished herein as the Authority deems fit, and accept that neither the Authority nor its officer shall be held liable for any loss, injury or damages howsoever caused by the Authority's processing of and decision on this application.

I understand that the provision of a false declaration or false information is a serious offence and may also result in penalties to my firm including the suspension of my firm from participating in public sector tenders.

\_\_\_\_\_  
Signature and Company Stamp

\_\_\_\_\_  
Designation

\_\_\_\_\_  
Date

<b>Disciplines</b>	<b>Panels</b>	<b>Listing Codes</b>	<b>Processing Fees Amount(Incl GST)</b>
Architectural Civil & Structural Mechanical & Electrical Quantity Surveying	1	AR01 CS01 ME01 QS01	\$132
Architectural Civil & Structural Mechanical & Electrical Quantity Surveying	2	AR02 CS02 ME02 QS02	\$99
Architectural Civil & Structural Mechanical & Electrical Quantity Surveying	3	AR03 CS03 ME03 QS03	\$66
Architectural Civil & Structural Mechanical & Electrical Quantity Surveying	4	AR04 CS04 ME04 QS04	\$33
Project Management	1	PM01	\$99
Project Management	2	PM02	\$33



## APPLICATION

Please mark "X" on your choice of application type in the relevant box below

**New application**

**Additional and / or Upgrading application**

**Renewal**

- **Update of Personnel Records**

- **Update of Firm Track Records**

### Details of new, additional or upgrading applications

No	Applied Listing Code	Existing Grade (for upgrading application only)	<i>For Official Use Only</i>
1.			
2.			
3.			
4.			
5.			

<b>PART 1: FIRM'S INFORMATION</b>				
Name Of Firm:				
Business Address:				
Office Tel No.:		Type of firm (please select where applicable) <input type="checkbox"/> Sole Proprietor (ACRA Registered) <input type="checkbox"/> Sole Proprietor (Non-ACRA Registered) <input type="checkbox"/> Partnership / Limited Liability Partnership (ACRA Registered) <input type="checkbox"/> Partnership (Non-ACRA Registered) <input type="checkbox"/> Private Limited (ACRA Registered)		
Fax No.:				
E-mail Address:				
<b>For firms registered with Accounting &amp; Corporate Regulatory Authority (ACRA) (please attach a copy of ACRA's business profile)</b>				
UEN No.:				
ACRA Registration Date:				
<b>Company Ownership</b> (for Partnership / Limited Liability Partnership / Sole Proprietor firms)				
Name of sole-proprietor / partners		NRIC / Passport No./ UEN No.		Percentage of shares held
1)				
2)				
3)				
4)				
<b>Subsidiaries and Associated Companies</b>				
Name of Subsidiary / Associated / Affiliated Firms		UEN No.		Percentage of Applicant's Share in the Company
1)				
2)				
<b>Firm's Contact Person and Designation</b>				
Applied Panel	Name	Designation	Mobile No.	Email Address
1)				
2)				
3)				
4)				

Enter 'NIL' where applicable. Do not leave any blanks

5)				
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<p><b>Joint Venture</b></p> <p>For new application of a joint venture as a single entity, the joint venture is to submit the PSPC application form as a single entity except for Part 3: Track Record Project Details. The track record can be a project undertaken by one of the joint venture partners. However, this is a one-time exemption for new listing and the joint venture firm is not allowed to renew its listing using completed projects of its joint venture partners. At renewal, the joint venture firm shall meet the track record requirement using projects completed by the joint venture firm itself.</p> <p><b>Note:</b> For joint venture on project basis (i.e. the joint venture is not a single entity), all partnering firms of the project joint venture must be PSPC registered and one firm shall be named as managing partner. Such project-based joint venture is not required to be registered with PSPC.</p>	
Name of Joint Venture Firms	Percentage of Share in the Joint Venture
1)	
2)	

Enter 'NIL' where applicable. Do not leave any blanks

## PART 2: PROFESSIONAL PERSONNEL

Please refer to the criteria on personnel requirements as stipulated in the PSPC Terms of Listing. Please attach copies of the relevant educational certificates and practising certificates of the personnel listed here for verification.

No	Name	NRIC No./ FIN	Designation	Qualification/ Discipline	Institution (Year of Grad)	BOA/PEB's Registration No
<i>E.g</i>	<i>Tony Tan</i>	<i>S1234567X</i>	<i>Director</i>	<i>Degree Civil Engineering</i>	<i>NUS (1988)</i>	<i>PE no. 1234</i>
1						
2						
3						
4						
5						

Enter 'NIL' where applicable. Do not leave any blanks

## PART 3(i): TRACK RECORD PROJECT DETAILS

### Information of Track Record<sup>1</sup>

The completed Part 3(i) is to be sent to your client's representative (responsible for the supervision of the project) for assessment and endorsement. Your client's representative shall assess your performance for the track record indicated in Part 3(i) using Form Part 3(ii). The track record must be accompanied with a *Certificate of Statutory Completion*<sup>2</sup>.

<b>Name of Applicant Firm:</b>	
<b>Discipline:</b>	
<b>Project Title</b>	
<b>Involvement in project</b> (eg masterplanning, design, supervision )	
<b>Contract No:</b> <input type="text"/>	<b>Building Plan No:</b> <input type="text"/>
<b>Project Value (S\$):</b>	<input type="text"/>
<b>Certificate of Statutory Completion (CSC) Date or Completion Certificate date or other Statutory Completion Date (dd/mm/yy):</b>	<input type="text"/>

<sup>1</sup> Refers to *one completed project* undertaken by the applicant firm during the past five years, which should be of value at least equal to that as indicated in the Listing Criteria for the particular panel sought.

<sup>2</sup> For projects which would obtain CSC, please provide the CSC certificate or equivalent. For projects which CSC is not required, please provide the Completion Certificate.

Enter 'NIL' where applicable. Do not leave any blanks

### PART 3(ii): PROJECT PERFORMANCE ASSESSMENT

The Client's representative is required to verify and assess the consultants' performance of the project given in Part 3(i). **For public sector projects:** If this report is assessed by the project manager, the government agency concerned must countersign on the report.

Grade	Excellent	Good	Satisfactory or Average	Room for improvement	Below expectations
Score	9-10	7-8	5-6	3-4	0-2

<b>Project Title:</b>	
<b>Contract No.:</b>	

#### AREAS OF EVALUATION

(i) Quality of services	Score
A Quality of Service at Preliminary Design Stage <i>(including feasibility study, sketch design, estimate preliminary proposal, comprehension of nature and extent of work involved)</i>	
B Quality of Service at Design Development and Tender Stage <i>(including working drawings, tender documents, actual surveying, preliminary report and proposal development)</i>	
C Quality of Service during Construction and Defects Liability Period <i>(including site supervision, contract administration, control of production process and final report)</i>	

(ii) Quality of Management	Score
D Adequacy of Resources Deployed and Support by Main Office	
E Response to Instruction	
F Response to problems and changing circumstances	
G Co-ordination with Others	
H Rate of Progress	
I Cost Control	
J Timeliness	
<b>TOTAL SCORE</b>	
<b>OVERALL PERFORMANCE = TOTAL SCORE ÷ 10</b>	

**Client's Representative's Comments** (If a score is graded "Room for improvement" or "Below expectations", cite reasons or incidents for the assessment): \_\_\_\_\_

Official Stamp of Client	Client's Representative's Signature / Date

Enter 'NIL' where applicable. Do not leave any blanks

**Particulars of Client (Public Sector Agency / Developer / Owner)**

<b>Name Of Client:</b>		
Business Address:		
Postal Code:		
Office Tel:		
Fax:		
E-mail:		
<b>Name of Client's Representative:</b>		
<b>Designation :</b>		

**Particulars of Client's Project Manager (PM)**

*(Only applicable if assessment is made in conjunction with project manager's input)*

<b>Name Of Client's Project Manager's Firm:</b>		
Business Address:		
Postal Code:		
Office Tel:		
Fax:		
E-mail:		
<b>Name of Client's PM Firm's Representative:</b>		
<b>Designation :</b>		
<hr/> Official Stamp of Client's Project Manager's Firm		<hr/> Client's PM Firm's Representative Signature / Date

Enter 'NIL' where applicable. Do not leave any blanks

### PART 3(iii): VERIFICATION FOR QS AND PM PROFESSIONALS' TRACK RECORDS

For QS01, QS02, QS03 and PM01, PM02: Please obtain the client's verification for the track record of one of the degree holders (declared in Part 2) as a Project Quantity Surveyor / Project PM, for a completed project above the value stipulated in the Listing Criteria for the past five years.

<b>Name of Professional:</b>			
<b>Discipline:</b>			
<b>Designation:</b>			
<b>Project Title</b>			
<b>Involvement in project</b> (eg masterplanning, design, supervision)			
<b>Contract No:</b>	<input style="width: 95%;" type="text"/>	<b>Building Plan No:</b>	<input style="width: 95%;" type="text"/>
<b>Project Value (\$\$):</b>	<input style="width: 95%;" type="text"/>		
<b>CSC Date (or other Statutory Completion Date) or Completion Certificate Date</b> (dd/mm/yy):	<input style="width: 95%;" type="text"/>		

#### Particulars of Client (Public Sector Agency / Developer / Owner)

<b>Name Of Client:</b>			
Business Address:			
Postal Code:			
Office Tel and Fax:			
E-mail:			
<b>Name of Client's Representative:</b>			
<b>Designation :</b>			
Official Stamp of Client	Client's Representative's Signature / Date		



Enter 'NIL' where applicable. Do not leave any blanks

**PART 4: REQUIREMENTS FOR MANDATORY TRAINING**

Please refer to the training requirements for the different disciplines in the PSPC Terms of Listing. Firms applying to be listed in a particular discipline have to ensure that at least one of its technical or professional staff has attended the training course stated in the Terms of Listing.

For firms that do not have any staff who has attended the required training course, please indicate the details of intended staff for the respective mandatory courses in Part 4(i), and ensure that at least one of your technical or professional staff will attend the course within a period of 6 months upon approval of your firm's listing application in Part 4(ii). You are required to submit your Certificate of Attendance to the PSPC counter together with Part 4(i) upon successful completion of the course.

**PART 4(i): STAFF HAS ATTENDED/ WILL BE ATTENDING\* MANDATORY TRAINING AS REQUIRED UNDER THE PSPC TERMS OF LISTING**

Please complete table below and attach the Certificate of Attendance as proof of attendance. If the mandatory training requirements have yet to be fulfilled, please indicate the details of intended staff for the respective mandatory courses and fill in the "Date of Attendance" section with "**Will Be Attending**"

<b>Name of Course</b>	BDAS/ i-BDAS/ Code of Practice on Buildable Design*	Green Mark Manager
<b>Date of attendance:</b>		
<b>Name of Staff:</b>		
<b>NRIC No /FIN. :</b>		
<b>Designation:</b>		

\*Delete as appropriate

**PART 4(ii): UNDERTAKING TO SEND STAFF FOR MANDATORY TRAINING**

Please complete undertaking to send at least one technical or professional staff for the training course required under the PSPC Terms of Listing.

I, \_\_\_\_\_ (Name in Block letters) \_\_\_\_\_ (NRIC No./FIN/ Passport No.) do solemnly and sincerely declare that my firm will ensure that at least one technical or professional staff will successfully complete the training courses shown in part 4(i) respectively as required under the PSPC Terms of Listing **within six months** from the approval date of my firm's listing on PSPC. I will submit the Certificate of Attendance as proof of attendance to maintain my firm's listing status. I authorize the Authority to conduct any enquiries on the particulars furnished herein as the Authority deems fit, and accept that neither the Authority nor its officer shall be held liable for any loss, injury or damages howsoever caused by the Authority's processing of and decision on this application.

_____ Signature and Stamp of Company	_____ Designation	_____ Date
-----------------------------------------	----------------------	---------------

## Document Checklist

Please check against the checklist below to ensure that your application is complete before submission.

For Official

Use Only

### DOCUMENTS SUBMISSIONS REQUIREMENTS

i.  Application form (to be duly signed) in **hardcopy** (*Hardcopy of photocopied supporting documents are not required*)

ii.  All supporting documents and the application form (to be duly signed) in **softcopy** (in a CD-ROM). [Please refer to Annex 1 for instruction]

### PART 1: Firm's Information

1.  Declaration form

2.  A copy of certificate of Licensed Corporation (from PEB or BOA), if applicable.

3.  A copy of Business Profile from Accounting & Corporate Regulatory Authority (ACRA) (for ACRA registered firms)

4.  For "**Transfer of Entity**", a declaration from sole proprietor or partner(s) that the sole proprietor/partnership firm has been incorporated. (For non-ACRA registered firms)

### PART 2: Professional Personnel

5.  A copy of the relevant / Practising Certificates and Educational Certificates for the professional personnel.

### PART 3: Track Records (FOR ALL EXCEPT AR04, CS04, ME04 & QS04, PM02)

6.  Include a copy of Certificate of Statutory Completion (CSC) (or equivalent) or Completion Certificate for the track record submitted.

### PART 4: Requirements for Mandatory Training

7.  Complete either Part 4(i) or Part 4(ii).  
Part 4(i): Attach a copy of the Certificate of Attendance for the training course required.

Part 4(ii): Attached proof of course registration.

Submit a Certificate of Attendance (attended by at least one of your technical or professional staff) for the training course required to the PSPC counter together with Part 4(i). This is to be done within a period of 6 months upon approval of your firm's listing application.

### OTHER SUBMISSIONS

8.  **For AR01 & AR02, CS01 & CS02, ME01 & ME02, QS01 & QS02 and PM01:** copy of ISO 9001:2008 Certificate.

A

9.  **For AR01, CS01 and ME01:** copy of Professional Indemnity Insurance (PII) purchased of at least \$0.5M.

A

The supporting documents and the application form are be scanned and saved in pdf format as follows,

Document Type	File Name	Remarks
Application Form	Application form	
ACRA Report	Company - ACRA	
ISO 9001:2008 Certificate	Company - ISO9000 cert	
Professional Indemnity Insurance	Company - Insurance	
Firm's BOA/PEB practising Certificate (not applicable for Soleproprietorship/ Partnership)	Company - Practising cert	
Firm's Track Record - Certificate of Statutory Completion (CSC) (or equivalent) or Completion Certificate	Company - Track record - Cert Company - Track record – Cert [xxx]	Replace [xxx] with <b>(1), (2) or (3) in same the order of the firm's track records entered</b> in the application form submitted (for PM)
Educational Certificate	Personnel - Education cert - [xxxxx]	Replace [xxxxx] with <b>personnel's name</b>
Personnel's Practising Certificate	Personnel - Practising cert - [xxxxx]	Replace [xxxxx] with <b>personnel's name</b>
Personnel's Track Record - Certificate of Statutory Completion (CSC) (or equivalent) or Completion Certificate	Personnel - Track Record - [xxxxx]	Replace [xxxxx] with <b>personnel's name</b> (For PM & QS)
Buildable Design Appraisal System (BDAS) / Integrated Buildable Design Appraisal System (i-BDAS) / Code of Practice on Buildable Design Course Certificate	Training - BDAS Cert	
Green Mark Manager Course Certificate	Training - GMM Cert	
Others		Name the document deemed appropriate.

Note:

1. Hardcopy of photocopied supporting documents not required
2. For multi-disciplinary application, sort the documents into the respective folders using the panel applied (e,g, AR01, CS02) as the name of the folder.



**APPENDIX 7-1-7**  
**NOTE & FORMAT FOR**  
**CONSULTANT REGISTRATION**  
**SYSTEM**



**NOTE FOR PROVIDING DATA OF CONSTRUCTION CONSULTANT REGISTRATION (1)**

[Basic & Financial data]

1. The name of construction consultant
2. The address of head office
  - Telephone number
  - Fax number
  - Website
3. The address of representative office or branch office (If any)
4. Decision of establishment
  - Decision no
  - Date of issuance
  - Organization issuing decision
5. Business registration certificate
  - Certificate no
  - Date of certificate
  - Organization issuing certificate
6. Investment certificate (for foreign company)
  - Certificate no
  - Date of certificate
  - Organization issuing certificate
7. Type of company
  - Limited liability company / Shareholding company / Partnership / Private company: *to be selected*
8. Operation field and .Construction activity fields: *to be tick in matrix*
  - Operation field: Planning / Feasibility study / Project management / Survey / Design / Design verification / Supervision / Inspection / Certification / Assessment
  - Construction activity fields: Civil / Industry / Transportation / Irrigation / Infrastructure: *in accordance with decree 209*
9. Financial figures in three recent years: *audited financial statement or financial statement to be enclosed*
  - a) Paid-up capital: *Balance Sheet Code 411*
  - b) Equity: *Balance Sheet Code 400*
  - c) Turnover in each operation field: *Results of Business Activities Code 01 for Total Turnover*
  - d) Profit after enterprise income tax: *Results of Business Activities Code 60*
  - e) Enterprise income tax: *Results of Business Activities Code 51, certificate of tax payment to be enclosed*

**NOTE FOR PROVIDING DATA OF CONSTRUCTION CONSULTANT REGISTRATION (2)**

[Technical data]

10. Staff information
  - a) General information
    - Total number, of which
    - Number of management
    - Number of university degree and above holder
    - Number of college graduate
    - Number of skilled technical workers
  - b) Professional (Qualified) staff number registered in Qualification Database in CAMD :  
*professional means a) Architect, b) Engineer, c) Supervisor, d) Project Manager and e) Cost Estimator*
11. Manager list with format in CRG2 Appendix I for engineering (Feasibility study / Project management / Survey / Design / Design verification ) in accordance with Decree 12:  
*certificate to be enclosed, if any*
12. Quality management system ISO 9000 certificate: *If certified, copy of certificate to be enclosed*
13. Completed packages (maximum three packages) in each operation field in three years with format in CRG2 Appendix II
  - 1) Package name
  - 2) Location (province)
  - 3) Project name
  - 4) Project category in accordance with decree 12
  - 5) Work type in accordance with construction law & decree 209
  - 6) Work grade in accordance with regulation of quality management
  - 7) Joint Venture details with shares (in case of JV)
  - 8) Contract amount (shared amount)
  - 9) Dates of commencement & completion
  - 10) Project owner name
  - 11) Contract agreement & Final acceptance: *to be enclosed*
14. Ongoing packages (maximum three packages) in each operation field with format in CRG2 Appendix III
  - 1) Package name
  - 2) Location (province)
  - 3) Project name
  - 4) Project category in accordance with decree 12
  - 5) Work type in accordance with construction law & decree 209
  - 6) Work grade in accordance with regulation of quality management
  - 7) Joint Venture details with shares (in case of JV)
  - 8) Contract amount (shared amount)
  - 9) Dates of commencement & completion
  - 10) Project owner name



**Construction Consultant Registration**

**[basic & financial data]**

items		details										remarks
1	Name of construction consultant											
2	Address of head office											
	Telephone number											
	Fax number											
	Website											
3	Address of representative office or branch office											
4	Decision of establishment											
	Decision number											
	Date of issuance											
	Organization issuing decision											
5	Business registration certificate											
	certificate number											
	Date of certificate											
	Organization issuing certificate											
6	Investment certificate (for foreign company)											
	certificate number											
	Date of certificate											
	Organization issuing certificate											
7	Type of company	Limited liability company / Shareholding company / Partnership / Private company										select in accordance with decree 43
8	Operation field & Construction activity field	Planning	Feasibility study	Project management	Survey	Design	Design verification	Supervision	Inspection	Certification	Assessment	to tick appropriate cells
	Civil											
	Industry											
	Transport											
	Irrigation											
	Infrastructure											
9	Financial figures	first year (year 20XX)			second year (year 20XX)			third year (year 20XX)				audited financial statement or financial statement to enclose
	a) Paid-up capital											
	b) Equity											
	c) Turnover in Planning											
	Ditto in Feasibility studies											
	Ditto in Project management											
	Ditto in Survey works											
	Ditto in Design works											
	Ditto in Design verification works											
	Ditto in Supervision works											
	Ditto in Inspection works											
	Ditto in Certification works											
	Ditto in Assessment works											
	Ditto in Others											
	Total Turnover											
	d) Profit after enterprise income tax											
	e) Enterprise income tax											
												certificate of tax payment to enclose

**Construction Consultant Registration**

**[technical data]**

items		details	remarks
10	Staff information		
	a) General information		
	Total number		
	of which Number of management		
	Number of university degree and above		
	Number of college graduate		
	Number of skilled technical workers		
	b) Professional staff		<i>Professional means a) Architect, b) Engineer, c) Supervisor, d) Project Manager and e) Cost Estimator registered in Qualification Database in CAMD</i>
	Number of Architect		
	Number of Engineer		
	Number of Supervisor		
	Number of Project Manager		
	Number of Cost Estimator		
11	Manager list	Refer to enclosed Manager List	<i>Manager for feasibility study, project management, survey, design and design verification to nominate (refer articles 41, 43, 45, 47, 48 &amp; 50 of Decree 12) Manager list (CRG2 Appendix I) to enclose Certificate of manager to enclose, if any</i>
12	Quality management system		<i>ISO 9000 certificate to enclose, if possessed</i>
13	Completed packages (max three) in each operation field in three years	Refer to enclosed List of Completed Works List	<i>List of Completed works (CRG2 Appendix II) to enclose Contract agreement &amp; Final acceptance to enclose</i>
14	Ongoing packages (max three) in each operation field	Refer to enclosed List of Ongoing Works	<i>List of Ongoing works (CRG2 Appendix III) to enclose Contract agreement to enclose</i>
15	Prize-won works		
16	Others		<i>free statement</i>
17	Full name of person providing information	name: _____, title: _____, telephone number: _____, email address: _____	<i>name, title, telephone and email address to fill up</i>
18	Commitment	Refer to enclosed letter	<i>Commitment letter (CRG2 Appendix IV)</i>







Format of Commitment

**Submission of Information for Registration System**

Attention to: the Construction Activity Management Department

My name:

Position

Representative of Company:

Address:

Phone:

Fax:

We herewith commit and confirm that all information, statements and enclosures in this submission for registration of our company are true and correct. In addition, we are ready to provide further information and clarification in this regard upon your request.

We hereby certify that we comply with all requirements and stipulations specified in the circular. We also understand that if we fail to comply with those in the circular, we may be subject to penalty imposed by you.

Yours faithfully,

**Legal representative of the consultant**

(Signature & seal)

**APPENDIX 7-1-8**  
**JACIC BROCHURE**





2010 / 8

# JACIC

The Key-Point Information Station  
that Helps You Shape the Future of the Construction Industry  
**Japan Construction Information Center**



# Improve efficiency in construction field

The Japan Construction Information Center (JACIC) was established on November, 1985 with authorization of the Minister of Land, Infrastructure, Transport and Tourism (Minister of Construction then), aiming to execute survey and research on information systems in construction field and provision of construction information service.

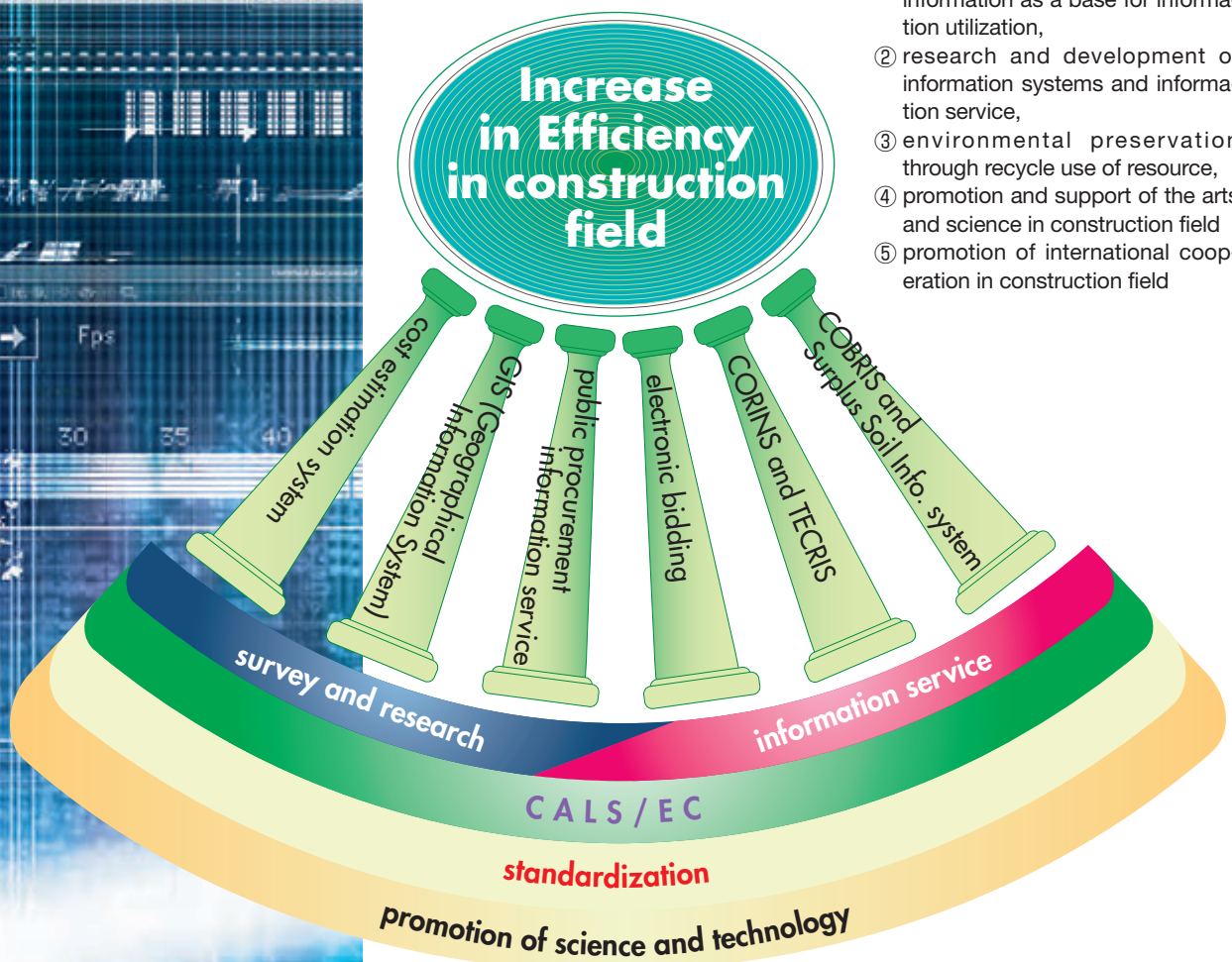
JACIC has promoted and prepared information sharing environment, where information (documents, drawings, etc.) generated in the process of infrastructure facility life cycle (survey, design, tendering, contracting, construction, maintenance, etc.) is managed in digital form and circulated through communication network, with avoiding re-input and enabling retrieval for reuse. Information sharing environment of this kind prevails all over the construction industry and improves efficiency and quality.

Especially, in order to rationalize tender and contract process, while preventing misbehavior in public works procurement, JACIC offers information service on construction and engineering consulting experience records (CORINS-TECRIS) and conducts development and improvement of e-bidding and associated systems, through recognizing and coordinating common requirement of both owners as national and local governments and contractors as private companies in construction field.

These services are conducted and performed in collaboration of the staff with rich experience and knowledge in administration of public works procurement and construction industry and the staff with expertise in information systems.

JACIC will expand our business in construction information field such as,

- ① standardization of construction information as a base for information utilization,
- ② research and development of information systems and information service,
- ③ environmental preservation through recycle use of resource,
- ④ promotion and support of the arts and science in construction field
- ⑤ promotion of international cooperation in construction field



- JACIC is the abbreviated name of Japan Construction Information Center.
- JACIC started application of ISO 9001:2000 to all the works on June 1, 2003, obtained the authenticator on December 18, 2003, and updated it on November 27, 2009. JACIC will make sound use of ISO and strive for further improvement in service for our customer
- CALS/EC is an initiative to realize productivity improvement and cost reduction in public works through information sharing and utilization throughout the process by digitization of information formerly exchanged with paper document and utilization of communication network.  
 CALS : Continuous Acquisitions and Life-cycle Support  
 EC : Electronic Commerce
- • IT : Information Technology  
 • ICT : Information & Communications Technology  
 • The word "ICT" is used in U-Japan initiative.



**I Computerization in Construction Field - CALS/EC-**

Under the recognition that the premise of the computerization is standardization in the construction field, The Infrastructure Information Standardization Committee composed of industry, academia and government was established in 2000. The committee has been promoting the standardization of information shared and exchanged over the life-cycle of infrastructure.

CALS/EC in the construction field intends to realize to reduce cost, to secure quality, and to increase the efficiency of public works through smooth exchanging, sharing, and linking information among organizations and at every phase of projects by using ICT.

JACIC is conducting education and dissemination activities of CALS/EC to various public works owners including local governments in order that "the CALS/EC Local Promotion Action Program (national version)" (June, 2001) is realized.

**II Research, Study, Development and Improvement on Information Technology**

JACIC has been conducting wide range of research, study, development and improvement of the systems which supports whole processes of public works such as survey, planing and design, bidding and contract, construction and maintenance by utilizing ICT, in order to realize CALS/EC initiative.

The lineups of CALS/EC related systems are CORINS/TECRIS, Cost Estimation System, Construction By-products Resource Information Exchange System, Surplus Construction Soil Information Exchange System, Electronic Bidding Core System. Besides development of those systems, research on electronic delivery, GIS, River Management and Disaster Prevention

Furthermore, we are conducting research and development and operation support of peripheral systems and of information linkage and better utilization.

**III Information Service System and Database**

Transparency, fareness and competitiveness are of primary importance in the governmental basic policy decided based on the law of promotion of securing quality of public works (enforced in April, 2005). This makes the CORINS and TECRIS more important.

JACIC has been working on development of the cost estimation system based on the new civil engineering works cost estimation element classification and is responsible for its full operation.

Moreover, the Construction By-products Resource Information Exchange System and Surplus Construction Soil Information Exchange System contribute to effective use of resources, and the environmental preservation of the country.

In the FY2010, we will support operation of the electronic bidding system and development of construction quality score database, start operation of the new retrieval system of the CORINS and TECRIS.

**IV International activity**

As for international contribution, JACIC has conducted information provision abroad, collected and introduced overseas information, and has been playing the contact role of a window for international relations in the construction field. We are also acting as a contact point for information standardization as we participate in the activities for international standardization of electronic bidding and CAD data as a member of representatives of Japan.

In the Asia region where economy is rapidly developing, it is important to promote mutual understanding and regional cooperation in the field of construction ICT. JACIC and the Japan Society of Civil Engineers have co-hosted the "Asian Construction IT Round-table Meeting (ACIT)" since 2006.

**V Promotion and Support of the arts and sciences**

JACIC has conducted research subsidy project and the construction information research institute has conducted research works responding to the business purpose of JACIC aiming at fostering the arts and sciences in the field of construction ICT.

We support "the contest of technical papers and reports on civil engineering project management" conducted by the Japan Federation of Construction Management Engineers Associations. It has been 5 years since we established the IT management award in the contest.

Moreover, JACIC provides seminars for the RCCM qualifying examination, certification and registration service of the new technology on civil engineering, and management of the CALS/EC qualification system.

**VI Public Relations**

We provide rich web page with new and affluent information widely collected, analyzed and accumulated, as well as databases of many kinds, as an outreach activity toward smooth and proper activation of economy and enrichment of life through JACIC's main responsibility to realize smooth execution of public procurement.

JACIC has developed and managed the portal site of the procurement information service so that each contractor can easily collect necessary information since the portal gathered procurement information of different sources.

Moreover, we are holding various lectures and seminars as well as publication and publicity work.

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## Standardization of information to support CALS/EC

### Development and promotion of information standards in construction field

Various efforts for computerization or systematization have been made in each field as information and communication technology progresses.

Then, it becomes more important to make standards and construct information infrastructures for exchanging and using necessary information and to secure the interoperability between systems.

JACIC has so far standardized various information in construction field such as construction works record registration, civil engineering cost estimation and GIS to support administration.

This achievement led to establishing standard department in the JACIC construction information institute as a specialized section in April 2000 to play a role for actively propeling standardization of information in construction field.

JACIC, through the Infrastructure Information Standardization Committee, will promote standardization of information mainly on those which influence multiple domains of construction where computerization is actively proceeded.

### ◎ The Infrastructure Information Standardization Committee and the Three-year Plan for Promoting Standardization of Infrastructure Information

The Infrastructure Information Standardization Committee was established in October 2000 responding the proposal by the “Standardization Vision on Construction Information” published in May 2000. The Committee is responsible to harmonize various existing standards, to develop new standards, and to promote and disseminate them. Individual standardization activity in the Committee is carried out in subcommittees in accordance with the “Three-year Plan for Promoting Standardization of Infrastructure Information”.

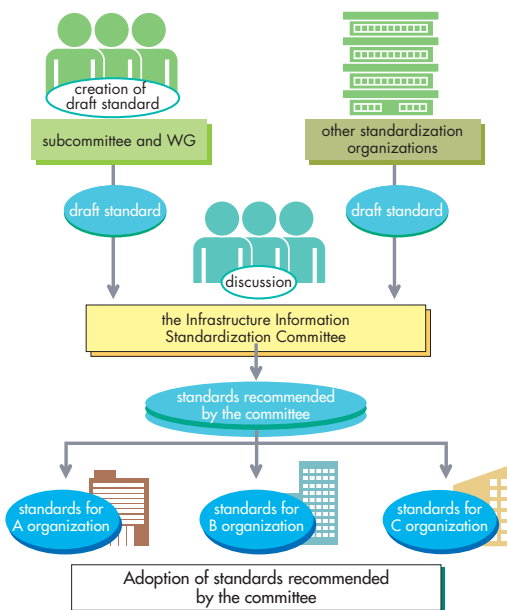
Major achievements in the first to the third three year plan (FY 2001 to FY 2009) are such as electronic delivery standard manuals and guidelines, standard for linking digital map with CAD data, completion of the two-dimensional CAD data exchange standard, standard functional requirement for information sharing system during construction period. Furthermore, e-delivery was fully operational and huge amount of infrastructure information in digital form has been accumulated steadily. However, current status of integrated utilization of the e-delivered data is still far beyond our expectation.

In recognizing it, the new vision “11 proposals for utilization of infrastructure information” was published in June 2009 and the new three-year plan “Infrastructure Information Standardization Promotion Plan 2010-2012” was determined in June 2010 based on the “11 proposals”. The new plan prospects to realize effective data circulation throughout the lifecycle, easy digital work flow for anyone including local municipalities and contractors, as well as user oriented implementation for maintenance stage.

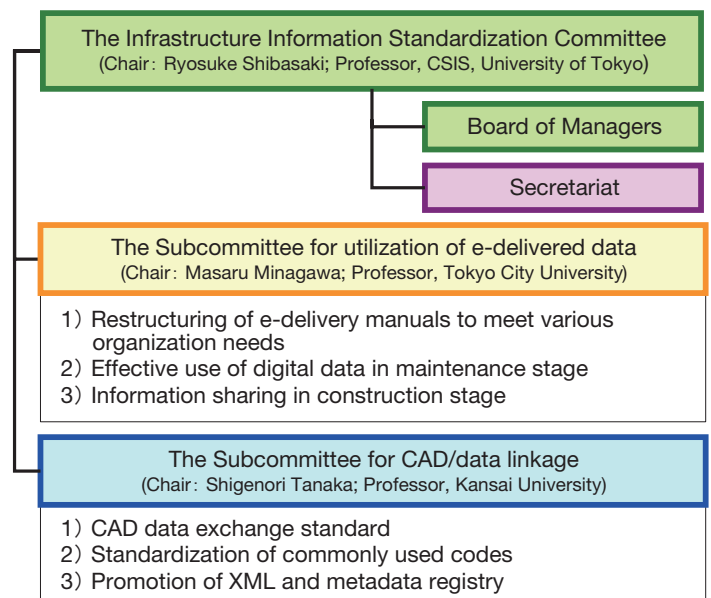
The Committee reviews, recommends and discloses draft standards developed by a subcommittee so that they can be used widely in construction field.

For more information, please visit our website below.  
(<http://www.jacic.or.jp/hyojun/committee.htm>)

### ◎ Promotion and adoption of the committee standards



### ◎ Structure of the Infrastructure Information Standardization Committee



**Standardization Vision on Construction Information**

This vision was determined by the “Round-table meeting for standardization vision on construction information” in May 2000. The vision describes the necessity of standardization and the future vision realized by standardization as follows.

In order to take full advantage of construction information, standardization should be promoted strongly with wide range of parties concerned.

Improve productivity of the whole construction field by the beginning of the 21st century through realizing;

- ① creation of the infrastructure for the smooth digital data flow, and
- ② creation of the environment for integrative utilization of digital data.

It was also stated that the third party gathering industry, academia and government parties concerned shall be necessary to realize the vision. Then the Construction Information Standardization Committee (former name) was established.

**Coordination with and participation in domestic and international standardization activities**

While collecting information on domestic and international standardization in the construction field, JACIC participates in international meetings including ISO, and provides information on our standardization activities. Moreover, JACIC is promoting cooperation with a related standardization organization.

**Promotion Plan 2010-2012 for Infrastructure Information Standardization**

The “Promotion Plan 2010-2012 for Infrastructure Information Standardization” for the term from July 2010 to June 2013 was determined at the 21st Committee Meeting in June 2010.

The previous three promotion plans have focused in developing standards for data exchanged in between project owner and contractor in the process of national public works projects so that paper documents can be replaced by digital data. However, in order to improve productivity and service quality through effective use of exchanged data, it is necessary to realize effective data circulation throughout life cycle of infrastructure facility, and to provide user friendly environment for information circulation and integration so that not only for national organization but also for local government and private sectors can obtain direct benefits.

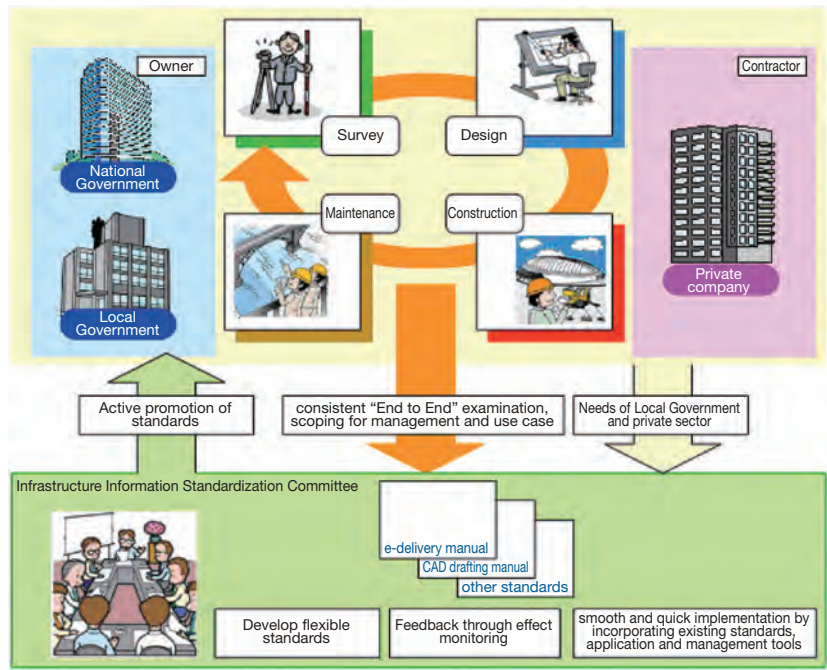
The action targets for three years in the plan are as follows.

- ① Bearing in mind consistent “End to End” examination, scoping not only for data standardization but also for management method and use case of standardized data.
- ② Develop standards clearly indicates which part is compulsory and which part is recommended so that user can apply flexibly corresponding to their requirement.
- ③ Realize smooth and quick implementation of standards, by incorporating existing standards, application and management tools, as well as developing new standards.
- ④ Requirements of local governments and private sectors are to be more considered, while action plan is reexamined through monitoring the situation and effect of promotion and implementation of standards

**11 proposals for utilization of infrastructure information**

This is the result from the task force for grand design of construction information utilization in June, 2009. Proposed 11 visions can contribute to maximize their potential value of a huge digital data accumulated through e-delivery and to make CALS operation easier.

- ① Determine flexible data specifications adaptable for various ways of use by purpose and period.
- ② Establish a work flow to check and correct error at the initial stage of data generation and improve data quality through data circulation and reuse.
- ③ Let data specification, location and stipulation be transparent to users.
- ④ Improve quality and productivity of infrastructure through computer assisted semantic recognition of information.
- ⑤ Let infrastructure information owned by various organizations as national government be open and circulated to public.
- ⑥ Prepare and improve coverage of commonly usable digital base maps.
- ⑦ Establish linkage of data stored and managed in distributed databases so that we can get and use whole data concerning a specific infrastructure facility.
- ⑧ Improve productivity and maintenance level of infrastructure by means of product model technology
- ⑨ Realize efficient integration and utilization of infrastructure information stored in various systems used during its life cycle.
- ⑩ Realize network integration of distributed databases of basic data infrastructure which link to each other and revise their data corresponding to their relationship
- ⑪ Ass ure long-term interoper ability so that in frastructure information can be confirmed and utilized in the future.



## ◎ Standardization Activities

### ■ Study on CAD data exchange standard

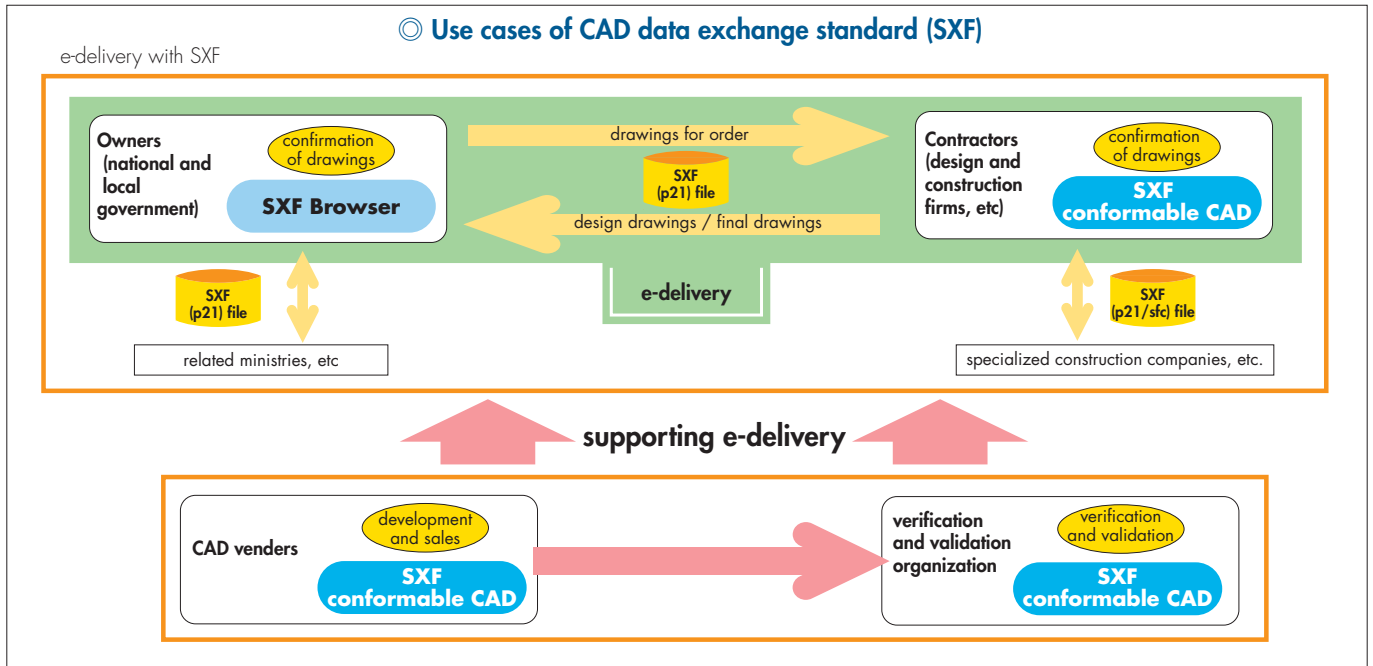
The electronic delivery of CAD data requires the standard for data exchange between different CAD softwares conforming to the International Standard.

Accordingly, JACIC has developed the CAD data exchange standards (SXF) for the construction field in the Infrastructure Information Standardization Committee and the CAD data Exchange Standard Subcommittee\* which succeeded the result

of the "Standard Development Consortium for CAD data exchange in Japanese construction field". There are two types of file format, namely, "P21 format" in conformity with an international standard and "SFC format" which is a simplified format for domestic CAD data exchange.

In the future, we aim at advanced utilization of the CAD data, such as exchange of the attribute information for automatic calculation of quantity, and linkage with related software such as GIS.

\* currently succeeded by the "CAD/data linkage subcommittee"



### ■ JACIC/LCDM registry; Web site to register and retrieve data specification

Recently, huge amount of data is getting open for public use through internet. In such information explosion and circulation society, system to ensure easy and smooth access not only to data itself but to data specification, such as data meaning, definition, format, etc., shall be necessary. In Europe and America, metadata registry and associated system has successfully provided data sharing environment and overcome system and data variation difficulties in many fields.

JACIC has studied on market oriented unification of open specification via metadata registry, as well as strict standardization through the Standardization Committee, and develop and operate the first metadata registry in Japan.

This Web site is expected to help development of new data specification be easier by referring existing specifications and converge on the high quality specification, as well as development of application tools and services be easier and thus help integrated use of data be promoted.

(<https://www.registry.jacic.or.jp/lodmAdmin/html/UserRegistryTop.html>)

### ■ Construction Wiki; User participating construction dictionary

Technical terms used and exchanged in construction information field has such vagueness that different words means the same or one word has plural meanings. Human can recognize and overcome such vagueness, while computer communication may confuse and cause critical error. In this regard, "Code subcommittee" (2001-2006) has studied on standardization of construction terms and published the "Construction information Classification System in Japan" (JCCS ver. 2.0) in 2006. Despite the six year study, the result is far less than our initial expectation, and it seems impossible to cover whole construction terms and create complete taxonomy.

However, it is still very important to share common recognition of definition for each technical term as data flow and reuse is expanding. In this regard, JACIC set up a Web site to gather public knowledge on construction terms and create useful wisdom, instead of completion of JCCS.

Construction Wiki is a wiki-base dictionary site in construction field, co-developed by JACIC and the Center for Spatial Information Science (CSIS), the University of Tokyo.

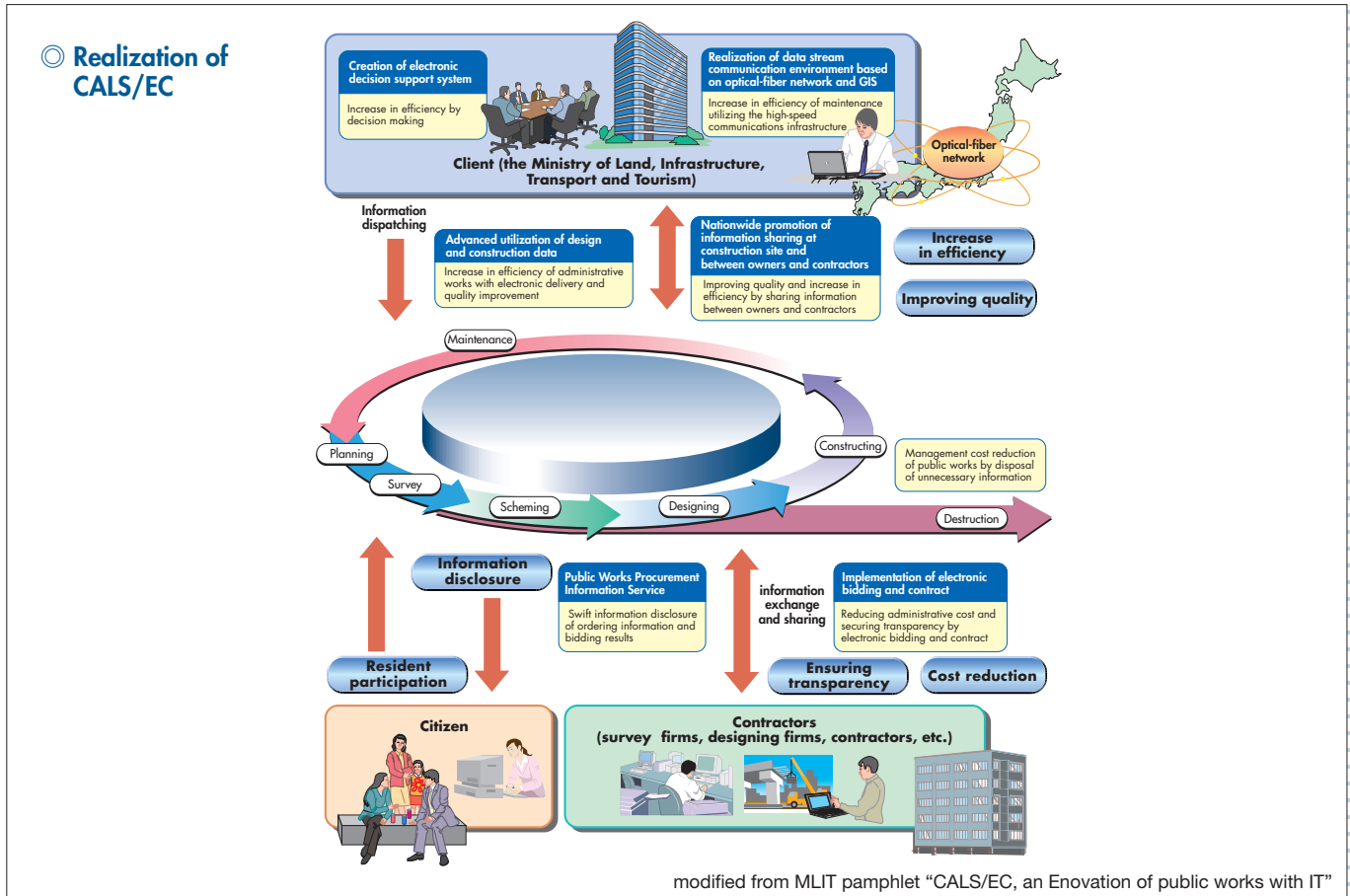
(<http://jccswiki.csis.u-tokyo.ac.jp/jccswiki/index.php/>)



# Realization of CALS/EC

Toward the realization of CALS/EC, JACIC is surveying, researching, developing and disseminating ICT systems which

supports whole processes of public works such as survey, design, bid and contract, construction and maintenance.



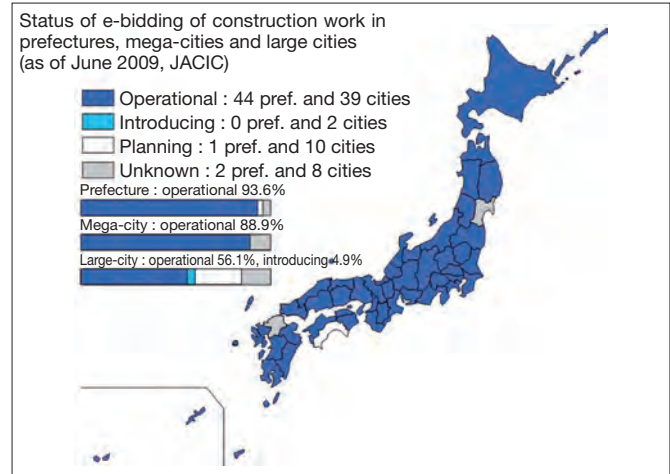
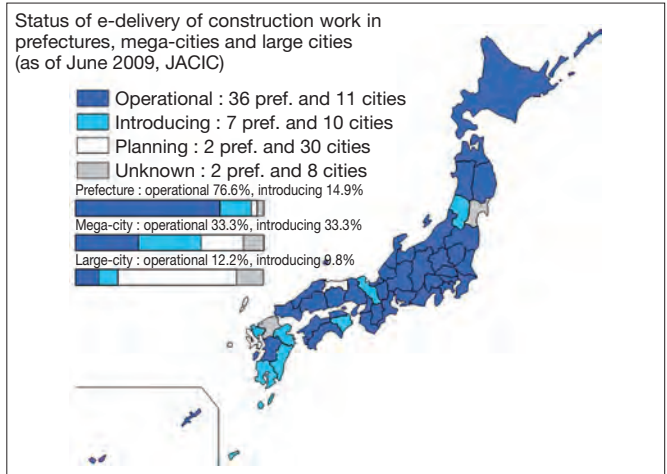
modified from MLIT pamphlet "CALS/EC, an Enovation of public works with IT"

\*The latest information is provided on the home page (<http://www.jacic.or.jp/>).

# CALS/EC Promotion to local governments

70% of public works is executed by local governments. Therefore, in order to realize cost reduction and smooth execution of whole public works, it is necessary to promote CALS/EC to local governments.

JACIC helps local governments through supports for local CALS/EC Promotion Council, determination and revision of CALS/EC action program, e-bidding and e-delivery.



## ■ Overview

In order to realize CALS/EC, JACIC is developing, improving, and researching and studying several support systems by using ICT. The system supports works at each stage of the life-cycle of river and road infrastructure facilities, such as survey and design, bidding and contract, construction, management, and maintenance, as well as work process of environmental preservation. Furthermore, JACIC is conducting survey and research for deciding and revising the standards on these information systems.

The following table shows outcomes and progress of development, improvement, and survey and research of the information technology that JACIC has been engaged in so far.

In addition, even after the system was released to the public, it is necessary to respond to latest improvement in information technology and changing needs of clients such as national and local government or private firms. This leads to the constant improvement and the survey and research in the systems which JACIC has already operated.

Major systems developed in JACIC

Service area	Name of system	Year started operation (*:Developed by JACIC)	remarks	
Construction/ Consulting Record Information service	CORINS and TECRIS	1994 (*)	[1]	
	Database for Supporting Public-Sector Organizations (JCIS)	2009		
COST ESTIMATION	Local Governments	Cost Estimation System	1998 (*)	[2]
		XML-based Cost Estimation Management System	2004 (*)	
	National Government etc.	Civil Engineering Works Standard Cost Estimation System	1988	
		Database for Records of Cost Estimation System	1996	
		Editor System	for civil works cost estimation reference document	
for unit price reference document	2007			
Resource Recycling	Construction By-products Resource Information Exchange System	2002	[3]	
	Surplus Construction Soil Information Exchange System	1999		
e-Bidding	Electric Bidding Core System	2002	[4]	
Other Construction related Information Service	JACIC NET	1988 (*)		
	Public Works Procurement Information Service (Integrated PPI)	2004 (*)		
	Review and Certification of Construction Technology Search System	2006 (*)		
	Technical Report and Boring Information System (TRABIS)	1997		
	New Technology Information System (NETIS)	1997		
	Pholog-CAD (The system for increasing efficiency in disaster recovery)	2007 (*)	[6]	

## [1] CORINS and TECRIS

Reflecting social needs such as prevention of the fraudulent activity at bidding and contracting procedure in ordering public works and responding to internationalization of a construction market, The Central Council on Construction Contracting Business worked out the proposal named "Reform of the Bidding and Contracting Procedures for Public Works" on December 21, 1993.

As part of the reform, the proposal states that it is necessary to develop the record database which will enable them to make fair and transparent selection of firms when public sectors contract out construction and their related works.

As JACIC has expertise in construction information widely, we have created construction records and technical consulting records database (CORINS, TECRIS), and provide such information with each client organization.

We will continue to revise the system corresponding to amendments of tendering and contracting procedures.





## [2] Cost estimation system

Cost estimation system is one of the major research projects since JACIC was founded. And the system has been improved reacting to change in social needs and environment. Improvement of computer hardware and software technology make it possible for JACIC to rationalize and unify the estimation system. Responding to the cost reduction policy of public works, we are involved in efforts to replace accumulation type of cost estimation system with unit price type of cost estimation system.

We keep on researching, studying, and developing practical implantation method of public works by considering support for integration of distributed cost estimation systems in one way, and decentralization of systems using open source on the other hand by creating Web-based system and converting data into XML format, as well as to assist planning new type of public works project executed under collaboration of public and private sectors (PPP)..

## [3] Construction By-products Resource / Surplus Construction Soil Information Exchange System

Effective use of resource in the construction field has been a big task from the environmental preservation point of view. In order to contribute to preservation of natural environment and earth's environment, the Construction By-products Resource Information Exchange System was developed for the purpose of promotion of proper disposal of construction by-product and improvement of recycling. Moreover the Surplus Construction Soil Information Exchange System was developed for the purpose of promotion of the utilization of construction related soil among construction sites.

We have been operating the "national version" of the Surplus Construction Soil Information Exchange System since FY1999, and the Construction By-products Resource Information Exchange System since FY 2002 after gaining experience of

operating the "Limited area version for Saitama, Chiba, Tokyo and Kanagawa" from FY1996 to FY2001.

## [4] Electronic Bidding Core System

JACIC develops and provides the "Electronic Bidding Core system" which is so versatile that it is applicable to each public procurement organization.

JACIC is developing the core system incorporating requests of many public client organizations and bidders.

JACIC will continue to provide the system, incorporating user's requests and opinions, adding function accompanying legal amendment or revision of procedure, and improving the function of the core system responding to the new technology related to electronic bidding.

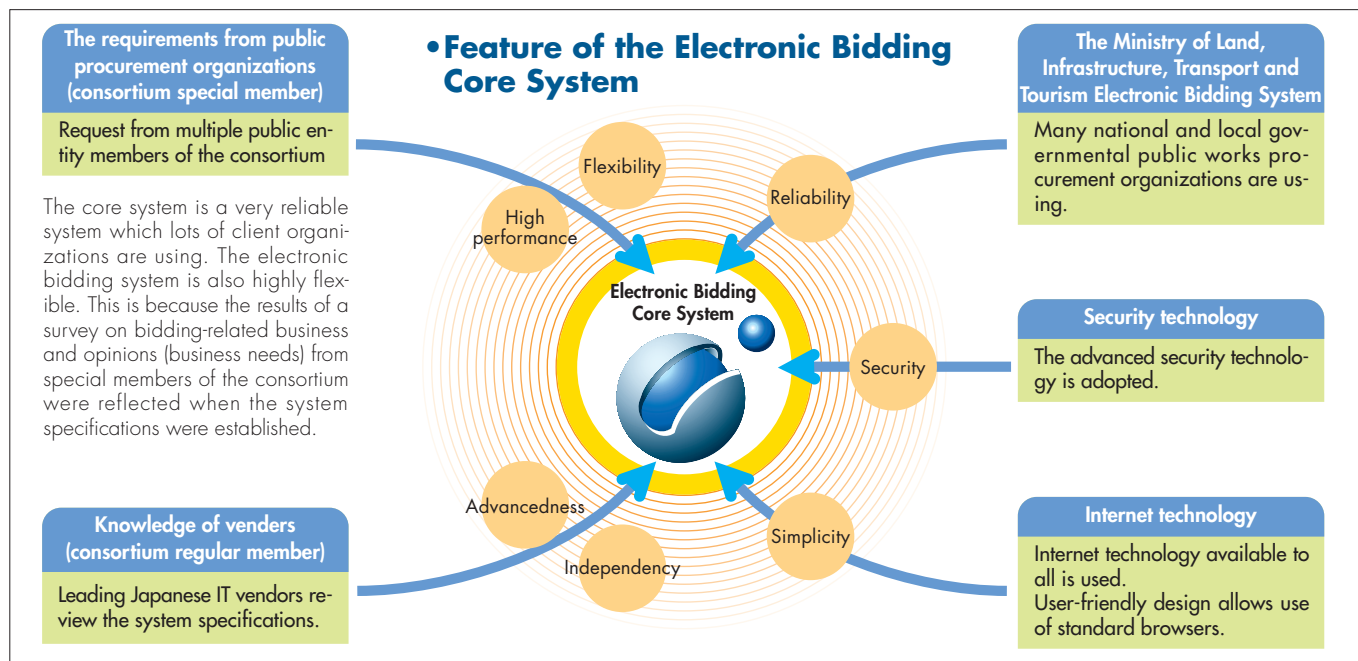
## [5] Public Works Procurement Information Service (Integrated PPI)

When attempting to participate in public works tendering, such laborious work is necessary to collect procurement information from home page or notice board of various procurement organizations.

JACIC has been provided a system named "i-PPI" enabling to retrieve and browse construction and consulting procurement information of multiple organizations at one portal site since 2004.

The system was referred in the "Public Works Support System Optimization Plan" of the government as such that procurement information shall be gathered and advertised at one internet site where comprehensive retrieval is possible and make it easier for bid participants to collect information.

Integrated PPI system is operated as the site satisfy such requirement.



## [6] Disaster recovery support system Photog-CAD

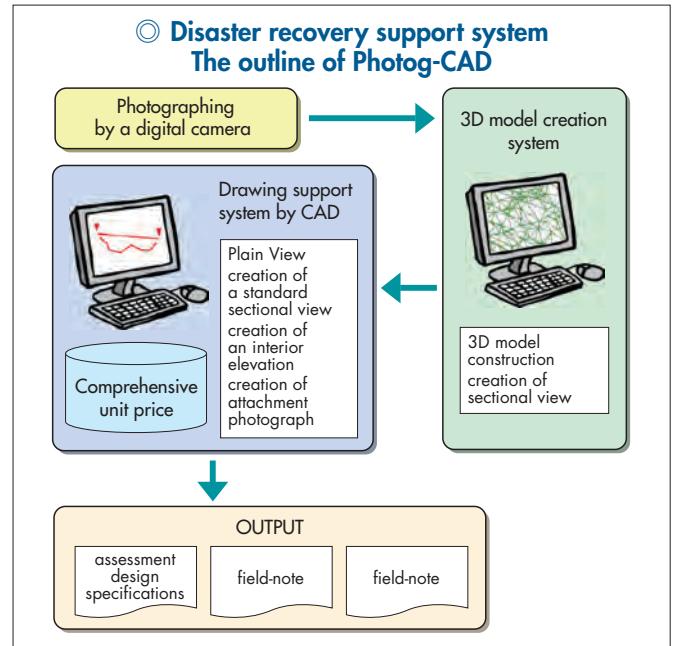
The disaster-recovery project of public works facilities shall be carried out quickly and efficiently for avoiding secondary disaster and early resume of local activities.

The system for increasing efficiency in disaster recovery (Photog CAD), using photogrammetry with a high-performance digital camera and CAD technology, was developed in order to systematize field work, survey, designing, and cost estimation.

Photog-CAD is a laborsaving and streamlining system for disaster-recovery cost assessment which local government of the suffered area is responsible for. Moreover, information sharing with standard digital disaster-assessment documents is promoted.

### ■ System features

- Constructing 3D model and a sectional view from digital camera photography.
- Creation of plain view, standard sectional view, interior-elevation by using CAD.
- Creation of assessment design specifications by calculating automatically from CAD.
- Sorting site photographs by linked with CAD and drawings.
- Creation of automatic field-note



## [7] GIS research and development

### ◎ Administrative support GIS (river, road, disaster prevention, urban administration)

#### ■ River GIS

The "River GIS" is being developed to assist such administrative activities as planning of the comprehensive policies including flood prevention, water utilization, and environment assessment of a project effect, improvement of the consensus-building system in implementing projects, research and development of guidelines and standard specifications for river GIS which are expected to be used for information disclosure, as well as developing standard software and construction support tools, etc. based on these guidelines or specifications.

#### ■ Road GIS

We have developed road GIS configuration and data specification (draft) and the guideline (draft) for the purpose of increase in efficiency in planning and maintenance etc., and realizing advanced highway administrative services such as ITS. In addition the standard procedures for creating road database from road-construction completion drawings is being developed and assistance for contractors is served.

#### ■ Disaster Prevention

The Central Disaster Prevention Council presented "The Basic Policy for preserving Disaster Prevention Information System" in March, 2003, and pointed out that swift grasp, share, and provision of disaster prevention information were important. JACIC is conducting technological study on Disaster Prevention Information System in conjunction with industrial and administrative sectors.

#### ■ Urban administration

GIS can also be utilized for the various cases of urban planning, disaster prevention planning and land use planning, as well as the management of underground structures.

### ◎ Survey, Research and Development on GIS

JACIC is engaged in research on GIS and system development in order to improve administration of national and local gov-

ernment authorities. Moreover in order to promote utilization of map data or GIS software, JACIC provides the internet version of GIS data book.

### ◎ Development and provision of JACIC TOWN

In recognition of the increasing demand for map data on the basis of GIS usage, JACIC has created and provided digital map data called JACIC TOWN on a scale of 1/2,500 to the public.

#### ■ JACIC TOWN

JACIC TOWN is based on 1/2,500 city planning maps in IGES format, widely used in CAD/CAM Systems. Data is in vector format configured in 7 classes and 67 layers so that it can meet requirement of complicated topological structurization. Various user-specific data can easily be incorporated into JACIC TOWN. Key map information such as buildings, major roads and administrative boundaries are updated every 1 to 1.5 years.

### ◎ GIS promotion

#### ■ Seminars

JACIC holds GIS Seminars in various kind to promote GIS.

#### ■ GIS Data Book

Users can search for information on GIS map data and software they need. (<http://www.gis.jacic.or.jp>)

#### ■ GIS plaza

News, terminologies, etc., on GIS are provided on HP. (<http://www.gis.jacic.or.jp/gis/>)

#### ■ Publication

JACIC is publishing books for promoting GIS such as "GIS data book", "Web GIS introduction manual for local government", "River infrastructure map guideline" and "GIS and municipal merger"

## [8] Other research, study and development

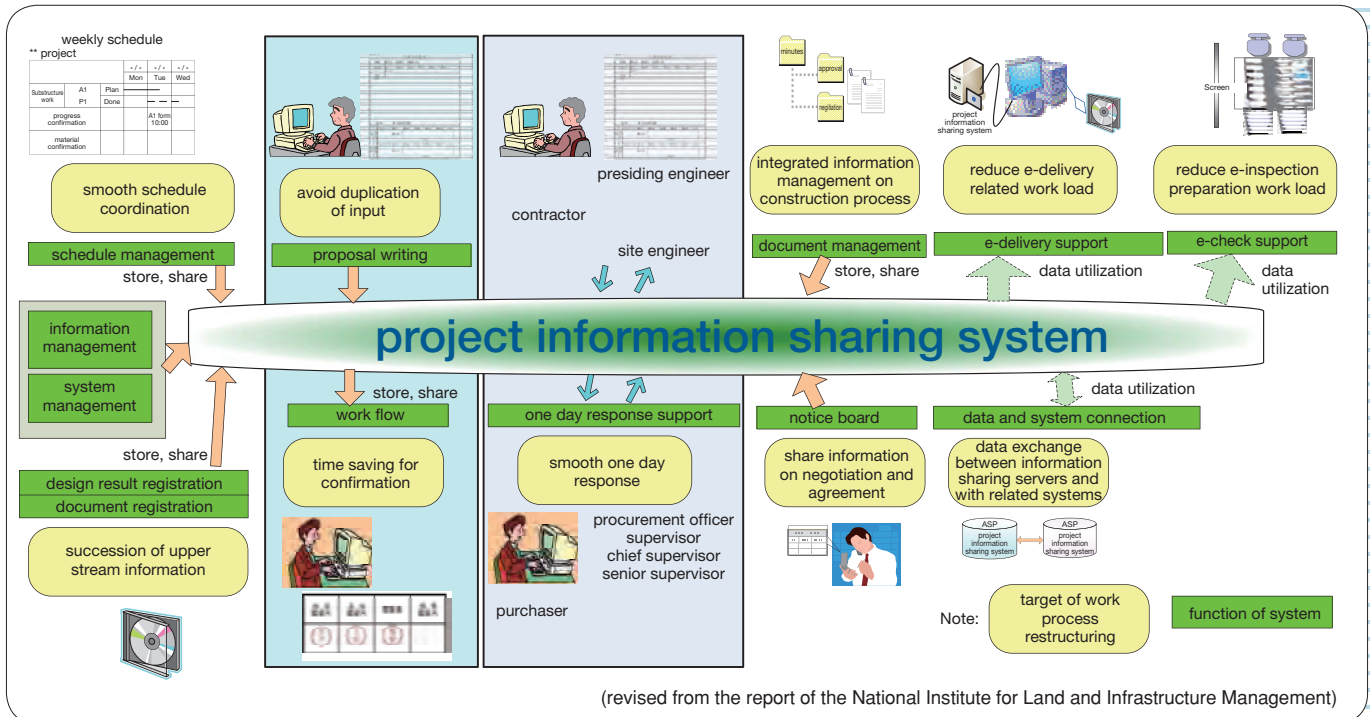
### ■ sharing and effective use of information

Public works procurement shall require higher quality performance within lower price. However, public works have such problems that;

- it is difficult to minimize error despite their long efforts,
- it needs long time to get understanding among wide variety of people concerned, because

- members involved vary project by project,
- wide variety of people shall exchange and share information,
- information shall be kept usable for very long period.

In order to solve such problems, JACIC is studying on systems to support information sharing and utilization among people concerned with the help of ICT in the whole process of public works as survey, design, construction and maintenance.



### ■ Improvement and research of the river management and disaster prevention support systems

JACIC is researching and studying smooth circulation and effective use of digital information related to river management in order to realize improvement of efficiency in river management and operation cost reduction. Moreover, we are conducting research and development of river-management support GIS systems and disaster prevention assistance GIS systems which are effective core tools in disaster prevention administration.

It is often said that administrative systems are likely to fall in excessive vendor dependence and high life-cycle cost from initial installation and maintenance to renewal. In order to be free from these problems, we are developing and disseminating systems based on open-system technology.

We have also studied efficient and rational management methods for each process from planning, procurement, operation and renewal. Moreover, through analysis of work process of existing organization as management, work process and work type, we deliver advices on improvement of work process.

#### ■ Provision of basic information of river-basin : Present river condition survey

The Ministry of Land, Infrastructure, Transport and Tourism is investigating river-basin information, including the infrastructure information, property statistics, demographic statistics, etc. in the river basin of the first class rivers, major 2nd class rivers and

assumed inundated district for every five years synchronized with national census. JACIC has supported the review of the survey outline and implementation of the survey. Since various attribute data is provided in 100m grid and processed by GIS, an efficient and accurate survey is expected.

#### ■ The overseas information acquisition and cooperation on CALS/EC

JACIC is collecting and providing various information through studies on overseas best practices, participation in ISO meetings and holding CALS/EC international symposia in cooperation with the overseas CALS/EC promotive bodies.

#### ■ The electronic delivery manuals and guidelines

For smooth implementation of electronic delivery enforced to all construction and engineering consulting works, JACIC is conducting survey and research necessary for revision of manuals and guidelines such as "Procedures for Electronic Delivery of Civil Engineering Design Work (Draft)", "Procedures for Electronic Delivery of Documents upon Completion of Public Works (Draft)", "CAD Drafting Standard (Draft)", "Digital Photograph Management Information Standard (Draft)", "Procedure for Electronic Delivery of Survey Data (Draft)", "Procedures for Electronic Delivery of Geological Survey Data (Draft)" as extending coverage and reflection of operational requirements.



## CORINS and TECRIS

### Construction and Technical Consulting Records Information System

CORINS is the construction records information system used for confirming technical capabilities of tendering companies so that public administrative organizations can improve transparency, objectivity, and competitiveness of the public works procurement procedure.

TECRIS is the technical consulting records information system used for the same purpose as CORINS to improve the transparency, objectivity, and competitiveness of the bidding and contracting procedure of technical consulting projects.

The governmental basic policy based on "the law on promotion of the quality assurance of public works" (enactment in April, 2005) has described it as "the adequate implementation of procurement related affairs." This made the CORINS and TECRIS more important. The integration with construction quality evaluation scores record information is under consideration. And the system is improved so that it can respond to administrative demand and market environment.

After the release of Web based CORINS TECRIS registration systems in August 2009, JACIC started to operate Web based retrieve systems in addition to current systems for TECRIS in February 2010 and CORINS in May 2010.

### ◎ CORINS (construction records information system)

CORINS puts the construction record of the public works which contractors register as "construction records" into the database, and provides it with public organizations.

Registration of the public works was started in March, 1994 for those contracts of more than 50 million yen. (Registered data include the record of public works from FY1990) Public works projects to be registered were extended to the project whose contract of which amount is more than 25 million yen after FY 1997.

Furthermore, in accordance with "the law on promotion of rationalization of bidding and contract of public works" in April, 2001, public works projects to be registered were extended to the project whose contract amount is more than 5 million yen after FY 2002.

License fee were reduced in April, 2004, mainly for cities, wards, towns, and villages, and on-line registration of private companies and on-line database retrieval service of public organization through Internet started in August, 2004.

The "retrieval system of construction engineer career" for retrieving construction career record of individual engineers has been operated since April, 2005.

This system enables users to search the engineer's records no matter if he/she moved companies belonged.

As of the end of March, 2010, the number of contractors registered is about 131,000 in total and the number of registered completion construction projects is about 3,188,000 in total.

Moreover, we started information service JCIS (JACIC CE Information Service) which combines the construction record information of CORINS with the construction firm information of CE (Construction Industry Engineers Center) in October, 1996. As of the end of March, 2010 the number of organizations which is using the CORINS is 923, and the number of organizations using JCIS is 241.

### ◎ TECRIS (technical consulting records information system)

TECRIS puts the technical consulting record of the technical consulting projects which contractors registers as "technical consulting records" into the database and provides it with public administrative organizations. Registration of the research and design works in civil engineering field was started in 1995 for the contracts of more than 5 million yen. (Registered data include the record of technical consulting projects from FY 1993)

In FY 1996, registration of geographical survey work was started, and also technical data specific by each engineering field was added in FY 1999, and data can be retrieved by technical element. Just like CORINS, license fee were reduced in April, FY 2004, for cities, wards, towns, and villages, and on-line registration of private companies and on-line database retrieval service of public organization through Internet started in August, 2004.

From FY 2008, the register service which contract amount is more than 1 million yen was started, and compensation consulting service became included to be registered in FY 2009. As of the end of March, 2010, the number of consultant firms registered is about 10,000 in total, the number of registered construction services is about 940,000.

424 public organizations are using the system as of the end of March, 2010.



CORINS enables a public organization to search by construction record in the region or construction record of the same kind, and confirms the technical capability of each contractor from the construction record. And each public institution can use the CORINS for bidding and adequate enforcement of the contract.

Moreover, since the construction companies which registered the construction records can also show their records not only to the organization that confirmed an order for the construction concerned but to other public organization, CORINS plays the role of operating assistance.

A TECRIS plays the same role, too. In TECRIS, a public organization retrieves the registered technical consulting records information, and they can confirm the technical capabilities of contractors from the records when they place an order for works. Each public organization can use TECRIS for bidding and adequate enforcement of the contract.

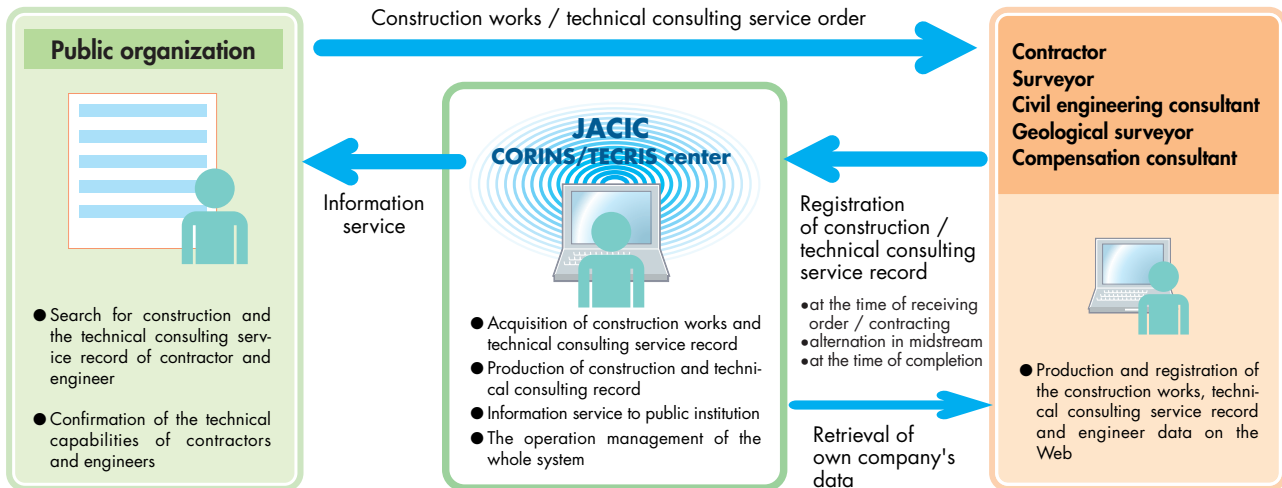
Number of user organizations of CORINS, TECRIS and JCIS

	CORINS	TECRIS	total
National Government	28 (6)	22	29
Independent administrative agency	78 (4)	17	79
Prefectures	47 (22)	44	47
a city designated by ordinance	18 (10)	13	18
City, ward, town, village	697 (193)	298	699
Others	55 (6)	30	56
Total	923 (241)	424	928

[As of March, 2009]

· The number in parentheses at "CORINS" column indicates number of JCIS users.  
 · Numbers of "total" column avoid doubling up.  
 JCIS: JACIC CE Information Service

### New CORINS/TECRIS (Construction and Technical Consulting Records Information System)



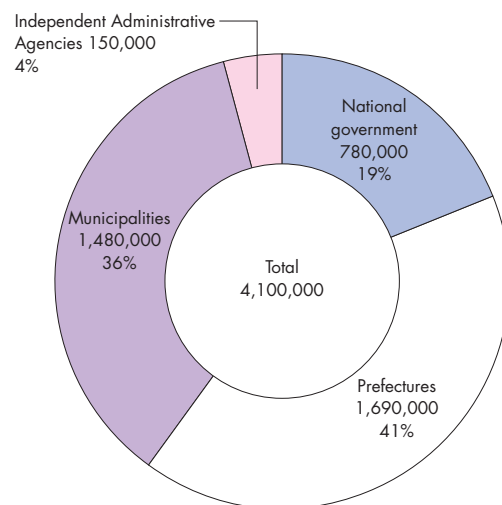
### Main Feature

We realize provision of accurate information and the user-friendly system.

Based on the policy of the Ministry of Land, Infrastructure, Transport and Tourism, JACIC reconstructs the system by utilizing open source, shifting to the Web system and improving user's convenience. The system could make flexible response to social need.

1. Registration system for contractor companies was released in FY 2009.
  - Easy operation with Web based system
  - Improvement of data quality through confirmation by project owners
  - Simple management of company's data by assigning "administrative user" for each company
  - Browsing and downloading company's own data is possible
2. The new retrieve system for project owners was released in 2010.
  - Speedy retrieval
  - Improve retrieve capability corresponding each tendering methods

### Records stored in CORINS TECRIS (by type of project owner organizations)



# Cost Estimation System

JACIC is engaged in the development and is fully supporting the operation of the cost estimation system based on the New Cost Estimation Classification System for Civil Engineering Works, which the government is promoting in response to the latest advancement of civil engineering and information technology, internationalization, and change of social situation.

## ◎ Cost Estimation System of the Ministry of Land, Infrastructure, Transport and Tourism

JACIC has been engaged in development of the cost estimation system since the main frame computer age, and we are grappling with improvement and operation assistance of systems including the review of the cost estimation classification system and the development of the cost estimation system for survey and designs.

Moreover, JACIC is carrying out the data delivery for trial adoption of unit price type cost estimation as an approach to rationalization of cost estimation.

### ■ The feature of the New Cost Estimation Classification System for Civil Engineering Works

- (1) Standardized classification of construction work type
  - It is possible for any user to have the same configuration by standardized classification of the construction work type.
- (2) Improvement in operability
  - Interactive serial-processing system by distributed processing (client-server system)
  - Function to check and warn to error of input information or calculation result.
  - Function to provide help messages along with information prescribed in guidelines for standards of cost estimation.
- (3) Standardization of cost estimation data
  - Standardization of cost estimation data table of quantity per unit atypically described in guidelines, as well as standardization of classification system of the construction work type.
  - Data update corresponding to revision of the guidelines can be done efficiently.
- (4) Collection and utilization of cost estimation records
  - Construction of the database of cost estimation result — Collection of statistics for rationalization of cost estimation

## ◎ Cost estimation system for local governments

JACIC provides cost estimation system for local governments which timely respond to revision of guidelines based on the New Cost Estimation Classification System for Civil Engineering Works of the national government and the standard cost estimation data with high flexibility. Moreover, we are serving technical support on cost estimation besides answering to the query (Q/A, FAQ) from users of local governments.

We have offered installation, operation and maintenance service of the civil engineering work cost estimation system for cities, towns and villages through the shared user contract within the prefectural construction technical center.

In order to save labors and to improve quality for the operation work of cost estimation system, we have developed the new "Web version of cost estimation system for civil engineering works" which is written in JAVA and XML and runs on multi-platform. This system was released in autumn of 2006.

### ■ Feature of local government version and Web version of civil engineering cost estimation system

- Conformant to the New Cost Estimation Classification System for Civil Engineering Works of the Ministry of Land, Infrastructure, Transport and Tourism.
- Capable of adding original function of each local government
- Corresponding work type: (1) General civil works (river, coast, sabo, road) (2) Park (3) Electric facility (4) Mechanical facility (5) Engineering consulting

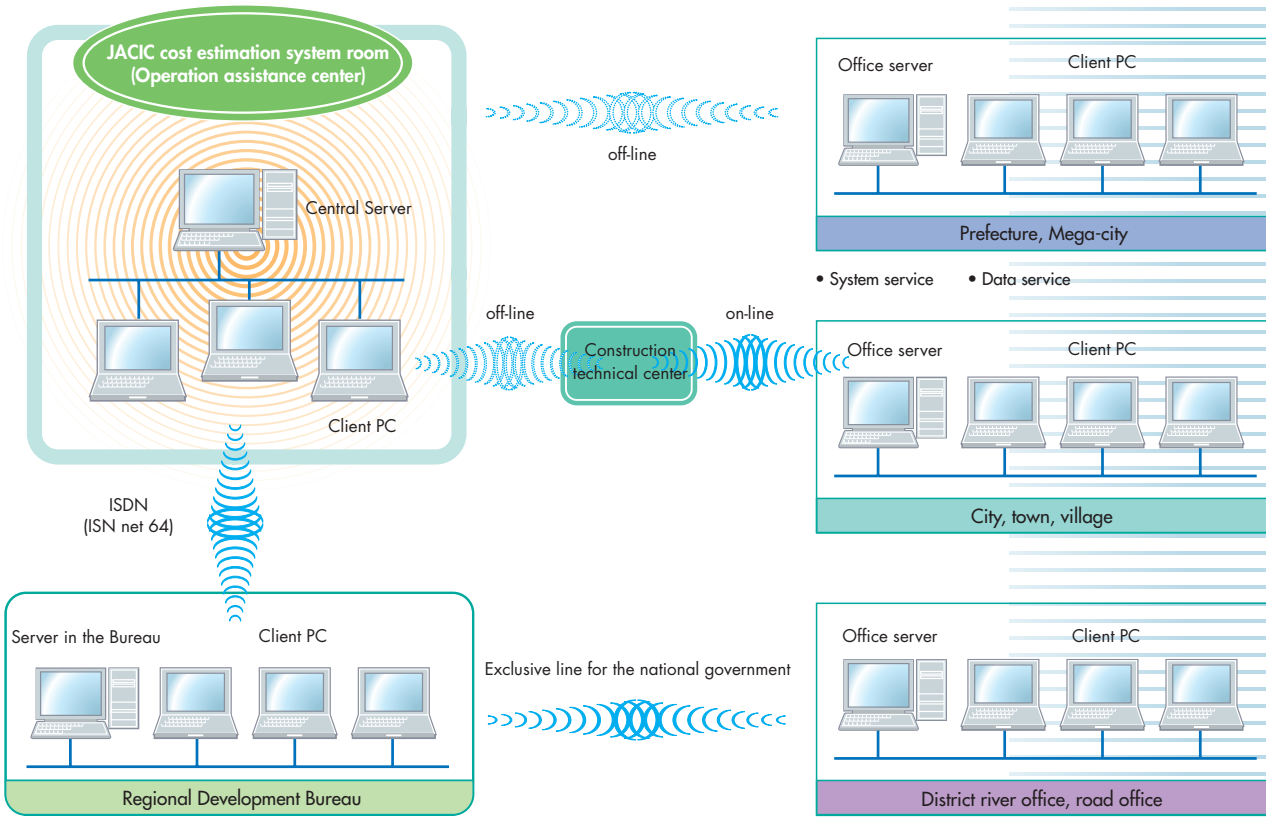
## ◎ Support for Technological Management

JACIC supports the system for managing various electronic documents and information that are used in the stages of public works such as draft plan, construction and management in order to increase the efficiency.

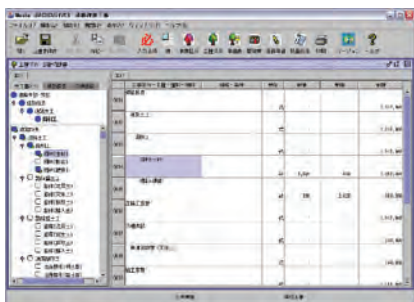




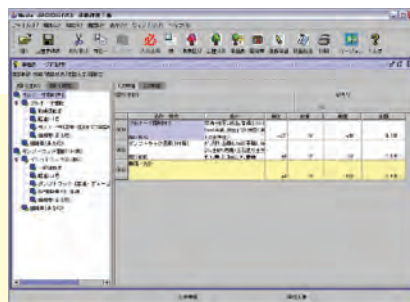
◎ Network Configuration of the Cost Estimation System



◎ Web version of civil engineering cost estimation system



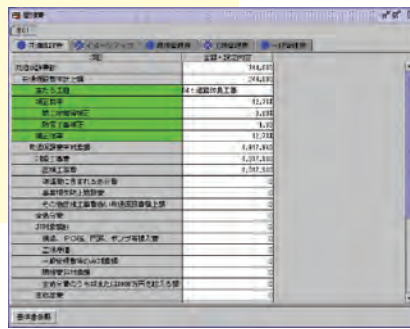
work-type classification system and a design items page



Primary unit price table page



quantity per unit condition selection page



indirect construction cost page

Number of organizations JACIC provides cost estimation system and data for local governments

[Cost Estimation System]

	C/S version	Web version	total
national organizations	1	0	1
prefectures	1	4	5
mega cities	0	3	3
municipalities	1	1	2
Technical center, etc.	0	2	2
total	3	10	13

[Standard Cost Estimation Data]

	CSV	XML	total
national organizations	2	0	2
prefectures	5	8	13
mega cities	3	7	10
municipalities	1	1	2
Technical center, etc.	5	6	11
total	16	22	38

(As of the end of May, 2010.)

# Construction By-products Resource / Surplus Construction Soil Information Exchange System

## and information service through the systems

The Construction By-products Resource Information Exchange System and the Surplus Construction Soil Information Exchange System contribute to preservation of natural environment and earth environment. Moreover, they are the systems which users can use real time information on recycling construction wastes efficiently on the Internet.

JACIC is the only organization which gathers requests from project owners, contractors generating waste, and disposer service providers, and reflects them in information service, system improvement and dissemination activities concerning proper disposal, and recycling of construction by-product.

In the FY 2010, JACIC will disseminate and promote the system actively in correspondence with customer's request.

### ◎ Construction By-products Resource Information Exchange System (COBRIS)

COBRIS aims to ensure balancing supply and demand, proper disposal and promotion of recycling of construction by-products through timely information exchange among project owners, contractors and recycling/disposal service providers.

The system is expected to prepare documents required by the Construction Recycling Act and efficiently accomplish the survey on construction by-product.

#### ■ The features of the system

- Able to search information on construction projects, facilities and surveyed price.
- Able to exchange information from anywhere since it is based on the nationally standardized specification.
- Manage and operate all information on construction projects and facilities which each user registered in one system.
- Since it is the internet online system, users can easily access to and exchange information in real time at any project stage.
- The system displays the location of a construction sites and facilities, and transporting routes on a map, as well as information on transporting time and mileage.
- Able to share various data in accordance with formats defined by the Construction Recycling Act, and to print out the data in the standard format for submission and reporting.

#### ■ Target of the system

- Applicable construction by-products  
Concrete lumps, asphalt concrete lumps, construction surplus wood, sludge, and mixed waste
- Users  
Project owners (public works procurement ministries, independent administrative agencies, prefectures, municipalities)  
Construction by-product generating organizations (contractors etc.)  
Disposers (recycling facilities etc.)

#### ■ Means of information exchange on the system (<http://www.recycle.jacic.or.jp/>)

- Online system : Internet
- Proxy service : JACIC Construction by-product information center implements information registration, update, and search representing the user by receiving fax.

### ◎ Surplus Construction Soil Information Exchange System

In each stage of works such as design, cost estimation, order, construction, and completion, the surplus construction soil information exchange system provides project owner officer in charge with the information on availability of surplus construction soil among construction sites and promotes recycling of surplus construction soil, in particular for the construction work which generates and requires construction soil.

Moreover, it has input and calculation function of soil volume survey of public works, so this system improves efficiency in the survey.



■ The features of the system

- Able to search information on generating and receiving construction related soil.
- Able to exchange information from anywhere since it is based on the nationally standardized specification.
- Manage and operate all information on construction projects and soil volume which each user registered in one system.
- Since it is the Internet online system, users can easily access to and exchange information in real time at any project stage.
- The system displays the location of a construction site and transporting routes on a map, as well as information on transporting mileage.
- Functions such as construction information registration, search for construction site where transaction of construction related soil is available, application of arrangement, registration of transaction record, and various calculations.

■ Target of the system

- Users
  - Officer in charge of public works and construction by-product
  - Contractors of public works (only for updating information after contract)
  - Official arrangement organization / especially permitted organization such as public corporation (recommendation from regional conference required)

■ Means of information exchange on the system

(<http://www.recycle.jacic.or.jp/>)

- Online system : Internet

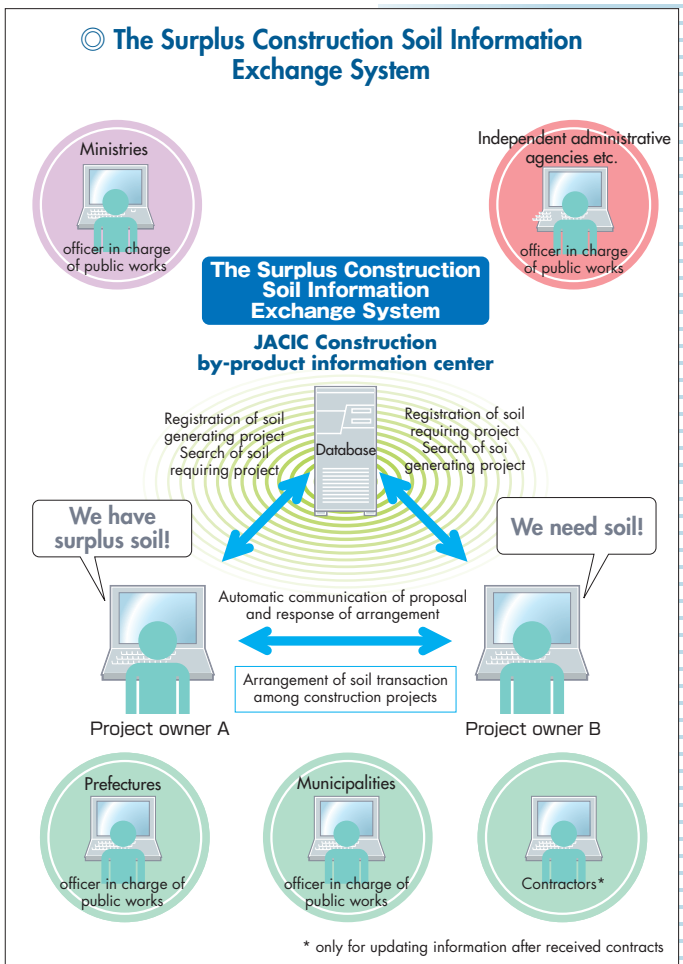
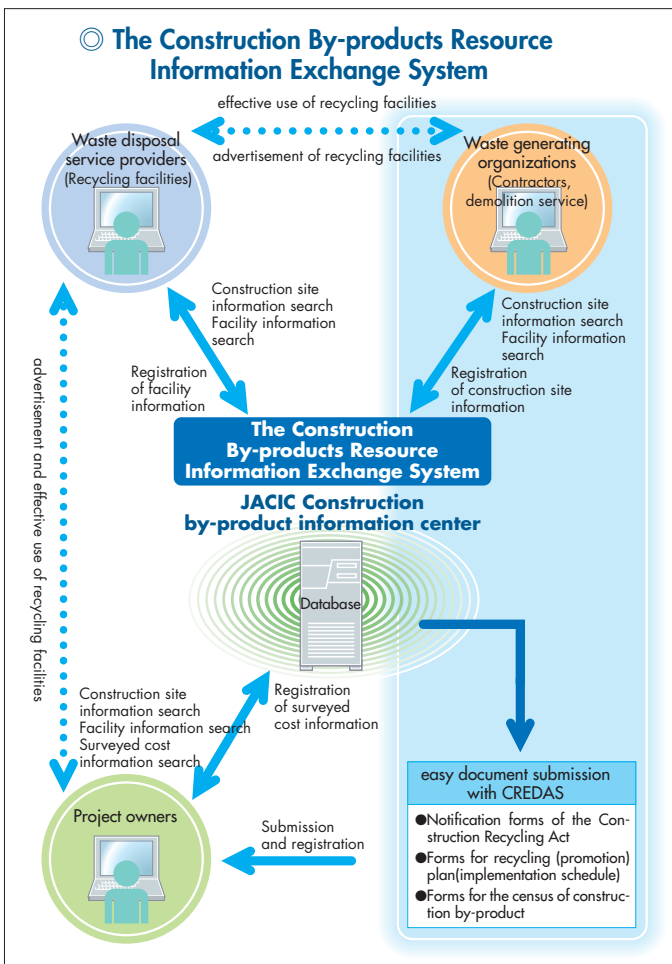
The Construction By-products Resource Information Exchange System conducted test operation within Kanto Regional Development Bureau since August, 2001, and full operation of "the nation-wide version" since April, 2002. Nation wide operation of the Surplus Construction Soil Information Exchange System has been started since April, 1999 . The number of registered user organizations as of FY 2009 for each system is as follows.

■ Number of registered user organizations of the Construction By-products Resource Information Exchange System

	registered users
national Organizations	302
independent administrative agencies etc.	5
local governments	313
others (NPO etc.)	5
waste generating organizations (contractors)	16,643
disposal service providers (recycling facilities)	2,092
total	19,360

■ Number of registered user organizations of the Surplus Construction Soil Information Exchange System

	registered users
national Organizations	292
independent administrative agencies etc.	13
local governments	851
others (NPO etc.)	7
total	1,163



# Electronic bidding

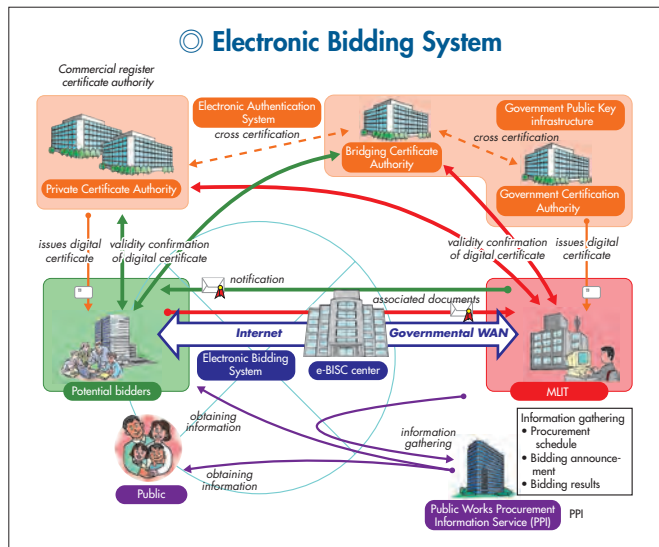
## Management of electronic-bidding system



The electronic bidding on the Internet will replace the conventional paper-based bidding.

In order to ensure safe and fair bidding on the Internet without spatial and time constraints for procurers and bidders, electronic bidding incorporates encryption and electronic-authentication technology.

The e-BISC center obtained the authentication of "ISO/IEC 27001:2005" on Information Security Management System (ISMS) on February 19, 2008.



### The Electronic Bid Server Control Center (e-BISC center)

In order to support smooth implementation of electronic bidding, JACIC established the Electronic Bid Server Control Center (e-BISC center) in April, 2001, and has offered following services.

#### Central management of the system

JACIC has taken responsibility for intensive management,

maintenance and support of the entire system\* of the Ministry of Land, Infrastructure, Transport and Tourism which processes the electronic bidding on whole direct projects in the Ministry.

\*including the electronic bidding system and associated systems (electronic provision of associated documents and a system for linking portal site for procurement project search)

#### Response to inquiry at help-desk

JACIC has responded to the query by telephone, FAX, and e-mail about advance preparations, checking computer's connection, operation procedures, etc. of the electronic bidding system.

Moreover, information on availability of the system and FAQ are provided for 24 hours from JACIC home page.

#### Risk Management

Besides attaining duplication and redundancy of the system device configuration to avoid various possible troubles, the synchronized (backing up) data processing is also accomplished on daily basis to avoid data loss in case of server room damage by disaster.

### Electronic Bidding

Electronic bidding has been executed for whole construction works and construction consulting services and for the general competitive bidding and designated competitive bidding on procurement of supplies and equipment and contract for services in national and local governments.

These are realized by the electronic bidding system based on the electronic bidding core system.

The Electronic bidding is expected to bring following effect.

#### Improvement of competitiveness

Those who are eligible for participating in bidding can participate easily, and thus improve competitiveness.

#### Cost reduction

Bidders will save personnel expenses and traveling expenses, which leads to reduction of construction cost.

#### Increasing efficiency in office work

Office work load will be reduced through e-process in bid announcement, eligibility information, technical proposal delivery and bid opening.

### Deployment of the electronic bidding core system

JACIC have developed the electronic bidding core system so that the system can be generally applicable among different public procurement organizations. Moreover, JACIC have developed the core system aiming at standardization of the electronic bidding system and as part of nation wide dissemination of CALS/EC.

As of the end of March, 2010, the number of public works procurement organizations which have adopted the system is 574, 9 national ministries, 16 public corporations / organizations, 44 prefectures, 17 ordinance-designated mega-cities, 488 municipalities (including shared use)). And the number of groups adopted the system is 428.

Each organization can install the system by selecting from various price plans depending on their conditions, namely, solo use / shared use, hardware preparation, the number of bids a year etc.

#### Ownership (solo use or shared use)

- Solo use : It is easy to link data with other systems. User

can decide solely to revise management policy and to improve the system.

- Shared use : Users can install the system costly compared with solo use since participating organizations share system environment preparation and initial investment. However, it is difficult for each participating party to reflect their original specification.

#### System preparation & management (selection of purchase or ASP)

- Purchase : Prepare hardware and software environment and operate them by their own.
- ASP : Commit creating hardware and software environment and operating system to an application service provider (ASP).

#### Annual number of bids and value of bidding order

In addition, organization with few annual bids can use the special price system or a fluctuated type unit price contract system.

## Integrated Public-works Procurement Information service (i-PPI)

(<http://www.i-ppi.jp/>)



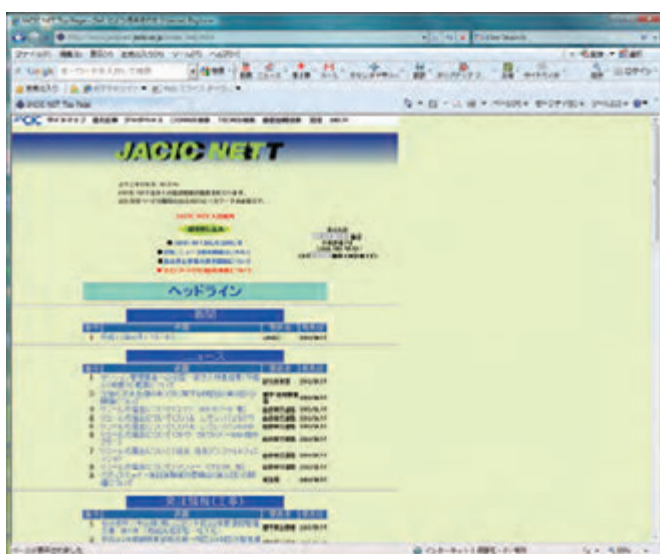
JACIC is developing and managing the portal site of the Public works Procurement Information service to integrate various tendering information and make them open to public so that possible bid participants can gather information to save their time and effort .

This service makes it possible for various public works procurement organizations such as national and local governments to post tendering information, and consists of official, such as "prospect of works", "tendering open" and "progress and result of bidding" on construction work and service.

JACIC has developed and created i-PPI in 2003. Service offered since 2004, starting with Gifu prefecture and municipalities in Gifu. Then gradually from 2005, Osaka prefecture, Yamanashi prefecture, Sakai city, Yokohama city, Kanuma city, Ministry of Land Infrastructure, Transport and Tourism, Ministry of Agriculture, Fishery and Forestry, Ministry of Defense, Courts etc. joined to use i-PPI.

## JACIC NET

(<http://www.jacicnet.jacic.or.jp/>)



This is a charged site which provides wide range of information, including the budget of national government, public institutions and private companies, press release, and personnel affairs, etc. quickly and correctly. Disqualification information was also provided since April, 2008.

The contents of JACIC NET

Headlines	News on ministry headquarters, regional development bureaus, independent administrative agencies and construction industry, procurement information for construction works and services, personnel information, disqualification information, public works budget news flash, awarded construction works, Medals of Honor listing, materials market condition and statistical information, various media forewords
Databases	market price of major materials, tunnel, dam, PC bridge, steel bridge, indicated cases of the Board of Audit, personnel information of The MLIT, engineering consultant firm information
CORINS and TECRIS search	CORINS search (general search), TECRIS search (general search).

## Geographic information one stop service

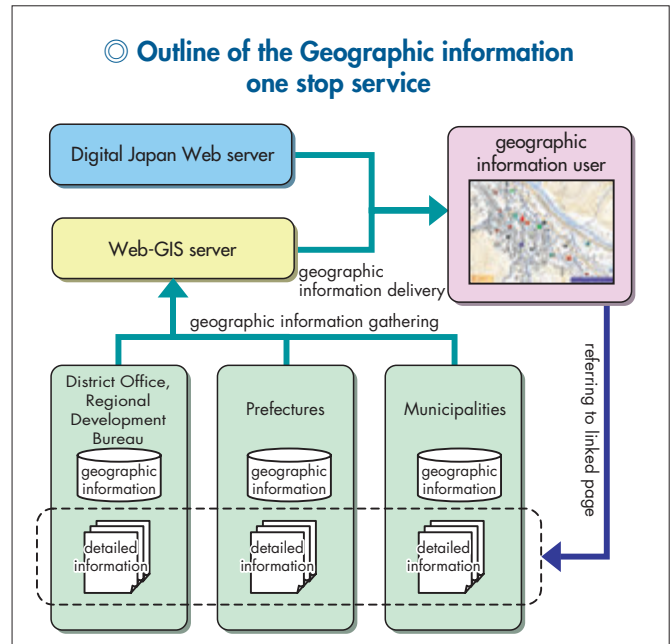
### ■ Feature of the system

- Adopt the Digital Japan (Denshi Kokudo) Web system of the Geographical Survey Institute as a platform.
- Various geographic information such as administration information and sightseeing information are to be mashed up on one map.
- Geographic information can be distributed without considering GIS.
- Cross-organizational information service and sharing
- Link function to the Web page of detailed information

JACIC is operating the Web-GIS "geographic information one stop service" site where various geographic information collected from various organizations is integrated on one map.

This service makes it possible to improve convenience of geographic information users, to share information with suppliers of geographic information, and to increase in efficiency of their work.

JACIC is supporting the "Digital Japan" initiative of the Geographical Survey Institute through operation of the geographic information one stop service. Moreover, we prepare easy way to create the geographic information one stop service site.



## TRABIS

Technical Reports And Boring Information System

The geological information is the pillar of socio-economic activity and is inevitable for construction and maintenance of social infrastructure as well as general buildings related to their safety and security. In order to promote efficient use of geological information, the government is promoting electronic delivery of geological survey results in public works. JACIC has been engaged in amendment and assistance of the electronic delivery manuals and maintenance and improvement of TRABIS which is a storage and management system of the geological information of the national government. Currently, discussion to build an environment to make geological information of various organizations as national and local governments available mutually or public use.

## NETIS

New Technology Information System

From August, 2006, the government has fully employed "the new technology utilization system in public-works" for the purpose of the promotion of utilization of effective new technology and improvement in technology, and is emphasizing post evaluation. In this regard, it became required to register information on trial and adoption of new technology, verification and evaluation of effect of new technology in the New Technology Information System (NETIS).

JACIC is engaged in functional improvement and support of the system.



## International exchange and contribution

### Promotion of international cooperation in construction information field

As construction information technology is getting more and more globalized, it is expected for Japan to contribute to its progress. JACIC is dispatching Japanese information to abroad, and collecting and introducing foreign information to Japan, and is playing a role of the contact point for international exchange as a leading organization in construction ICT field. JACIC is taking a leading role in promoting international exchange especially in Asia.



Presentation of Prof. Yabuki of Osaka Univ. at the open seminar co-held with the 5th meeting

### Asia Construction IT Round-table Meeting

JACIC and the Committee on Civil Engineering Information Processing of the Japan Society of Civil Engineers have been jointly hosting the "Asia Construction IT Round-table Meeting" since FY 2005.



The 5th Asia construction IT round-table meeting

Features of Asian region, such as rich of natural disasters and dynamic economic development, has led high expectation and requirement to construction and maintenance of infrastructure facilities. Therefore, performance improvement of construction industry in the region will bring large benefit to the people and companies of each country. Moreover, improving natural resource management and hazard mitigation capability over the region by promoting the exchange and trade among countries will be expected to produce big benefit. On the other hand, however, construction industry has many problems in installation of efficient and new technology, since it has too deep historical ties with public sector, and it is labor concentrated with small and medium sized companies.

The Asia Construction IT Round-table Meeting, recognizing such problems, gathers the key persons concerning construction ICT and experts from industry, academia and government of Asian countries, aims to discuss on engineering development and technological policy, and thus construct a continuous human network.

At the 1st meeting held in January, 2006, we co-held an workshop open to public and resolved the "Tokyo Declaration", which states to continue this activity to the future. Joint project on creation of the "Asia construction IT glossary" was proposed at the 2nd meeting, and the "Asia construction IT data book" at the 3rd meeting. The 4th meeting was held in Beijing under the cooperation of the Ministry of Housing and Urban-Rural Development, People's Republic of China, and introduced Chinese achievements in 3D data utilization.

The 5th meeting, co-held with an open seminar, we included a topic theme session on "virtual construction" for intensive discussion. The 6th meeting to be held in August, 2010 will have a topic theme as "electronic procurement".

	1st meeting	2nd meeting	3rd meeting	4th meeting	5th meeting
Date	January 28, 2006	August 24.25, 2006	August, 2, 3, 2007	October 19.20, 2008	August 6, 7, 2009
Venue	Tokyo	Tokyo	Tokyo	Beijing	Tokyo
Participated countries (number of persons)	Member	China (2), South Korea (2), Singapore (1), Japan (17)	China (2), Hong Kong (2), South Korea (3), Japan (16)	China (2), Taipei China (1), South Korea (2), Malaysia (1), Japan (11)	China (2), Taipei China (1), South Korea (2), Hong Kong (1), Indonesia (1), Japan (14)
	Observer	South Korea (3), Japan (20)	South Korea (2), Japan (12)	South Korea (2), Japan (6)	China (2), South Korea (2), Japan (3)
The main outcomes	The Tokyo Declaration was adopted	Asia construction IT terminology WG setup	Release of "Asia construction IT datebook"	started to create the Asia construction IT multi-lingual dictionary	Topic theme "virtual construction"
Remarks	The open workshop was held on the previous day			The Meeting was held following ICCCBE-XII	The open seminar was held on the day before

■ For more information, please refer to the following sites.  
<http://www.jacic.or.jp/acit/index.html>

# International Activities of CALS/EC

## International standardization activities on electronic bidding and CAD

### © International standardization activities on electronic bidding

In response to the request from industry, academia and government, JACIC, as a representative of Japan, participated in the UN/CEFACT (the United Nations Centre for Trade Facilitation and Electronic Business), subordinate organization of the United Nations, and introduced the effort of Japan on electronic bidding with the electronic bidding core system in March, 2002. As a result, Japan was assigned as a convener of the electronic bidding international standardization project. The project aims to determine standard process and data item of electronic bidding applicable for all industries. At the UN/CEFACT meeting held in Malaysia in March, 2005, the achievement was formally approved and released as the first edition (construction procurement) of the international standard of electronic bidding. Then, efforts to extend the application area have been continued and the second edition of electronic bidding international standard (construction procurement and service procurement (engineering consulting and service) and procurement of supplies and equipment) was completed in the UN/CEFACT New Delhi meeting in October, 2006.

Moreover, the electronic bidding core system of Japan was checked its conformance to the international standard, and the meeting approved that the electronic bidding core system was in conformity with the international standard.

### © International standardization activities on CAD data

The ISO TC184/SC4 is to develop international standards for the exchange of product model data in various industries. It is commonly called STEP international conference (STandard for the Exchange of Product model data) and held 3 times per year. JACIC has developed CAD data exchange format SXF which is an electronic delivery format of CAD data conforming to the STEP standards. JACIC has appealed and made coordination with other countries so that SXF can be recognized as procurement specification based on the international standard at T22 (Building & Construction) of the STEP international conference. We will continue these activities, develop SXF and collect the informations about the international standardization trend in the construction field.



The ISO TC184/SC4 international meeting



## Research projects

JACIC is executing research activities in the construction information research center and research grant program in the fields corresponding to the mission of JACIC and aiming to the promotion of arts and sciences in construction information field. Research activities has been made so far, in collaboration with industry, academia and government, are ranging as research and development of information systems, provision of construction information, promotion and dissemination of information technology. JACIC will continue to contribute to computerization in construction field, through original research activities and research grant programs, and thus contribute to the society.

### ◎ Original research activities in the Construction Information Research Institute

In order to increase efficiency in construction field, JACIC has executed original research activities on construction information system technology since 1999. Research activities have been made so far are ranging on standardization, cost estimation, GIS, CALS/EC, and other state-of-the-art information technology as well as studies abroad in corresponding fields. Followings are some of the achievements of the researches

- Research on the function and information service of the public works cost estimation system
- Research on disaster prevention GIS
- Research on CAD data exchange standard format
- Survey in U.S. on meta-data registry technology for data standard
- Research on the availability of IC tag technology in the construction field
- Development of manuals about quality management of construction work by using ICT
- Research on utilization of construction work member chart database for quality control
- Research on quality control of public works by means of informatization

Research themes planned in the fiscal 2010 are as follows.

- Development of prototype metadata registry
- Research on common code service for public works project owners
- Study on application of ICT to asset management
- Study on service to store and manage e-delivered data

### ◎ Annual Workshop of the Construction Information Research Institute

In order to report our activity and achievement of the construction information research institute to the public and to further deepen their understanding on the activity of JACIC, we are holding annual workshops of the Construction Information Research Institute from 1999. The contents of work shops with movies are released on our home page so that more people can access to the activities of JACIC and deepen their understanding of JACIC.

### ◎ Research grant program

In order to promote the arts and sciences in the construction information field, JACIC has granted researches that are contributing to smooth public procurement in correspondence with the mission of JACIC since 1998.

We have held workshops to present achievement of the granted researches since 2001. Since then, we have made amendments to improve the program, namely expansion of the grant recipient from researchers of universities and technical colleges and associated organizations to the private sector researchers since 2002, introduction of designated subject since 2004.

The program is expected to contribute to technology advancement through presentation in workshops and reports.

#### ■ The number of granted researches

FY 1998	1	FY 2001	4	FY 2004	10	FY 2007	12
FY 1999	1	FY 2002	10	FY 2005	13	FY 2008	11
FY 2000	4	FY 2003	9	FY 2006	12	FY 2009	11

#### ■ Research field to be granted (FY 2010)

[Designated subject] maximum grant amount is 3 million yen

- Product modelling, application of spatial information, extraction of valuable information.

[Free subject] maximum grant amount is 2 million yen

- Research on planning, proposal and standardization in the construction field.
- Research on computerization of the various works in the construction field



# Promotion of construction ICT

## ◎ Dissemination activities of construction ICT

We have been supporting the prize contest of technical papers and reports on construction management conducted by the Japan Federation of Construction Management Engineers Associations since 2006, and established the (IT management award) to commend the best practices of effective and smooth implementation of construction by the improvement of construction management using ICT, and thus promote information technology in construction field.

## ◎ The seminars for the RCCM qualification examination

The Registered Civil Engineering Consulting Manager (RCCM) qualification system is to certify technical ability of a consulting engineer who would be engaged in consulting service as "consulting manager" designated in the Design service Common Specification of the Ministry of Land, Infrastructure, Transport and Tourism under directive of an engineering manager or a consulting engineer. JACIC has held a seminar for the RCCM qualifying examination every summer since its establishment in 1992 in order to explain the latest trend of technology management by lecturers from both public and private sectors and to support applicants for their preparation for the examination\*.

\* The examination, registration, and its update are executed by the Japan Civil Engineering Consultants Association.

## ◎ Inspection and certification of construction technology

As an active member of the Construction Technology Review and Certification Council, JACIC conducts reviewing and certification of construction information technology. This program aims to promote research and development of private sectors and contribute to improve construction technology levels through prompt and adequate introduction and implementation of various new construction information technologies developed by private sector into public works by official certification of the technology.

The reviewed and certificated technologies of all members in the Construction Technology Review and Certification Council are shown on the JACIC Web site.

## ◎ The CALS/EC qualification system

JACIC established the CALS/EC qualification system in 2001 in order to disseminate information and to promote professionals who are expected to contribute to the introduction of CALS/EC to local governments.

JACIC has certified those who satisfied fixed requirements as "CALS/EC expert (RCE)" and "CALS/EC instructor (RCI)".

\* The examination and registration are executed by the Japan Civil Engineering Consultants Association.

360 RCEs and 2,804 RCIs are registered (as of the end of March, 2010)

## ◎ Dissemination and education of CALS/EC

JACIC is holding seminars and workshops about electronic bidding, electronic delivery and information sharing for dissemination of CALS/EC occasionally.

at JACIC district centers.

Furthermore, "CALS/EC guidebook", a textbook with full of latest information and "Self-checking software for CALS/EC", an e-learning tool are available.





## Comprehensive Information Service through Portal Site

Home page serves new and affluent information  
 Portal site serves broad information  
 Databases serve accumulated information  
 Continue to improve toward more swift and usable information service

### ◎ JACIC home page (<http://www.jacic.or.jp/>)

JACIC home page provides guidance of service, construction related news, various information, learning document, etc.

### ■ Web seminar (movies)

The movies of various seminars and workshops which JACIC held are distributed.

The following contents are distributed as of June, 2010.

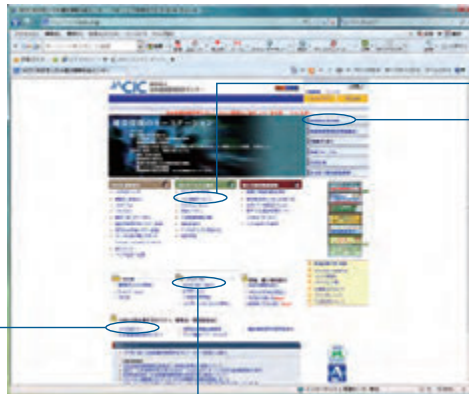
Seminars and Workshops	Number of contents
JACIC Seminars	51
Workshops on Research Grant Program	49
Infrastructure Information Standardization Seminars	39
Asia construction IT workshop	2
Annual workshop of the Construction information research institute	50

### ■ Portal site Construction general information desk (<http://www.jacic.or.jp/portal/>)

As being the portal site on construction information, useful link information concerning construction is provided. JACIC carefully selects which site to be linked, updates frequently and has been pursuing user-friendliness. It has achieved the direct link to the information which users really want.

### ◎ JACIC home page <http://www.jacic.or.jp/> RSS available

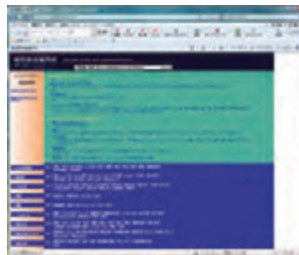
\*RSS  
 RSS (RDF Site Summary) is the format for providing headlines information such as title and outlines written in XML.  
 RSS reader will realize effective announcement of updating information on the Web site.



### ■ Web Seminar (e.g. JACIC seminar)



### ◎ Construction general information desk <http://www.jacic.or.jp/portal/>



### ◎ JACIC NET <http://www.jacicnet.jacic.or.jp/>



### ◎ Public Works Procurement Information Service



# Publicity and Publishing

## Workshops, seminars, public relations activities and publishing

### Public relations activities

JACIC is carrying out various public relation activities to promote information technology such as holding of workshops and seminars, participation in exhibitions and movie upload of JACIC seminars etc.

- JACIC seminar, infrastructure information standardization seminar, GIS seminar
- Workshops on CORINS, TECRIS, surplus construction soil and by-product resource information exchange system
- Participation with exhibition in Kensetsu fair
- Workshops of the construction information research institute and research grant program

### Training

JACIC is dispatching staff as lecturers to tutorial classes and accepting trainees from home and abroad.

### Publication

JACIC has been editing and publishing magazines and books to promote construction related information technology.

- Editing and publication of the magazine "JACIC information"
- Editing and publication of the publicity flyer "JACIC news"
- Editorial supervision of the sub magazine "Construction Management Technology"
- Editing and publication of "Production Guide of Web site with maps"
- Editing and publication of "construction information standard series" ; 8 guidelines and procedures including "CAD drawing standard (Draft)" and "River Infrastructure Map Guideline (Draft)"
- Editing and publishing of "CALs/EC guidebook for both sides of public works contract"
- Development and publishing of "e-learning tool for comprehension of CALs/EC"
- Publication of guidelines of implementing regular river survey and the instruction manual
- Publication of 100m grid total-floor-area data
- Publication of the disaster recovery support system "Photog-CAD"



JACIC information



JACIC news



e-learning tool for comprehension of CALs/EC



Production Guide of Web site with maps



Disaster recovery support system Photog-CAD



CALs/EC guidebook for both sides of public works contract

### The Supporting Members

Anyone who consent to the activity of JACIC can become a supporting member by paying the membership fee. Supporting member has the following privileges. For details, please ask the JACIC management planning department, as there is limitation in part.

- (1) Win 40% discount for the annual basic fee for JACIC NET .
- (2) JACIC sends following publications free: "JACIC information", "construction management technology", "JACIC news", "proceedings of the construction research institute workshop", "proceedings of the research grant program workshop", etc.
- (3) If you annually subscribe the JACIC information published 4 times a year and you order more number of copies than number of your memberships, then you will get 50% discount for the extra number of copies.
- (4) When you purchase JACIC publication directly, JACIC will pay the shipping.
- (5) Discount on the charged workshops, seminars, etc. held by JACIC.

# Committees

- Infrastructure Information Standardization Committee (chair: Ryosuke Shibasaki, professor, Center for Spatial Information Science, University of Tokyo)
- International meetings
  - UN/CEFACT TBG6 International standardization committee on e-tendering (secretariat)
  - ISO TC184/SC4 WG3 T22 International standardization team on building and construction (member)
- Electronic Bidding Core System Development Consortium (secretariat)

# Organization of JACIC

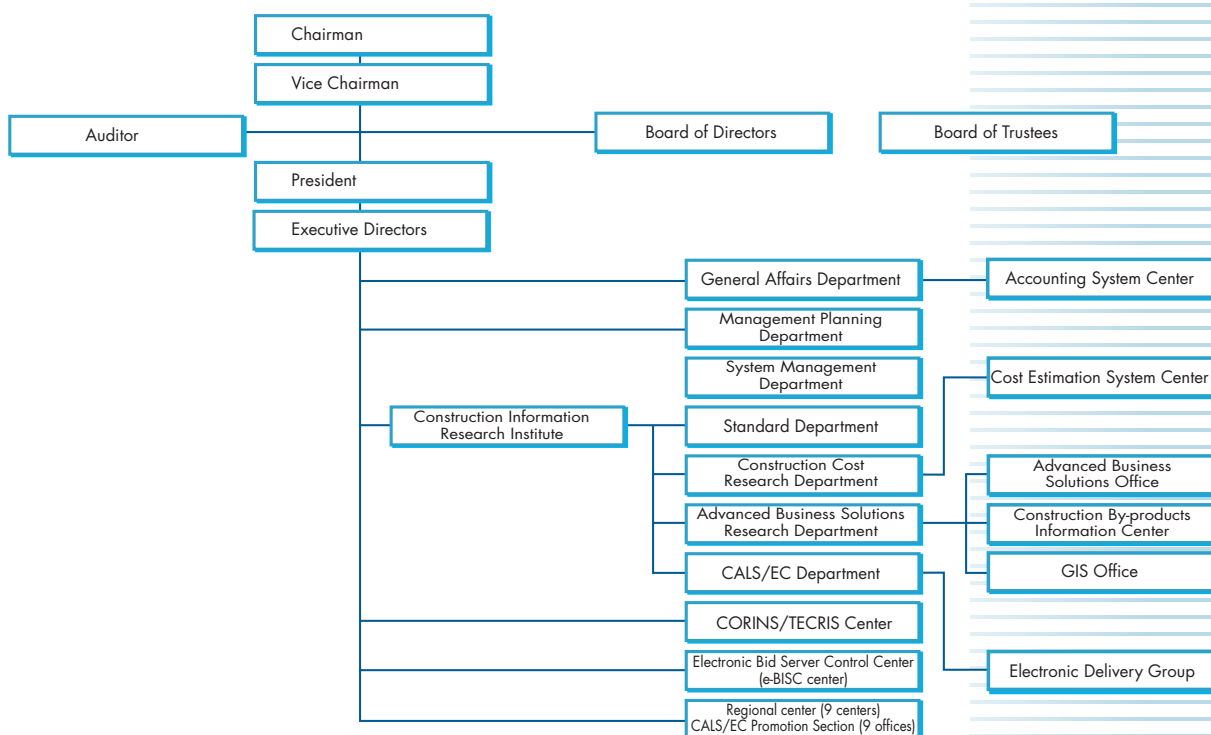
## Board of Directors

- Chairman** Tetsuya Nomura ; President, Japan Federation of Construction Contractors
- President** Takeshi Kadomatsu ; (full-time) ex-Director-General, River Bureau, MLIT
- Director** Hisakazu Arika ; (full-time) ex-Director-General, Policy Research Institute for Land, Infrastructure, Transport and Tourism
- Director** Yoshio Umehara ; (full-time) ex-Deputy Director-General, Chuubu Regional Development Bureau, MLIT
- Director** Shin Tsuboka ; (full-time) ex-Director-General, National Institute for Land and Infrastructure Management, MLIT
- Director** Masao Iri ; Honorable Prof., University of Tokyo
- Director** Masakazu Ohhashi ; Prof., Chuuou University
- Director** Shigeyuki Ohbayashi ; Honorable Prof., Tokyo University of Science
- Director** Teruaki Murata ; Chair, Public Works Committee, Japan Civil Engineering Contractors' Association, Inc.
- Director** Shunji Kusayanagi ; Prof., Kochi University of Technology
- Director** Kazumi Kurokawa ; Prof., Hosei University
- Director** Toshikazu Shimazaki ; Prof., Nihon University
- Director** Takayoshi Shiraishi ; Special committee member, Central Council on Construction Industry
- Director** Hideo Nakamura ; President, Tokyo City University
- Director** Akihiko Hiroya ; President, Japan Civil engineering Consultants Association
- Auditor** Shigeru Kowashi ; Advisor, Japan Federation of Construction Contractors
- Auditor** Takeshi Hirai ; Honorable Advisor, Mapcom Inc.

## Adviser

Yoshio Tsukio

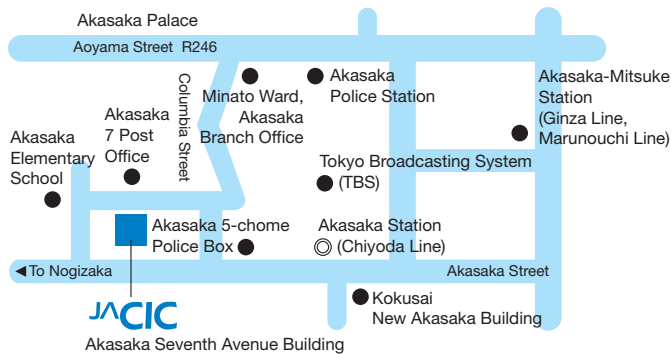
## Organization chart





## Japan Construction Information Center

Akasaka Seventh Avenue Building  
 10-20, 7-chome, Akasaka, Minato-ku, Tokyo 107-8416, Japan  
 tel.03-3505-2981 fax.03-3505-2966  
 URL...<http://www.jacic.or.jp/>  
 Any inquiry or comments are welcome at our home page



◎5 minutes walk from the exit 7, Akasaka station, Chiyoda line, Tokyo Metro

### ■Hokkaido regional center and CALS/EC promotion section

Minami 1-jou Takahata Building 2F,  
 Higashi 2-11, Minami 1-jou, Chuou-ku, Sapporo-shi, Hokkaido,  
 060-0051, Japan  
 tel.011-233-0511 fax.011-233-0512  
 Email : [hokkaido@jacic.or.jp](mailto:hokkaido@jacic.or.jp)  
 E-mail for CALS/EC section : [cals-hokkaido@jacic.or.jp](mailto:cals-hokkaido@jacic.or.jp)

### ■Tohoku regional center and CALS/EC promotion section

Ascend Sendai Futsuka-machi Building 3F,  
 16-15, Futsuka-machi, Aoba-ku, Sendai-shi, Miyagi-ken, 980-0802,  
 Japan  
 tel.022-223-9665 fax.022-223-9673  
 Email : [tohoku@jacic.or.jp](mailto:tohoku@jacic.or.jp)  
 E-mail for CALS/EC section : [cals-tohoku@jacic.or.jp](mailto:cals-tohoku@jacic.or.jp)

### ■Kanto regional center and CALS/EC promotion section

Akasaka Seventh Avenue Building 4F,  
 10-20, 7-chome, Akasaka, Minato-ku, Tokyo 107-8416, Japan  
 tel.03-3505-8805 fax.03-3505-0851  
 Email : [kanto@jacic.or.jp](mailto:kanto@jacic.or.jp)  
 E-mail for CALS/EC section : [cals-kanto@jacic.or.jp](mailto:cals-kanto@jacic.or.jp)

### ■Hokuriku regional center and CALS/EC promotion section

Shiyakusho-mae Building 6F,  
 1-12, Gakkou-machi-dori, Chuou-ku, Niigata-shi, Niigata-ken,  
 951-8126, Japan  
 tel.025-228-0856 fax.025-228-0857  
 Email : [hokuriku@jacic.or.jp](mailto:hokuriku@jacic.or.jp)  
 E-mail for CALS/EC section : [cals-hokuriku@jacic.or.jp](mailto:cals-hokuriku@jacic.or.jp)

### ■Chubu regional center and CALS/EC promotion section

Sumitomo-shoji Marunouchi Building 9F,  
 3-5-10, Marunouchi, Naka-ku, Nagoya-shi, Aichi-ken 107-8416, Japan  
 tel.052-961-1450 fax.052-961-1486  
 Email : [chuubu@jacic.or.jp](mailto:chuubu@jacic.or.jp)  
 E-mail for CALS/EC section : [cals-chuubu@jacic.or.jp](mailto:cals-chuubu@jacic.or.jp)

### ■Kinki regional center and CALS/EC promotion section

Sigunasu Building 6F,  
 2-1-9, Uchi-Hirano-cho, Chuou-ku, Ohsaka-shi, Ohsaka-fu 540-0037,  
 Japan  
 tel.06-6949-3052 fax.06-6949-3054  
 Email : [kinki@jacic.or.jp](mailto:kinki@jacic.or.jp)  
 E-mail for CALS/EC section : [cals-kinki@jacic.or.jp](mailto:cals-kinki@jacic.or.jp)

### ■Chugoku regional center and CALS/EC promotion section

Eight Valley Haccho-bori 8F,  
 4-4, Haccho-bori, Naka-ku, Hiroshima-shi, Hiroshima-ken 730-0013,  
 Japan  
 tel.082-227-1105 fax.082-227-1106  
 Email : [chuugoku@jacic.or.jp](mailto:chuugoku@jacic.or.jp)  
 E-mail for CALS/EC section : [cals-chuugoku@jacic.or.jp](mailto:cals-chuugoku@jacic.or.jp)

### ■Shikoku regional center and CALS/EC promotion section

Kotake Building 4F,  
 4-28-30, Fukuoka-cho, Takamatsu-shi, Kagawa-ken 760-0066, Japan  
 tel.087-822-4314 fax.087-822-4316  
 Email : [shikoku@jacic.or.jp](mailto:shikoku@jacic.or.jp)  
 E-mail for CALS/EC section : [cals-shikoku@jacic.or.jp](mailto:cals-shikoku@jacic.or.jp)

### ■Kyushu regional center and CALS/EC promotion section

KDX Hakata-minami Building 8F,  
 1-3-11, Hakata-eki-minami, Hakata-ku, Fukuoka-shi, Fukuoka-ken  
 812-0016, Japan  
 tel.092-411-3473 fax.092-411-3486  
 Email : [kyuushuu@jacic.or.jp](mailto:kyuushuu@jacic.or.jp)  
 E-mail for CALS/EC section : [cals-kyuushuu@jacic.or.jp](mailto:cals-kyuushuu@jacic.or.jp)

**APPENDIX 7-1-9**  
**CIRCULAR**  
**FOR CONSTRUCTION PACKAGE**  
**DATABASE SYSTEM**



Blue color font with underline is subject to further discussion and change.

**THE MINISTRY OF  
CONSTRUCTION**

**SOCIALIST REPUBLIC OF VIET NAM  
Independence - Freedom – Happiness**

No. \_\_\_\_\_

Hanoi, Abcd xx, 2013

**DRAFT CIRCULAR  
ON CONSTRUCTION PACKAGE DATABASE**

**THE MINISTER OF CONSTRUCTION**

*Pursuant to Construction Law No. 16/2003/QH11 of November 26, 2003;*

*Pursuant to Tender Law No. No. 61/2005QH11 of November 29, 2005;*

*Pursuant to Law No. 38/2009/QH12 of June 19, 2009, amending and supplementing of articles or the Laws concerning capital construction investment;*

*Pursuant to the Governments Decree No. 17/2008/ND-CP of February 4, 2008, defining the functions, tasks, powers and organizational structure of the Ministry of Construction;*

*Pursuant to the Government Decree No. 49/2008/ND-CP of April 18, 2008, amending and supplementing a number of articles of the government’s decree no. 209/2004/ND-CP of December 16, 2004*

*Pursuant to the Governments Decree No. 12/2009/ND-CP of February 10, 2009 on the management of investment projects on construction of works;*

*Pursuant to the Government Decree No. 85/2009/ND-CP of October 15, 2009, guiding the bidding law and selection of construction contractors under the construction law*

*Pursuant to the Government Decree No. 43//2010/ND-CP of April 15, 2010 on enterprise registration*

*Pursuant to the Government Decree No. 209/2012/ND-CP of xxx zz, 2012 on quality management of construction works*

*Pursuant to the Ministry of Construction Circular No. 33/2009/TT-BXD of September 30, 2009*

At the proposal of the Minister of Construction;

**CIRCULAR:**

**Article 1.** To promulgate together with this Circular, the regulation on the construction package database system shall be compiled.

**Article 2.** This Circular takes effect 15 days after its publication in official gazette.

**Article 3.** Project owners / employers, related agencies and construction contractors engaged in construction works shall observe and implement the stipulation in this Circular.

**FOR THE MINISTER OF CONSTRUCTION**



**MINISTRY OF  
CONSTRUCTION**

**SOCIALIST REPUBLIC OF VIETNAM**

**Independence - Freedom - Happiness**

*Hanoi, Abcd xx, 2013*

**REGULATION**

**ON CONSTRUCTION PACKAGE DATABASE**

(Promulgated together with the Circular [No. zz/2012/ - dated Abcd xx, 2013](#))

**Chapter 1**

**GENERAL**

**Article 1: Objectives**

The promulgation of this regulation has the following objectives:

1. To provide project owners/employers with general information on construction packages.
2. To assist project owners/employers and management agencies for selection of construction contractor at pre-qualification and tender by providing information on construction packages implemented by bidders.
3. To assist management agencies for managing project during construction by providing information on construction packages implemented by construction contractor and contractors (in case of joint venture).
4. To assist to classify construction contractors into several groups in capability by providing information on construction packages implemented by them.
5. To allow construction contractors with less papers to be submitted in pre-qualification and tender stage.

**Article 2: Scope and Objective of System**

This regulation focuses on construction packages and stipulates the construction package database system implemented in Vietnam.

Construction packages implemented by construction contractors who are in the list of the registration system of construction contractors shall be incorporated in the construction packages database system.

**Chapter 2**

**INFORMATION FROM PROJECT OWNERS / EMPLOYERS**

**Article 3: Obligation and Right of Project owners / Employers**



1. Project owners / employers in Vietnam shall provide information and obtain acceptance for the construction package database system according to the contents specified in Article 4 of this Regulation.
2. Project owners / employers whose construction packages are in the list of the construction packages database system may have right to access the detail data in the system.
3. Grace periods for project owners / employers to provide information and obtain acceptance to the construction package database system are shown below.
  - a) Construction packages in works at special grade and grade I:
 

one year after this regulation becomes effect
  - b) construction packages in works at grade II: x years after this regulation becomes effect

**Article 4: Information provided by Project owners / Employers**

The information consists of two parts, as basic data and technical data shown below, which shall be provided in accordance with the attached file, Note & Format for Construction Package Database System.

[Basic data]

1. Identification: year-serial number-contract number with (I for initial or H for interim or F for final)
2. Construction package name
3. Type of construction work – 1(five types)
4. Type of construction work – 2(sub items)
5. Grade of construction work
6. Category of construction project
7. Location of construction package
8. Source of Investment
9. Name of investor / employer
10. Representative of investor / employer
11. Address of representative with contact
12. Name of designer
13. Address of designer with contact
14. Representatives of designer
15. Name of supervision company
16. Address of supervision company with contact
17. Representatives of supervision company
18. Name of construction contractor
19. Address of construction contractor with contact

20. Representative of construction contractor:
21. Bidding process
22. Form of contract
23. Contract amount
24. Contract schedule

[Technical data]

1. Feature of construction package
2. Scope of construction package
3. Special feature of construction package
4. Quantities of major works
5. Staff of construction contractor and assignment schedule
6. Subcontractors
7. Detail Contract amount
8. Detail schedule
9. Land acquisition
  - 1) Land acquisition at Commencement: \_\_\_\_ %
  - 2) Land acquisition complete: month and year
10. Result of performance evaluation at completion
11. Full name of person providing information
  - Title
  - Telephone number
  - Email address
12. Commitment

#### **Article 5: Procedure of Information Submission**

1. Submission of information
  - a) Officer of project owners / employers (applicants) taking part in construction packages shall ensure to be honest and write clearly the full name, job title and the office address of organizations, including "Commitment" in accordance with the attached file, when providing the information to the CAMD of MOC.
  - b) Submission of information shall be made at initial, interim and final stage and project owners / employers shall make payment of fee to CAMD of MOC for maintenance of the system upon submission at initial stage. Fee shall be indicated at the address in f).
  - c) Submission of information at initial stage shall follow the steps below.
    - Applicant shall obtain forms of construction package database at the address in f).

- Applicant shall send the documents within a month after contract signed via post offices or by hand, or
  - Applicant shall send the information through web-site.
  - Applicant shall respond to the comments from CAMD of MOC, until obtaining acceptance.
- d) Submission of information at interim stage shall follow the steps below.
- When there are major changes in the information submitted in c) above, applicant shall obtain in the latest information stored in construction package database at the address in f).
  - Major changes are a) varying 10 % of scope of works, contract amount and schedule, b) change on structure of joint venture and c) changes of project manager and deputy project manager of contractor
  - Applicant shall send the documents within a month after major changes via post offices or by hand, or
  - Applicant shall send the information through web-site.
  - Applicant shall respond to the comments from CAMD of MOC, until obtaining acceptance.
- e) Submission of information at final stage shall follow the steps below.
- When construction package is complete, applicant shall obtain the latest information stored in construction package database at the address in f).
  - Applicant shall send the documents within a month after completion via post offices or by hand, or
  - Applicant shall send the information through web-site.
  - Applicant shall respond to the comments from CAMD of MOC, until obtaining acceptance.
- f) The address of CAMD
- Construction Activity Management Department (CAMD) of MOC: 37 Le Dai Hanh street.
  - Fax number: 04-9762153
  - Email address: Xaylap@moc.gov.vn
  - Website: <http://doanhnghiep.xaydung.gov.vn>

### **Chapter 3**

#### **IMPLEMENTATION**

##### **Article 6: Responsibilities of Relevant Parties**

1. CAMD of MOC shall manage and maintain the construction package database system and is the coordinator with relevant parties to implement the followings.
  - a) CAMD shall receive the information project owners / employers provide.
  - b) CAMD shall review the information for construction packages provided by project owners / employers and shall furnish either comments or acceptance on the information for construction package to project owners / employers within two weeks after receipt of the information.

- c) CAMD shall put identification number to each construction package, store the number into the construction package database system and inform the project owner / employer accordingly
  - d) CAMD shall update the list of construction packages in the construction package database system and show the identification numbers and names of construction packages in the website.
  - e) CAMD shall allow project owners/employers to access the detail data in construction package database system, if requested.
2. Project owners / employers shall be responsible for providing the information completely, timely and honestly in accordance with the stipulation of this regulation.

(The attached file: Note & Format for Construction Package Database System)

**APPENDIX 7-1-10**  
**NOTE & FORMAT FOR**  
**CONSTRUCTION PACKAGE**  
**DATABASE SYSTEM**



**NOTE FOR PROVIDING DATA OF CONSTRUCTION PACKAGE DATABASE (1)**

[Basic data]

1. Identification: year-serial number-contract number with (I for initial or H for interim or F for final):  
*serial number to be informed by system management organization*
2. Construction package name: *contract agreement to enclose*
3. Type of construction work – 1(five types): *to state in accordance with construction law or decree 209*
4. Type of construction work – 2(sub items): *to state in accordance with decree 209*
5. Grade of construction work: *to state in accordance with regulation of quality management*
6. Category of construction project: *to state in accordance with decree 12*
7. Location of construction package
8. Source of Investment: *to state in accordance with decree 12 art. 2 cl. 1 b)*
9. Name of investor / employer
10. Representative of investor / employer
11. Address of representative with contact
12. Name of designer: *to state all consultants names, in case of joint venture*
13. Address of designer with contact
14. Representatives of designer: *to state project manager and deputy project manager with ID & qualification and assignment schedule*
15. Name of supervision company: *to state all consultants names, in case of joint venture*
16. Address of supervision company with contact
17. Representatives of supervision company: *to state project manager and deputy project manager with ID & qualification and assignment schedule*
18. Name of construction contractor: *to state all contractors names with shares, in case of joint venture*
19. Address of construction contractor with contact
20. Representative of construction contractor
21. Bidding process: *to select in accordance with tender law*
22. Form of contract: *to select in accordance with decree 48*
23. Contract amount
24. Contract schedule: *to state dates of commencement & completion and warranty period*

**NOTE FOR PROVIDING DATA OF CONSTRUCTION PACKAGE DATABASE (2)**

[Technical data]

1. Feature of construction package: *to state in accordance with regulation of quality management*
2. Scope of construction package: *to follow contract agreement*
3. Special feature of construction package
4. Quantities of major works: *like earthwork, pavement, concrete etc.*
5. Staff of construction contractor and assignment schedule in accordance with Appendix I: *certificate of qualification to be enclosed*
6. Subcontractors: *to state name & scope of major subcontractors (maximum five)*
7. Detail Contract amount: *summary of bill of quantities (if any) to b enclosed*
8. Detail schedule in accordance with Appendix II
9. Land acquisition
  - 1) Land acquisition at Commencement: \_\_\_\_ %
  - 2) Land acquisition compete: month and year
10. Result of performance evaluation at completion: *score to be transferred from performance evaluation system*
11. Full name of person providing information
  - Title
  - Telephone number
  - Email address
12. Commitment with sample in CPDB Appendix III



## Construction Package Database

### [basic data]

items		details	remarks
1	Identification	20XX-000XX- (F)	<i>year-serial number-contract number (I for initial or H for halfway or F for final)</i>
2	Construction package name		<i>contract agreement to enclose</i>
3	Type of construction work - 1 (five types)	III) Transport works <input type="text" value="sample"/>	refer to construction law, decree 209
4	Type of construction work - 2 (sub items)	III-1 Road b) Expressways / Highways <input type="text" value="sample"/>	refer to decree 209
5	Grade of construction work (5 grades)	special grade / grade I <input type="text" value="sample"/>	refer to regulation of quality management
6	Category of project (4 categories)	national important / group A <input type="text" value="sample"/>	refer to decree 12
7	Location of construction package		
8	Source of investment		refer to decree 12 art. 2 cl. 1 b)
9	Name of project owner/employer		
10	Representative of project owner/employer		
11	Address of Representative		
12	Name of designer		
13	Address of designer		
14	Representatives of designer		
15	Name of supervision company		
16	Address of supervision company		
17	Representatives of supervision company		
18	Name of construction contractor		<a href="#">JV shares to show</a>
19	Address of construction contractor		
20	Representatives of contractor		
21	Bidding process	Pre-Qualification and Bidding <input type="text" value="sample"/>	refer to tender law
22	Form of contract	Design & Build Contract / Construction Contract Lump sum contract / Unit price contract / Time based contract / Percentage based contract	select in accordance with decree 48
23	Contract amount		
24	Contract schedule		<i>commencement &amp; completion date, duration and warranty period to state</i>

**Construction Package Database**

technical data

items	details	remarks
1 Features of construction package	III) Transport works- capacity (vehicle number / day, design speed), where applicable <span style="border: 1px solid black; padding: 2px;">sample</span>	refer to regulation of quality management
2 Scope of construction package	1) 2) 3) 4) 5) 6) 7)	<i>in accordance with contract agreement</i>
3 Special features of construction package		free statement, if any
4 Quantities of major works	Earthworks: 765 thousand m3 <span style="border: 1px solid black; padding: 2px;">sample</span> Pavement: 1,191 thousand m3 Concrete for bridge substructure: 46 thousand m3, Tgirders: 444 numbers	
5 Staff of construction contractor Assignment schedule	Refer to enclosed Staff Schedule	<i>minimum 3 staff copy of certificate of qualification to enclose Staff schedule (Appendix I) to enclose</i>
6 Subcontractors		<i>major subcontractors name &amp; scope (max 5 subcontractors)</i>
7 Detail Contract amount	Refer to enclosed Bid Schedule	<i>BQ etc. to enclose</i>
8 Detail schedule	Refer to enclosed Construction Schedule	<i>Construction schedule (Appendix II) to enclose</i>
9 Land acquisition	<i>Land acquisition ___ % at commencement Land acquisition complete in _____ (month &amp; year)</i>	
10 Results of evaluation at completion	<span style="border: 1px solid black; padding: 2px;"><i>not required to fill, if no evaluation is carried</i></span>	<i>Score to be transferred from Performance Evaluation System</i>
11 Full name of person providing information	name: _____, title: _____, telephone number: _____, email address: _____	<i>name, title, telephone and email address to fill up</i>
12 Commitment	Refer to enclosed letter	<i>Commitment letter (CPDB Appendix III)</i>



**(Construction Package Name to insert): CONSTRUCTION SCHEDULE**

*sample  
format to be used*

no	items	20XX												20XX												20XX												remarks
		4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12				
1	Mobilization																																					
2	Road works																																					
3	Highway Interchange																																					
	Embankment																																					
4	Surcharge																																					
5	Sub-base to Pavement																																					
6	Drainage and Common Duct																																					
7	Facilities & Finishing																																					
8	A Road																																					
9	Embankment																																					
10	Surcharge																																					
11	Sub-base to Pavement																																					
12	Drainage and Common Duct																																					
13	Facilities & Finishing																																					
14	B Road																																					
15	Drainage and Common Duct																																					
16	Facilities & Finishing																																					
17	Bridge works																																					
18	A Flyover																																					
19	Superstructure																																					
20	B Bridge																																					
21	Superstructure																																					
22	C Bridge																																					
23	Superstructure																																					
24	D Bridge																																					
25	Superstructure																																					
26	E Bridge																																					
27	Superstructure																																					
28	F Bridge																																					
29	Superstructure																																					
30	G Bridge																																					
31	Superstructure																																					

Format of Commitment

**Submission of Information for Construction Package Database System**

Attention to: the Construction Activity Management Department

My name:

Position

Representative of Organization:

Address:

Phone:

Fax:

We herewith commit and confirm that all information, statements and enclosures in this submission for construction package database are true and correct. In addition, we are ready to provide further information and clarification in this regard upon your request.

We hereby certify that we comply with all requirements and stipulations specified in the circular.

We also understand that if we fail to comply with those in the circular, we may be subject to penalty imposed by you.

Yours faithfully,

**Legal representative of the organization**

(Signature & seal)



**APPENDIX 7-2-1**  
**JAPANESE EVALUATION SHEET**

# Performance Evaluation Grid

Construction Site											Contract Price (final)										
Contractor Name	Construction Period					Year/Month/Date ~ Year/Month/Date					Completion Date					Year/Month/Date					
Evaluation Criteria		Assistant Project Manager					Project Manager					Inspection Manager					Inspection Manager (Interim Inspection)				
		Name					Name					Name					Name				
Category	Subcategory	a	b	c	d	e	a	b	c	d	e	a	b	c	d	e	a	b	c	d	e
1. Organization	i. Overall structure of construction project		+1.5	0	-5	-10															
	ii. Site engineers	+3	+1.5	0	-5	-10															
2. Management	i. Construction management		+1.5	0	-5	-10						+5	+2.5	0	-7.5	-15	+5	+2.5	0	-7.5	-15
	ii. Schedule	+1	+0.5	0	-5	-10	+10	+5	0	-7.5	-15										
	iii. Safety management	+2	+1	0	-5	-10	+15	+7.5	0	-7.5	-15										
	iv. Coordination with external organizations	+2	+1	0	-2.5	-5															
3. Quality	i. Quality of finished work	+2	+1	0	-2.5	-5						+10	+5	0	-10	-20	+10	+5	0	-10	-20
	ii. Overall quality	+2	+1	0	-2.5	-5						+15	+7.5	0	-12.5	-25	+15	+7.5	0	-12.5	-25
	iii. Workmanship											+5	+2.5	0	-5		+5	+2.5	0	-5	
4. Technical capability	i. Level of technical capability	+ (13)		0																	
5. Originality	i. Originality	+ (7)		0																	
6. Social responsibility	i. Contribution to local communities						+10	+5	0												
Subtotal (1+2+3+4+5+6)		± . points					± . points					± . points					± . points				
Evaluation point (65±Subtotal)		[1] . points					[2] . points					[3] . points					[4] . points				
7. Total evaluation point		<u>          point</u> <b>If the interim inspection has been conducted,</b> ( [1] × 0.3 + [2] × 0.3 + [3] × 0.2 + [4] × 0.2 ) = points <b>If not,</b> ( [1] × 0.3 + [2] × 0.3 + [3] × 0.4 ) = points																			
8. Failure to conform to laws and regulations												- points									
9. Incentive points for Value Engineering	i. VE at tendering stage						+3, +2, +1, 0 point(s)														
	ii. VE after contract signing						+3, +2, +1, 0 point(s)														
	Total points for VE																				



# Performance Evaluation Grid

10. Failure to conform to technical proposal	— points			
<b>11. Final Evaluation Score</b>	$\underline{\hspace{2cm}} \text{ points } (7. \text{ Total evaluation points}) - (8. \text{ Failure to conform to laws/regulations}) + (9. \text{ VE incentive}) - (10. \text{ Failure to conform to technical proposal}) = \underline{\hspace{2cm}} \text{ points}$			
Comments	Assistant Project Manager	Project Manager	Inspection Manager	Interim Inspection Manager

**APPENDIX 7-2-2**  
**ASSISTANT SITE MANAGER**



**Details of Evaluation Criteria**

(Evaluation by **Assistant Supervisor**)

Tick the applicable boxes

Category	Subcategory	a	b	c	d	e
1. Structure	i. Overall structure of construction project		Appropriate	Fair (Neither appropriate nor inappropriate)	Slightly inappropriate	Inappropriate
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Task allocation is clearly shown in the registry of execution system and the organizational chart.</li> <li><input type="checkbox"/> The project record has been registered within 10 days of contract signing.</li> <li><input type="checkbox"/> The system of Construction Industry Retirement Allowance has been explained to the workers. Appropriate certificate stamps have been purchased and the contractor is accurately keeping track of all the transactions with an account book.</li> <li><input type="checkbox"/> The execution system registry and the organizational chart have been prepared and displayed at the construction site.</li> <li><input type="checkbox"/> The appropriate number of workers and machinery is deployed, considering the scale of the project.</li> <li><input type="checkbox"/> There was no issue pointed out in the “execution process” check, or the rectification has been made/will be made immediately.</li> <li><input type="checkbox"/> Other</li> </ul> <p style="margin-left: 40px;">Description: _____</p> <p>80% or more of the above applies = b 60% to 80% applies = c 60% or less applies = d</p> <div style="border: 1px solid black; padding: 5px; margin-left: 40px;">                     (1) Out of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a denominator when calculating the percentage.                      (3) Percentage( %)=( ) no. of ticked boxes / ( ) no. of relevant criteria                      (4) If only 2 or fewer criteria are relevant, the rating will automatically become "c".                 </div>					<ul style="list-style-type: none"> <li><input type="checkbox"/> The supervisor has issued an order for improvement on the project implementation.</li> </ul> <p style="text-align: center;">If this box is ticked =&gt; “e” rating</p>
	ii. Onsite engineers (Construction Manager)		Almost appropriate	Fair (Neither appropriate nor inappropriate)	Slightly inappropriate	Inappropriate
	<p>Capabilities of onsite engineers are appropriate</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Construction Manager is thoroughly aware of the status of the project.</li> <li><input type="checkbox"/> Construction Manager has been communicating with the supervisor in a written form.</li> <li><input type="checkbox"/> All documents are filed appropriately.</li> <li><input type="checkbox"/> Onsite engineers have demonstrated some originality and innovative proposal for the implementation of the project.</li> <li><input type="checkbox"/> Onsite engineers accurately understand the contracts, drawings and guidelines, which has been reflected in the project implementation.</li> <li><input type="checkbox"/> The current status of the project has been regularly checked against the drawings and it is rectified accordingly if any discrepancy.</li> <li><input type="checkbox"/> Onsite engineers are making specific efforts to overcome challenges (eg. working environment, weather, geological conditions)</li> <li><input type="checkbox"/> Onsite engineers are thoroughly aware of the progress/structure of subcontracted works and providing precise instructions.</li> <li><input type="checkbox"/> Construction Manager has been making efficient technical decisions and special efforts for a better implementation.</li> <li><input type="checkbox"/> There was no issue pointed out in the “execution process” check, or the rectification has been made/will be made immediately.</li> <li><input type="checkbox"/> Other</li> </ul> <p style="margin-left: 40px;">Description: _____</p> <p>90% or more of the above applies = a 80% to 90% applies = b 60% to 80% applies = c 60% or less applies = d</p> <div style="border: 1px solid black; padding: 5px; margin-left: 40px;">                     (1) Out of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a denominator when calculating the percentage.                      (3) Percentage( %)=( ) no. of ticked boxes / ( ) no. of relevant criteria                      (4) If only 2 or fewer criteria are relevant, the rating will automatically become "c".                 </div>					<ul style="list-style-type: none"> <li><input type="checkbox"/> The supervisor has issued an order for improvement on the deployment of suitably capable onsite engineers</li> </ul> <p style="text-align: center;">If this box is ticked = “e” rating</p>

### Details of Evaluation Criteria

(Evaluation by **Assistant Supervisor**)

Tick the applicable boxes						
Category	Subcategory	a	b	c	d	e
2. Project status	i. Construction management		Appropriate	Fair (Neither appropriate nor inappropriate)	Slightly inadequate	Inadequate
	<ul style="list-style-type: none"> <li><input type="checkbox"/> Drawings are verified against the Section 1 to 5 of Article 18 in the Contract, and approved by the supervisor.</li> <li><input type="checkbox"/> The implementation plan matches with the actual construction method implemented onsite</li> <li><input type="checkbox"/> The implementation plan matches with the actual structure of onsite implementation.</li> <li><input type="checkbox"/> The actual onsite conditions and the details of the drawings are reflected in the project plan.</li> <li><input type="checkbox"/> The use and procurement of construction materials are carefully planned and controlled.</li> <li><input type="checkbox"/> Some measures are implemented to assure quality.</li> <li><input type="checkbox"/> The completed parts are monitored appropriately in a timely manner.</li> <li><input type="checkbox"/> Quality is controlled precisely and appropriately every day.</li> <li><input type="checkbox"/> The construction site is kept neat and organized every day.</li> <li><input type="checkbox"/> Proactive approach has been taken to improve the image of construction sites.</li> <li><input type="checkbox"/> Appropriate procedures have been followed for the inspections and onsite meetings.</li> <li><input type="checkbox"/> Project record and photos are updated appropriately.</li> <li><input type="checkbox"/> Appropriate environmental considerations are taken such as the management and recycling of construction waste.</li> <li><input type="checkbox"/> Some measures are taken to reduce noise and gas emissions generated from construction machinery and vehicles.</li> <li><input type="checkbox"/> No issue was pointed out in the “execution process” check, or the rectification has been made/will be made immediately.</li> <li><input type="checkbox"/> Other</li> </ul> <p style="margin-left: 20px;"><u>Description:</u> _____</p> <p style="margin-left: 20px;">80% or more of the above applies = b 60% to 80% applies = c 60% or less applies = d</p> <div style="border: 1px solid black; padding: 5px; margin-left: 20px;">                     (1) Out of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a denominator when calculating the percentage                      (3) Percentage( %)=( ) no. of ticked boxes /( ) no. of relevant criteria                      (4) If only 2 or fewer criteria are relevant, the rating will automatically become "c".                 </div>				<ul style="list-style-type: none"> <li><input type="checkbox"/> The actual state of the project had some discrepancies with the drawings and the supervisor issued an Order for Improvement.</li> <li><input type="checkbox"/> Implementation plan has not been submitted before the commencement of the construction.</li> <li><input type="checkbox"/> Construction materials has not been inspected as specified and destructive inspection was conducted.</li> <li><input type="checkbox"/> The supervisor has issued an Order for Improvement on the execution of responsibilities specified in the contract.</li> </ul> <p style="text-align: center; margin-left: 40px;">If 1 of the above is ticked = “d” If 2 or more of the above is ticked = “e”</p>	
	ii. Schedule management	a	b	c	d	e
	Appropriate		Almost appropriate		Fair	Slightly inadequate
<ul style="list-style-type: none"> <li><input type="checkbox"/> The status of the project is followed up and the schedule is appropriately controlled.</li> <li><input type="checkbox"/> The construction period has been shortened despite some time restrictions and traffic restrictions.</li> <li><input type="checkbox"/> The contractor accommodated some unexpected conditions of the site flexibly and promptly, and communicated closely with local communities for a smooth implementation of the project.</li> <li><input type="checkbox"/> The contractor is making sure the staff gets appropriate days off.</li> <li><input type="checkbox"/> The schedule has been reviewed and improved.</li> <li><input type="checkbox"/> The staff didn't need to work too much at night or on days off, but the project was completed well ahead of the schedule.</li> <li><input type="checkbox"/> The schedule was monitored in a schedule board or a computer every day.</li> <li><input type="checkbox"/> No issue was pointed out in the “execution process” check, or the rectification has been made/will be made immediately.</li> <li><input type="checkbox"/> Other</li> </ul> <p style="margin-left: 20px;"><u>Description:</u> _____</p> <p style="margin-left: 20px;">90% or more of the above applies = a 80% to 90% applies = b 60% to 80% applies = c 60% or less applies = d</p> <div style="border: 1px solid black; padding: 5px; margin-left: 20px;">                     (1) Out of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a denominator when calculating the percentage                      (3) Percentage( %)=( ) no. of ticked boxes /( ) no. of relevant criteria                      (4) If only 2 or fewer criteria are relevant, the rating will automatically become "c".                 </div>				<ul style="list-style-type: none"> <li><input type="checkbox"/> The project was not completed on time and the contractor is responsible for the delay. (Exception: the cases where the project fell behind the schedule to rectify the situation pointed out in an Order for Improvement)</li> </ul> <p style="text-align: center; margin-left: 40px;">If the box above is ticked = “e”</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> The contractor did not make proactive efforts on schedule management and the supervisor issued an Order for Improvement.</li> </ul> <p style="text-align: center; margin-left: 40px;">If the box above is ticked = “d”</p>		

**Details of Evaluation Criteria**

(Evaluation by **Assistant Supervisor**)

Tick the applicable boxes						
Category	Subcategory	a	b	c	d	e
	iii. Safety management	Appropriate	Almost appropriate	Fair	Slightly inadequate	Inadequate
		<input type="checkbox"/> The Safety Council has been established and all its activities are properly recorded. <input type="checkbox"/> Company-wide patrol is carried out at least once a month and its results are recorded. <input type="checkbox"/> Immediate improvement has been made on the things pointed out at the safety patrol. <input type="checkbox"/> Innovative approach has been taken to conduct safety education/training effectively at least 4hrs/month. <input type="checkbox"/> Safety patrol, "tool box meeting" (daily safety meeting) and risk prediction are conducted and the details are recorded. <input type="checkbox"/> The practice of induction training has been improved to reflect the characteristics of each project <input type="checkbox"/> Potential risks are identified every day and the appropriate preventive measures are taken against them. <input type="checkbox"/> The contractor is making specific efforts to prevent overloading. <input type="checkbox"/> All machinery and vehicles are inspected and maintained in good working order. <input type="checkbox"/> When operating heavy machinery, the location of workers and machinery are clearly distinguished to secure the safe environment. <input type="checkbox"/> Landslide protection and cofferdam are thoroughly inspected and monitored using a checklist. <input type="checkbox"/> The contractor is inspecting and monitoring the scaffolding and support structures after assembling them or during the operation. <input type="checkbox"/> Maintenance facilities are appropriately and effectively installed and maintained. <input type="checkbox"/> No issue was pointed out in the "execution process" check, or the rectification has been made/will be made immediately. <input type="checkbox"/> Other <u>Description:</u> _____			<input type="checkbox"/> Severe damage or accident occurred due to insufficient safety measures. If the box above is ticked = "e"  <input type="checkbox"/> Safety management and disaster prevention measures were not appropriately implemented.  If the box above is ticked = "d"	
	iv. coordination with external organization	Appropriate	Almost appropriate	Fair	Slightly inappropriate	Inappropriate
		<input type="checkbox"/> The contractor coordinated well with relevant authorities for a smooth execution of work and prevented problems. <input type="checkbox"/> The contractor coordinated appropriately with local communities. <input type="checkbox"/> The contractor took appropriate actions for complaints and maintained good relationships with external parties. <input type="checkbox"/> As the contractor has made specific considerations for local communities, no complaint /problem was pointed out by local residents. <input type="checkbox"/> The contractor coordinated well with other related projects for smooth implementation of all the projects. <input type="checkbox"/> No issue was pointed out in the "execution process" check, or the rectification has been made/will be made immediately. <input type="checkbox"/> Other <u>Description :</u> _____			<input type="checkbox"/> The project and other associated projects fell behind the the schedule as the contractor did not follow the project owner's instruction when making necessary coordination. If the box above is ticked = "e"  <input type="checkbox"/> There were many complaints or disputes about the contractor's execution of work.  <input type="checkbox"/> The supervisor issued a written warning as there was a possibility of the contractor's law violation.  If either of the above is ticked= "d"	

**Details of Evaluation Criteria**

(Evaluation by **Assistant Supervisor**)

Tick the applicable boxes						
Category	a	b	c	d	e	
3. Progress	<input type="checkbox"/> The completed parts meet the specifications and requirements with 50% or smaller margin of difference	<input type="checkbox"/> The completed parts meet the specifications and requirements with 80% or smaller margin of difference	<input type="checkbox"/> The completed parts generally meet the specifications but the margin of difference is above 50%.	<input type="checkbox"/> The completed parts are significantly different from the specifications and requirements beyond the allowable margin.		
i. Quality of completed parts	<div style="border: 1px solid black; padding: 5px;">                     (1) The evaluation of the completed parts should be made throughout the project                      (2) The completed parts should be same as the drawings in shape and size                      (3) The work progress control is the system to verify the completed parts of the project comply with the specifications and requirements specified in the Construction Management Guideline.                 </div>			<input type="checkbox"/> The supervisor has issued an Order for Improvement.  If the box above is ticked = "d"	<input type="checkbox"/> The contractor carried out a destructive inspection based on the Section 2 of Article 17.  If the box above is ticked = "e"	
	Design work	a	b	c	d	e
	The implementation of work progress control is appropriate	Almost appropriate	Fair	Slightly inadequate	Inadequate	
	<input type="checkbox"/> Results of the test and the measurement of completed parts are appropriately complied. <input type="checkbox"/> Status of the hidden parts is properly recorded with photos. <input type="checkbox"/> The contractor has established their own control level and complies with it. <input type="checkbox"/> The contractor complies with the guideline for taking photos of the construction site. <input type="checkbox"/> Quality, shape and size of the completed parts match with the design drawing and specifications. <input type="checkbox"/> Functions of the completed parts or the finished work match with the drawing and specifications. <input type="checkbox"/> Other Description: _____  90% or more of the above applies = a 80% to 90% applies = b 60% to 80% applies = c 60% or less applies = d			<input type="checkbox"/> The supervisor has issued an Order for Improvement  If the box above is ticked = "d"	<input type="checkbox"/> The contractor carried out a destructive inspection based on the Section 2 of Article 17.  If the box above is ticked = "e"	
	<div style="border: 1px solid black; padding: 5px;">                     (1) Out of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a denominator when calculating the percentage                      (3) Percentage( %)=( ) no. of ticked boxes / ( ) no. of relevant criteria                      (4) If only 2 or fewer criteria are relevant, the rating will automatically become "c"                 </div>					
ii. overall quality	a	b	c	d	e	
	<input type="checkbox"/> The completed parts meet the specifications and requirements with a small margin of difference.		<input type="checkbox"/> The results of the quality control test satisfy the specifications.	<input type="checkbox"/> Some results of the quality control test are significantly different beyond the allowable margin.	<input type="checkbox"/> The results of the quality control test do not satisfy the specifications and the quality is low.	
	<div style="border: 1px solid black; padding: 5px;">                     (1) The evaluation of the completed parts should be made throughout the project                      (2) The completed parts should be same as the drawings in shape and size                      (3) The work progress control is the system to verify the completed parts of the project comply with the specifications and requirements specified in the Construction Management Guideline.                 </div>			<input type="checkbox"/> The supervisor has issued an Order for Improvement  If the box above is ticked = "d"	<input type="checkbox"/> The contractor carried out a destructive inspection based on the Section 2 of Article 17  If the box above is ticked = "e"	

**Details of Evaluation Criteria**

(Evaluation by **Assistant Supervisor**)

Tick the boxes that apply.

Category		a	b	c	d	e	
ii overall quality	Architectural building work	Quality control is appropriate	Almost appropriate	Fair	Slightly inadequate	Inadequate	
		<p><b>(Building frame)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Quality control method is clearly established.</li> <li><input type="checkbox"/> Quality of construction materials is appropriately assured.</li> <li><input type="checkbox"/> Status of the hidden parts is properly recorded with photos.</li> <li><input type="checkbox"/> The quality and the method of the work are appropriate.</li> </ul> <p><b>(Finishing)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Quality control method is clearly established.</li> <li><input type="checkbox"/> Quality of construction materials is appropriately assured.</li> <li><input type="checkbox"/> Quality of the work are appropriate and is in good order .</li> </ul> <p><b>(Equipment installation)</b></p> <ul style="list-style-type: none"> <li><input type="checkbox"/> There is a certificate to prove that the quality and shape of the equipment comply with the design specifications. If it's certified by the Japan Industrial standard (JIS), no other certificate will be required.</li> <li><input type="checkbox"/> The equipment has been thoroughly tested by its manufacturer and there is a certificate to prove it complies with the design specifications.</li> <li><input type="checkbox"/> Thorough test is conducted after the installation and its results are recorded accurately in detail.</li> <li><input type="checkbox"/> The details of a test run are recorded, with which the equipment's functions are verified.</li> <li><input type="checkbox"/> Status of the hidden parts is properly recorded with photos.</li> <li><input type="checkbox"/> Quality of the installation and the shape of the equipment are appropriate and in good order.</li> </ul> <p>90% or more of the above applies = a                      80% to 90% applies = b                      60% to 80% applies = c                      60% or less applies = d</p>			<ul style="list-style-type: none"> <li><input type="checkbox"/> The supervisor has issued an Order for Improvement on the current state.</li> </ul> <p>If the box above is ticked = "d"</p>		<ul style="list-style-type: none"> <li><input type="checkbox"/> The contractor carried out a destructive inspection based on the Section 2 of Article 17</li> </ul> <p>If the box above is ticked = "e"</p>
		<p>(1) Out of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a denominator when calculating the percentage                      (3) Percentage( %)=( ) no. of ticked boxes /( ) no. of relevant criteria                      (4) If only 2 or fewer criteria are relevant, the rating will automatically become "c"</p>					
	Facility work excl. architectural work	Quality control is appropriate	Almost appropriate	Fair	Slightly inadequate	Inadequate	
		<ul style="list-style-type: none"> <li><input type="checkbox"/> Quality control method is clearly established.</li> <li><input type="checkbox"/> Quality and shape of all facilities are consistent and there is a certificate to prove they comply with the specifications. If they are certified by JIS or under the Electrical Appliances and Materials Control Act, no other certificate will be required.</li> <li><input type="checkbox"/> There is a certificate to prove the facilities comply with the specifications and perform the intended functions.</li> <li><input type="checkbox"/> The performance of the whole system was as specified (demonstrated at the field test).</li> <li><input type="checkbox"/> There are documents that clearly indicate the functions/performance of the facilities.</li> <li><input type="checkbox"/> There are documents that clearly indicate the name of manufacturer and the date of manufacturing.</li> <li><input type="checkbox"/> Status of the hidden parts is properly recorded with photos.</li> </ul> <p>90% or more of the above applies = a                      80% to 90% applies = b                      60% to 80% applies = c                      60% or less applies = d</p>			<ul style="list-style-type: none"> <li><input type="checkbox"/> The supervisor has issued an Order for Improvement on the current state.</li> </ul> <p>If the box above is ticked = "d"</p>		<ul style="list-style-type: none"> <li><input type="checkbox"/> The contractor carried out a destructive inspection based on the Section 2 of Article 17</li> </ul> <p>If the box above is ticked = "e"</p>
		<p>(1) Out of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a denominator when calculating the percentage                      (3) Percentage( %)=( ) no. of ticked boxes /( ) no. of relevant criteria                      (4) If only 2 or fewer criteria are relevant, the rating will automatically become "c"</p>					



**Details of Evaluation Criteria**

(Evaluation by **Assistant Supervisor**)

Tick the boxes or circle the bullet points that apply.

Category	Subcategory	Areas where technical capability was demonstrated	Example of innovative and original methods
4. Technical capability	i. Advanced technology	<ul style="list-style-type: none"> <li>■ Ability to undertake large-scale construction work                             <ul style="list-style-type: none"> <li>□ 1.Height and length of structures; (cross-sectional) size and depth of construction area.</li> <li>□ 2.Other</li> </ul> <p style="margin-left: 20px;">Description: _____</p> </li> </ul>	<p>[Example of large-scale project]</p> <ul style="list-style-type: none"> <li>• Cut slope, embankment 500,000 m3 &lt; V      • Area of one caisson's foundation base &gt;= 100m2, Excavation &gt; 30m</li> <li>• Long-span, large cross section tunnel with 3 or more lanes and emergency parking bays (2.0km or longer)</li> <li>• Bridge substructure: height 30m &lt; H      • Superstructure: Longest span 100m &lt; L      • semi-underground structure: depth 10m &lt; H</li> <li>• Newly constructed toilets for a rest area with 250 or more parking slots</li> <li>• Tunnel safety facilities such as sprinklers      • Power distribution facilities for high-voltage power</li> <li>• Traffic control center or facility control center      • Tunnel ventilation facilities such as electric dust catcher</li> </ul>
		<ul style="list-style-type: none"> <li>■ Dealing with difficult structures                             <ul style="list-style-type: none"> <li>□ 3.Complexity of the structures (thickness of earth coverings, tunnel alignment)</li> <li>□ 4.Special type of work (reinforcement, removal of existing structure)</li> <li>□ 5.Other</li> </ul> <p style="margin-left: 20px;">Description: _____</p> </li> </ul>	<p>[Example of special methods implemented to overcome structural difficulties]</p> <ul style="list-style-type: none"> <li>• Constructions with special considerations for soft ground, thin earth coverings (eg. Finite Element Analysis)</li> <li>• Construction of special types of bridges (Arch bridge, cable-stayed bridge, suspension bridge, etc.)</li> <li>• Enlargement of an existing tunnel's cross section, integrated expansions of existing bridge and new bridges, etc.</li> <li>• Functional/structural enhancement of existing and new facilities</li> <li>• Construction implemented while securing the functions of existing facilities in operation</li> <li>• New technologies and methods implemented to accommodate special needs (particular structures or construction sites)</li> <li>• Pilot project (special technique is required in patented method or for special test field, etc)</li> <li>• Adoption of special method or materials (computer simulated designing process, etc.)</li> <li>• Implementation of advanced technologies/technique for VE proposal</li> <li>• Other projects that deserve to be noted here (particularly challenging structure or technologies)</li> </ul>
		<ul style="list-style-type: none"> <li>■ Dealing with technical difficulty                             <ul style="list-style-type: none"> <li>□ 6.Special type/method of construction</li> <li>□ 7.Introduction of new method (machinery) or material</li> <li>□ 8.Other</li> </ul> <p style="margin-left: 20px;">Description: _____</p> </li> </ul>	<p>[Example of flexible approach to accommodate natural conditions and geological conditions]</p> <ul style="list-style-type: none"> <li>• Drainage facilities (well points, etc.) and large-scale landslide prevention measures for bridge pier constructions in rivers</li> <li>• Redesigning required for geological complications (eg. geological survey conducted for each cast-in-place pile)</li> <li>• Tunnel excavation in hazardous conditions (swelling ground, excessive inflow of ground water, fault breccia/gouge)</li> <li>• Slow banking method implemented for soft soil (ie. involves long waiting time and requires accurate understanding of the number and the usage rate of construction machines)</li> <li>• Project completed under limited use of scaffolding and platform due to the mountainous terrain or where the workers were on a lifeline (except for slope work).</li> <li>• Extra construction work (eg. landslide prevention) required to secure safety in steep mountainous terrain or on slopes.</li> <li>• Projects executed in rivers/sea where ships or barges are used for most parts and high waves affected the project's workability.</li> <li>• Installation of scaffolding due to the risk of high waves and unstable water levels, or the frequent use of divers to work around the water</li> <li>• Works in national parks where there were some constraints on the construction methods due to considerations for rare species.</li> <li>• Special considerations for natural/geological conditions and worth mentioning</li> </ul>
		<ul style="list-style-type: none"> <li>■ Dealing with harsh environmental/geological condition                             <ul style="list-style-type: none"> <li>□ 9.Inflow of spring water and ground water (during excavation)</li> <li>□ 10.Soft ground, unfavorable ground condition</li> <li>□ 11.Restricted space due to adverse ground conditions (river, sea, steep mountains, limited space for construction road, etc.)</li> <li>□ 12.Extreme weather (rain, snow, storm, temperature, wave)</li> <li>□ 13.Geological conditions (landslide, rapid river flow, influence of tidal current, considerations for animals/plans)</li> <li>□ 14.Other</li> </ul> <p style="margin-left: 20px;">Description: _____</p> </li> </ul>	<p>[Example of flexible approach to surrounding environment and social conditions]</p> <ul style="list-style-type: none"> <li>• Project involving an open cut method for local roads currently in operation and the transfer of utility pipes/cables, which has impacted the schedule</li> <li>• Overbridge construction that crosses with railways or roads in operation</li> <li>• Underpass construction that crosses with residential areas</li> <li>• Nighttime work in urban areas.</li> <li>• Work in Densely Inhabited District (DID)</li> <li>• Project with one-lane closure of local roads in operation (daily average traffic volume &gt;=10,000 vehicles)</li> <li>• Traffic on local roads in operation (&gt;=10,000 vehicles) was routed temporarily.</li> <li>• Some traffic regulations were required for working on an automobile-only highway in operation.</li> <li>• Project involving transfer of some obstacles, which caused a delay in the schedule and required some extra manpower or machinery to expedite the process</li> <li>• Regulatory signs installed and removed every day to open the site to traffic during non-working hours for most of the construction period.</li> <li>• Projects with many constraints involving coordination with local communities and environmental measures.</li> <li>• Projects with various constraints and tight schedule</li> <li>• Projects that accommodated the results of some survey or monitoring.</li> <li>• The implementation of environmental measures has affected the project schedule.</li> <li>• The construction yard is small and restricted in height; therefore construction machines could only be moved and turned in the limited areas.</li> <li>• Projects executed at above atmospheric pressure.</li> <li>• Some measures were required against oxygen shortage and toxic/flammable gas. Project was executed more than 10m above the sea level.</li> <li>• Schedule was delayed because of other construction projects and extra number of staff and machines were required to expedite the process.</li> <li>• The technique/technology used to accommodate the social conditions or surrounding environment that something to be commended.</li> </ul>
		<ul style="list-style-type: none"> <li>■ Accommodating social conditions and environment                             <ul style="list-style-type: none"> <li>□ 15.Obstacles in the construction site (buried pipes, etc.)</li> <li>□ 16.Considerations for adjoining facilities (buildings, roads, ) railways, aerial cables in service)</li> <li>□ 17.Efforts to prevent noise and vibration for local residents.</li> <li>□ 18.Considerations for water quality</li> <li>□ 19.Restrictive site conditions of roads to deliver construction materials into the site</li> <li>□ 20.Lane closures</li> <li>□ 21.Environmental considerations other than prevention of noise, vibration, water pollution (waste management, etc)</li> <li>□ 22.Other</li> </ul> <p style="margin-left: 20px;">Description: _____</p> </li> </ul>	<p>[Example of flexible approach to surrounding environment and social conditions]</p> <ul style="list-style-type: none"> <li>• Project involving an open cut method for local roads currently in operation and the transfer of utility pipes/cables, which has impacted the schedule</li> <li>• Overbridge construction that crosses with railways or roads in operation</li> <li>• Underpass construction that crosses with residential areas</li> <li>• Nighttime work in urban areas.</li> <li>• Work in Densely Inhabited District (DID)</li> <li>• Project with one-lane closure of local roads in operation (daily average traffic volume &gt;=10,000 vehicles)</li> <li>• Traffic on local roads in operation (&gt;=10,000 vehicles) was routed temporarily.</li> <li>• Some traffic regulations were required for working on an automobile-only highway in operation.</li> <li>• Project involving transfer of some obstacles, which caused a delay in the schedule and required some extra manpower or machinery to expedite the process</li> <li>• Regulatory signs installed and removed every day to open the site to traffic during non-working hours for most of the construction period.</li> <li>• Projects with many constraints involving coordination with local communities and environmental measures.</li> <li>• Projects with various constraints and tight schedule</li> <li>• Projects that accommodated the results of some survey or monitoring.</li> <li>• The implementation of environmental measures has affected the project schedule.</li> <li>• The construction yard is small and restricted in height; therefore construction machines could only be moved and turned in the limited areas.</li> <li>• Projects executed at above atmospheric pressure.</li> <li>• Some measures were required against oxygen shortage and toxic/flammable gas. Project was executed more than 10m above the sea level.</li> <li>• Schedule was delayed because of other construction projects and extra number of staff and machines were required to expedite the process.</li> <li>• The technique/technology used to accommodate the social conditions or surrounding environment that something to be commended.</li> </ul>
		<ul style="list-style-type: none"> <li>■ Flexibility at the site                             <ul style="list-style-type: none"> <li>□ 23.Flexible actions at times of disaster</li> <li>□ 24.Spontaneous proposals and actions to accommodate changes in site conditions</li> <li>□ 25.Other</li> </ul> <p style="margin-left: 20px;">Description: _____</p> </li> </ul>	

	<p>■ Other</p> <p>□ 26. Other technical capabilities that should be commended as excellent examples of construction methods</p> <p>Description: _____</p>	<p>[Other]</p> <ul style="list-style-type: none"> <li>• Other technologies and techniques worth evaluating as excellent examples of construction methods</li> </ul>
<p>Evaluation score [Detailed description of the ticked boxes]</p>	<p><b>Score:</b> _____ points (from 0 to 13 points)</p> <ul style="list-style-type: none"> <li>• Points of up to 13 are given for the contractor's technical capability.</li> <li>• Score should be calculated based on the number of ticked boxes and the significance of each.</li> </ul> <p>On average, 1 ticked box equals 2 points but this can be even higher or lower as the evaluator sees fit.</p>	<p>[Detailed description of the advanced technology and the technical capability demonstrated by the contractor]</p> <p>-----</p> <p>-----</p> <p>-----</p>

### Details of Evaluation Criteria

Tick the boxes that apply

(Evaluation by **Assistant Supervisor**)

Category	Subcategory	1. Areas where an innovative approach was demonstrated	Applicability	Quality	Safety	Work environment	Other (please describe)		
5. Originality	i. Originality	<ul style="list-style-type: none"> <li>■ Preparation and cleanup                             <ul style="list-style-type: none"> <li><input type="checkbox"/> 1. Measuring and marking</li> <li><input type="checkbox"/> 2. Other (Description: _____)</li> </ul> </li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )	
		<ul style="list-style-type: none"> <li>■ Construction process                             <ul style="list-style-type: none"> <li><input type="checkbox"/> 3. Equipment, tools and devices used in the construction; and the method of operation</li> <li><input type="checkbox"/> 4. Use of alternative materials such as prefabricated concrete products</li> <li><input type="checkbox"/> 5. Earthwork, soil improvement, bridge installation, pavement work, concrete casting, etc.</li> <li><input type="checkbox"/> 6. Means and method of transport for machinery, parts and materials (eg. suspension method)</li> <li><input type="checkbox"/> 7. Assembling and processing of materials for facility works; wiring and plumbing for electric work</li> <li><input type="checkbox"/> 8. Freeze prevention for pipes and pumps used in plumbing system</li> <li><input type="checkbox"/> 9. Lighting facilities, visibility enhancement measures</li> <li><input type="checkbox"/> 10. Well-planned management of temporary drainage, detour or temporary pathways</li> <li><input type="checkbox"/> 11. Delivery truck, construction machinery</li> <li><input type="checkbox"/> 12. Temporary installation of scaffolding, support structure, forms, temporary bridges, landslide prevention walls, covering plates, etc.</li> <li><input type="checkbox"/> 13. Construction management and quality enhancement</li> <li><input type="checkbox"/> 14. Other (Description: _____)</li> </ul> </li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )	
		<ul style="list-style-type: none"> <li>■ Quality-related matters                             <ul style="list-style-type: none"> <li><input type="checkbox"/> 15. Use of data tabulation software</li> <li><input type="checkbox"/> 16. Earthwork, machinery/facility and communications facilities (component, installation, quality, finished work)</li> <li><input type="checkbox"/> 17. Concrete casting (material, casting, curing, finished work, quality)</li> <li><input type="checkbox"/> 18. Components (rebar, PC cable, prefabricated concrete structures)</li> <li><input type="checkbox"/> 19. Rebar arrangement and welding work</li> <li><input type="checkbox"/> 20. Other (Description: _____)</li> </ul> </li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )	
		<ul style="list-style-type: none"> <li>■ Safety issues                             <ul style="list-style-type: none"> <li><input type="checkbox"/> 21. Installation of temporary safety facilities (Prevention of obstacles, safety net, sign board, "No Entry" barrier, railing, scaffolding, etc.)</li> <li><input type="checkbox"/> 22. Safety training, technical seminar, safety patrol, safety belt, etc.</li> <li><input type="checkbox"/> 23. Construction office and accommodation for workers</li> <li><input type="checkbox"/> 24. Handling of toxic/flammable gas, ventilation, preventive measures against dust</li> <li><input type="checkbox"/> 25. Accident prevention, safety measures for general public, safety buffer to protect crashed vehicles</li> <li><input type="checkbox"/> 26. Improvement of harsh environmental conditions</li> <li><input type="checkbox"/> 27. Environmental measures to protect the earth (Reduction of garbage, engine idling)</li> <li><input type="checkbox"/> 28. Other (Description: _____)</li> </ul> </li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )	
		<ul style="list-style-type: none"> <li>■ Project management                             <ul style="list-style-type: none"> <li><input type="checkbox"/> 29. Compaction of embankment, cast-in-place piles</li> <li><input type="checkbox"/> 30. Management of construction plans and photo data</li> <li><input type="checkbox"/> 31. Quality test of completed parts, data tabulation, process control chart</li> <li><input type="checkbox"/> 32. Use of CAD, project management software, etc.</li> <li><input type="checkbox"/> 33. Other (Description: _____)</li> </ul> </li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )	
		<ul style="list-style-type: none"> <li>■ Others                             <ul style="list-style-type: none"> <li><input type="checkbox"/> 34. Other (Description: _____)</li> <li><input type="checkbox"/> 35. Other (Description: _____)</li> <li><input type="checkbox"/> 36. Other (Description: _____)</li> </ul> </li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )	
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )
					<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> (            )
		Evaluation score [Detailed description of the ticked boxes]	[Detailed descriptions of the innovative approaches/technical approaches implemented]						
	Score: _____ points (from 0 to 7 points) <ul style="list-style-type: none"> <li>• Points of up to 7 are given for the contractor's original and innovative efforts.</li> <li>• Score should be calculated based on the number of ticked boxes and the significance of each. On average, 1 ticked box equals 1 point but this can be even higher or lower as the evaluator sees fit</li> </ul>								

**APPENDIX 7-2-3**  
**SITE MANAGER**



**Details of Evaluation Criteria**

Tick the applicable boxes

(Evaluation by **Supervisor**)

Category	Subcategory	a	b	c	d	e
2. Project Status	II. Schedule Control	Excellent	Good	Fair (neither excellent nor poor)	Needs improvement	Poor
	<input type="checkbox"/> Completed the project well in advance despite the tight schedule while accommodating to changes in the plan or land acquisition process. <input type="checkbox"/> Prevented potential problems by communicating with other adjacent construction projects and working in a well-coordinated schedule. <input type="checkbox"/> Communicated thoroughly with relevant authorities and local communities; as a result, only a few problems arose during the project and the construction was completed within the scheduled timeframe. <input type="checkbox"/> Onsite engineers (onsite manager) were making particular efforts to control the schedule. <input type="checkbox"/> Other Reason: _____ * Take all of the above into account and rate them from “a” to “e”					
	III. Safety Management	a	b	c	d	e
	Excellent                      Good                      Fair                      Needs improvement                      Poor <input type="checkbox"/> Made outstanding efforts to prevent accidents involving workers or third parties <input type="checkbox"/> Established and implemented a system of safety management <input type="checkbox"/> Actively worked towards the safety management to set a good example for other contractors <input type="checkbox"/> Promoted the development of new technologies and innovations to facilitate safety management <input type="checkbox"/> Demonstrated great leadership, for example through active participation in the Safety Council <input type="checkbox"/> Made special efforts to ensure safe work environment, which have been highly valued by the whole community <input type="checkbox"/> Other Reason: _____ * Take all of the above into account and rate them from “a” to “e”					

**Details of Evaluation Criteria**

(Evaluation by **Supervisor**)

Tick the applicable boxes

Category	Subcategory	a	b	c
6. Social responsibility	1. Contribution to local community	Excellent	Good	Fair (Neither excellent nor good)
<p><input type="checkbox"/> Took some specific actions for environmental preservation (river, seacoast, etc.).</p> <p><input type="checkbox"/> Took active approach to preserve the surrounding environment (incl. national/prefectural parks) or to protect rare species of animals and plants</p> <p><input type="checkbox"/> Took active approach to keep harmony of the surrounding environment (eg. arrange the construction office or construction site in a way that would blend in well with the landscape of the region).</p> <p><input type="checkbox"/> Communicated actively with the local community through regularly publishing brochures or organizing site tours</p> <p><input type="checkbox"/> Participated actively in local volunteer activities (eg. picking up trash, cleaning road surface) to contribute to local communities</p> <p><input type="checkbox"/> Took initiative in assisting disaster-relief actions in local communities</p> <p><input type="checkbox"/> Other Reason : _____</p> <p>* Take all of the above into account and rate them from “a” to “c”</p>				

\* Contribution to local community means respect for local community or its residents

Tick the applicable boxes

Category	Penalties for noncompliance	
8. Law compliance	<input type="checkbox"/> 1. Disqualification from the tender process for $\geq$ 3 months	Evaluation score – 20 point
	<input type="checkbox"/> 2. Disqualification: $\geq$ 2 month, < 3 months	– 15
	<input type="checkbox"/> 3. Disqualification: $\geq$ 1 month, < 2 months	– 13
	<input type="checkbox"/> 4. Disqualification: $\geq$ 2 weeks, < 1 month	– 10
	<input type="checkbox"/> 5. Written warning	– 8
	<input type="checkbox"/> 6. Verbal warning	– 5
	<input type="checkbox"/> 7. Verbal warning for the cases where an accident occurred involving workers and third parties but the cause of the accident was a trivial fault such as human error (No further accusation was made. Excludes accidents caused by third parties or traffic accidents)	– 3
	<input type="checkbox"/> Not applicable	
<p>(1) This category (8. Law compliance) will be included in the evaluation only when the above penalties were applied in the cases described below.</p> <p>(2) The evaluation is made exclusively for the execution of the work specified in the contract (project name, construction period, construction site, etc.)</p> <p>(3) The following people are evaluated: onsite manager, managing engineer, chief engineer, onsite workers and other people who were contracted to execute (2)</p> <p>(4) If more than one penalty were applied, all disqualification periods were totaled and the added total is used to find the evaluation score in the table above. Verbal or written warning will not be counted into this purpose.</p> <p>&lt;Cases where this category is included in the evaluation&gt; (Circle the numbers that apply)</p> <ol style="list-style-type: none"> <li>1. The document submitted before the bid registration was found out to be dishonest.</li> <li>2. The responsibilities and the rights of the contractor were transferred to other parties without consent of the project owner.</li> <li>3. Working conditions (incl. accommodation) provided by the contractor were inappropriate and the case was sent to prosecutors.</li> <li>4. It was found out that the contractor violated laws (eg. illegal dumping, unauthorized gathering of gravel).</li> <li>5. Someone involved in the construction was arrested or prosecuted due to bribery, etc.</li> <li>6. There was an evidence of violation against the Construction Industry Act (eg. subcontracting of the whole work, )</li> <li>7. Some workers were found out to be working against the Immigration Law and prosecuted.</li> <li>8. The contractor was prosecuted for some violation against the Labor Standards Act.</li> <li>9. The contractor interfered with or used undue political power to interfere with the execution of supervision or inspection.</li> <li>10. The contractor did not pay for subcontracted work by the due date as prescribed in Article 4 of the Act against Delay in Payment of Subcontract Proceeds, or unduly lowered the amount of payment to be made to subcontractors.</li> <li>11. The contractor was arrested or prosecuted for some violation against the Road Traffic Act (eg. overloading).</li> <li>12. Some employees of the contractor's company were found out to be members or associates of an organized crime group.</li> <li>13. Some subcontractors were associated with an organized crime group. Violation of Article 9 of the Anti-Organized Crime Law was committed in the delivery of goods (gravel, sand, sound-proof sheet, cotton gloves, etc), employment of guards and construction workers, and installment of vending machines for construction workers, etc.</li> <li>14. Industrial accidents involving some deaths of workers; or severe property damage and accidents involving third parties occurred due to insufficient safety management.</li> <li>15. The supervisor has sent a written advice on the documents regarding the registry of execution system and the organizational structure, but the contractor did not follow the advice.</li> <li>16. Others Reason : _____</li> </ol>		



**Details of Evaluation Criteria**

[Criteria for evaluating the proposal of Value Engineering (VE) ]

(Evaluation by **Supervisor**)

VE Proposal Criteria		Description	Individual Rating		
General criteria	Understanding of the concept specified by the project owner	Are the project owner's needs incorporated in the proposal?	a	b	c
	Originality of the proposal	Are new construction methods and technologies implemented? Does the proposal include original approach?	a	b	c
	Project plan	Are the following incorporated in the proposal: reliable safety measures, reliable/effective plan, efficient construction period, extensive proposal documents, etc.?	a	b	c
	Cost reduction	Is the cost likely to be reduced with the proposed construction method?	a	b	c
	Consideration for social needs	Are environmental measures such as recycling implemented?	a	b	c
	Applicability of technology	Can this method be applied in similar type of projects in the future? Is this technology likely to spread widely?	a	b	c
Special consideration		(Please describe)	a	b	c
Total rating	The submitted VE proposal will be evaluated comprehensively, taking account of its originality and the cost efficiency, etc.				
	Excellent	<ul style="list-style-type: none"> <li>When 2 or more "a" are given in the above</li> <li>When 1 "a" and 3 or more "b" are given in the above</li> </ul> *Exception: if "a" is given to the cost reduction criteria, the total rating will be "excellent" even when it didn't meet the above conditions.			
	Good	<ul style="list-style-type: none"> <li>When 1 "a" and 2 or fewer "b" ratings are given</li> <li>When no "a" and 2 or more "b" ratings are given</li> </ul>			
	Fair	<ul style="list-style-type: none"> <li>When there is no "a" or "b" rating</li> </ul>			

- Note
- 1) The VE Review Board and the individual ratings for each criterion will be examined to assess the overall rating from "A" to "C"
  - 2) Appropriate criteria should be added to the "special consideration" section depending on the type of project proposal.
  - 3) For each criterion, "a" denotes "excellent," "b" denotes "good" and "c" denotes "fair."
  - 4) The ratings for only the relevant criteria should be taken into account.

**Details of Evaluation Criteria**

[Criteria for evaluating the implementation of Value Engineering (VE)]

(Evaluation by **Supervisor**)

VE Implementation Criteria	Description	Individual Rating		
Project implementation	Has the project been implemented as proposed? Has the schedule been managed appropriately according to the proposal? Have the quality assurance measures and safety measures been implemented sufficiently? Has the progress of the project been recorded and filed appropriately?	a	b	c
Implementation process	Has the contractor communicated sufficiently with supervisors about the proposal? Was there any accident or problem attributable to the proposal? Was an appropriate action taken at the occurrence of a problem?	a	b	c
Outcome and appearance	Does the completed part meet the requirements such as specifications? Does the quality vary considerably beyond the allowable range? Has a fine finishing been added to the completed part and is it aesthetically pleasing?	a	b	c
Performance	Has the proposed performance been achieved?	a	b	c
(Comment)				
Total rating	The implemented VE proposal should be evaluated comprehensively, taking account of the implementation process, progress and each evaluation criteria.			
	A	<ul style="list-style-type: none"> <li>When one or more “a” and no “c” ratings have been given in the above.</li> </ul>		
	B	<ul style="list-style-type: none"> <li>When one or more “b” and no “c” ratings have been given</li> </ul>		
C	<ul style="list-style-type: none"> <li>One or more “c” ratings have been given</li> </ul>			

- Note
- 1) VE Review Board and each evaluation criteria will be examined to assess the overall rating from “A” to “C”
  - 2) If there are some other details with particular relevance to VE, they should be written down in the “comment” section.
  - 3) For each criterion, “a” denotes “excellent”, “b” denotes “satisfactory” and “c” denotes “unsatisfactory”.
  - 4) The ratings for only the relevant criteria should be taken into account.

**Details of Evaluation Criteria**

[Criteria for evaluating VE project (proposal and implementation)]

(Evaluation by **Supervisor**)

Rating for VE proposal	Rating for VE implementation	Overall score for both proposal and implementation [points]	Description
Excellent	A	3	Proposal was excellent and it was implemented excellently
	B	3	Proposal was excellent and it was implemented satisfactorily.
	C	2	Proposal was excellent but it was not implemented as proposed.
Good	A	3	Proposal was good and it was implemented excellently.
	B	2	Proposal was good and it was implemented satisfactorily.
	C	1	Proposal was good but it was not implemented as proposed.
Fair	A	2	Proposal was ok but it was implemented excellently.
	B	1	Proposal was ok and it was implemented satisfactorily.
	C	1	Proposal was ok but it was not implemented as proposed.
	--	0	Proposal was not worth to be evaluated and has not been implemented.
--	--	0	No proposal was made.

- Note
- 1) The overall rating should take into account the evaluation on both the proposal and the implementation of value engineering.
  - 2) Evaluation should be made both at the time of tendering process and after the contract signing, using the above criteria.

**APPENDIX 7-2-4**  
**INSPECTOR**



**Evaluation Criteria (Final Inspection)**

(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category	Subcategory	a	b	c	d	e										
2.Project Status	i. Construction Management	Excellent	Good	Fair	Bad	Poor										
		<p>[Evaluation criteria for construction management]</p> <ul style="list-style-type: none"> <li><input type="checkbox"/> Drawings are verified against the Section 1 to 5 of Article 18 in the Contract and work was executed accordingly</li> <li><input type="checkbox"/> The implementation plan matches with the actual construction method implemented onsite</li> <li><input type="checkbox"/> All documents concerning construction materials were properly filed, checked and stored</li> <li><input type="checkbox"/> Adopted an original approach to the quality assurance</li> <li><input type="checkbox"/> Contractor has adopted an original approach to the management of construction data including photos and samples.</li> <li><input type="checkbox"/> Necessary arrangements were made for inspections and onsite meetings beforehand</li> <li><input type="checkbox"/> Construction record has been updated accurately and in a timely manner</li> <li><input type="checkbox"/> Environmental measures have been taken such as recycling of construction waste</li> <li><input type="checkbox"/> Allocation of tasks and responsibilities are clearly shown in relevant documents</li> <li><input type="checkbox"/> Contractor submitted a revised implementation plan whenever the plan was changed in any way</li> <li><input type="checkbox"/> Contractor submitted an implementation plan before the start of construction, which contained required information and reflected design drawings and site conditions</li> <li><input type="checkbox"/> All relevant documents are filed appropriately</li> <li><input type="checkbox"/> Contractor has established the Standards of Maintenance and complied with it</li> <li><input type="checkbox"/> Other</li> </ul> <p>Description: _____</p>			<ul style="list-style-type: none"> <li><input type="checkbox"/> Supervisor has issued the Order for Improvement in writing as the actual state of the project had some discrepancies with the drawings</li> <li><input type="checkbox"/> Inspector has made a written advice on the execution of responsibilities specified in the contract</li> </ul> <p><b>Rating:</b> If one of the above is ticked: d If both are ticked: e</p>											
		<table border="1"> <thead> <tr> <th>Rating</th> <th>Number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>More than 90% of the above</td> </tr> <tr> <td>b</td> <td>80 - 90%</td> </tr> <tr> <td>c</td> <td>60 - 80%</td> </tr> <tr> <td>d</td> <td>less than 60%</td> </tr> </tbody> </table>		Rating	Number of boxes ticked	a	More than 90% of the above	b	80 - 90%	c	60 - 80%	d	less than 60%	<div style="border: 1px solid black; padding: 5px;"> <p>(1) Of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a modulus for calculating the percentage                      (3) Evaluation rating ( %) = Number of ticked boxes ( ) / Number of relevant criteria ( )                      (4) If only 2 or fewer criteria are relevant, the rating will automatically become “c”</p> </div>		
Rating	Number of boxes ticked															
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b	80 - 90%															
c	60 - 80%															
d	less than 60%															

**Evaluation Criteria (Final Inspection)**

(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	a	b	c	d	e										
3. Progress control, quality and performance	<input type="checkbox"/> Measurements of completed part of work match the values in specifications and standards with 50% or smaller margin of difference	<input type="checkbox"/> Measurements of completed part of work match the values in specifications and standards with 80% or smaller margin of difference	<input type="checkbox"/> Measurements of completed part of work comply with the specifications and standards, but do not satisfy the criteria for “a” or “b” shown in the left	<input type="checkbox"/> Measurements of completed part of work significantly differ from the values in specifications and standards beyond the allowable margin											
i. Progress control of project	<div style="border: 1px solid black; padding: 5px;">                     (1) Evaluation of completed part of work should be made throughout the project                      (2) Completed part is evaluated against the shapes and sizes specified in the drawings                      (3) The work progress control refers to the system to ensure that the completed part of the project comply with the specifications and requirements of the Construction Management Guideline                 </div>			<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17.  If this box is ticked: e										
Facility work	a	b	c	d	e										
	The implementation of work progress control is appropriate	Almost appropriate	Fair	Slightly inadequate	Inadequate										
	[Evaluation criteria for facility work] <input type="checkbox"/> Results of the test and the measurements of completed part of work were appropriately compiled <input type="checkbox"/> Conditions of hidden part of work were properly recorded with photos <input type="checkbox"/> Contractor has established the Standard of Maintenance and complied with it <input type="checkbox"/> Contractor complied with the guideline on photographing of facility work <input type="checkbox"/> Quality, shape and size of the completed part of work match the design drawings and specifications <input type="checkbox"/> Functions of the completed part of work or the installed facilities match the drawings and specifications <input type="checkbox"/> Other  Description: _____			<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17.  If this box is ticked: e										
	<table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr> <th>Rating</th> <th>Number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>More than 90% of the above</td> </tr> <tr> <td>b</td> <td>80 - 90%</td> </tr> <tr> <td>c</td> <td>60 - 80%</td> </tr> <tr> <td>d</td> <td>less than 60%</td> </tr> </tbody> </table>		Rating	Number of boxes ticked	a	More than 90% of the above	b	80 - 90%	c	60 - 80%	d	less than 60%	<div style="border: 1px solid black; padding: 5px;">                     (1) Of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a modulus for calculating the percentage                      (3) Evaluation rating ( %) = Number of ticked boxes ( ) / Number of relevant criteria ( )                      (4) If only 2or fewer criteria are relevant, the rating will automatically become “c”                 </div>		
Rating	Number of boxes ticked														
a	More than 90% of the above														
b	80 - 90%														
c	60 - 80%														
d	less than 60%														

**Evaluation Criteria (Final Inspection)**

Tick the applicable boxes

(Evaluation by **Chief Inspector**)

Category/ Subcategory	Type of work	a	b	c	d	e
3. Progress control, quality and performance	Earthwork (1/2)	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low
ii. Overall quality		<p>[Evaluation criteria for concrete structures]</p> <input type="checkbox"/> Testing of concrete mix formula was carried out, followed by trial mixing, as specified by the drawings and specifications to achieve appropriate standard of concrete (strength, water/cement ratio, maximum aggregate size, amount of alkali) <input type="checkbox"/> The initial strength, slump, and amount of air in concrete were checked and the results were confirmed appropriate <input type="checkbox"/> It is verified that the concrete sample used for testing genuinely came from this construction site <input type="checkbox"/> Transportation time, staff allocation, concrete casting speed, drop height of concrete mix, type of vibrating compactor, and method of curing are verified to meet the construction requirements and weather conditions <input type="checkbox"/> When removing formworks, it was ensured that the concrete had already set and gained sufficient strength <input type="checkbox"/> Specifications of rebars are clearly shown in the inspection certificate <input type="checkbox"/> Tensile strength and flexural strength of rebar were tested <input type="checkbox"/> Rebars were appropriately stored until the concrete casting stage <input type="checkbox"/> Rebars were properly manufactured and assembled <input type="checkbox"/> Pressure welding work was carried out properly <input type="checkbox"/> Materials used for concrete spacer bars have been chosen carefully and their qualities are ensured <input type="checkbox"/> Spacer bars were arranged into proper locations with sufficient thickness of concrete covering <input type="checkbox"/> Appropriate construction joints have been made <input type="checkbox"/> There is no progressive or severe crack; Appropriate measure has been implemented for existing cracks based on expert opinion <p>[Evaluation criteria for embankment and cut slope]</p> <input type="checkbox"/> Appropriate facilities and measures have been implemented to drain rainwater and ground water <input type="checkbox"/> Effective benching has been implemented in advance <input type="checkbox"/> Particular attention has been paid not to excavate the soil more than necessary <input type="checkbox"/> Trial was done beforehand and its outcome has been reflected in the actual compaction work <input type="checkbox"/> Soil around structures has been treated and compacted appropriately <input type="checkbox"/> Deflection test (proof rolling) was done on roadbed <input type="checkbox"/> Appropriate compaction and shaping were done to prevent cracks and damage on slope <input type="checkbox"/> Appropriate protection work has been implemented on the surface soil <input type="checkbox"/> Initial configuration for the RI meter is appropriate <input type="checkbox"/> Compaction of soil was done at an appropriate timing <input type="checkbox"/> The bottoms of drain pipes are smooth and in uniform gradient. Back-filled area has an equal or even higher level of strength than the surrounding soil and has not been affected by rain erosion. <input type="checkbox"/> By using finishing stakes or other equipment, the thickness of compacted surface was kept within an appropriate range <input type="checkbox"/> Slope rounding was implemented and ensured a smooth transition from the top of slope to the surrounding environment <input type="checkbox"/> Dynamic observation method was applied on the embankment of soft soil <input type="checkbox"/> Appropriate drainage has been implemented for the ground underneath the structures <p>[Evaluation criteria for slope protection work]</p> <p>&lt;Seed spraying, borrow soil spraying, double-layer spraying method&gt;</p> <input type="checkbox"/> Soil was tested (soil conditions, hardness, PH, groundwater) and the results have been reflected in the actual work <input type="checkbox"/> Edges of adjacent sheets of wire net are overlapping by at least 1 column of mesh <input type="checkbox"/> Material was sprayed with the same thickness consistently <input type="checkbox"/> If required, materials were sprayed in 2 or more layers <input type="checkbox"/> Work was completed at an appropriate timing, considering weather and temperature <input type="checkbox"/> Appropriate finish was applied on the slope surface (incl. removal of stones and root fragments from the soil) <p>&lt;Concrete or mortar spray method&gt;</p> <input type="checkbox"/> Edges of adjacent sheets of wire net are overlapping by at least 1.5 columns of mesh <input type="checkbox"/> Thickness of concrete/mortar layer was properly checked to ensure its consistency <input type="checkbox"/> Special measures have been implemented to prevent splashing of concrete/mortar <input type="checkbox"/> Drain holes are functioning well			<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17.  If this box is ticked: e



**Evaluation Criteria (Final Inspection)**

(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d	e						
3. Progress control, quality and performance  ii. Overall quality	Earthwork (2/2)	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low						
		<Cast-in-place concrete framework> <ul style="list-style-type: none"> <li><input type="checkbox"/> Strength of concrete was checked after casting and confirmed appropriate</li> <li><input type="checkbox"/> There was no air void trapped in concrete casted into the mold</li> <li><input type="checkbox"/> Contact surface between different adjacent layers is intact with no separation</li> <li><input type="checkbox"/> Specific measures were implemented to prevent splashing of concrete</li> <li><input type="checkbox"/> Slope surface was completed with appropriate finishing touch (eg. removal of stones and root fragments from the soil)</li> </ul> [Evaluation criteria for foundation work]                     <Precast piles (concrete/steel pipes, steel caisson)> <ul style="list-style-type: none"> <li><input type="checkbox"/> No damage or sign of repair could be found</li> <li><input type="checkbox"/> Methods of installing and maintaining cast-in-place piles have been established and the records were kept appropriately</li> <li><input type="checkbox"/> The levelness in horizontal/vertical direction, and the safety level were checked and confirmed appropriate</li> <li><input type="checkbox"/> The quality of weld work complied with the specifications</li> <li><input type="checkbox"/> As a cast-in-place pile, Tremie pipe was inserted 2m into concrete</li> <li><input type="checkbox"/> Depth of excavation, volume of removed soil, change in water level, concentration of stabilizer, and the level of specific gravity were kept within the appropriate range.</li> <li><input type="checkbox"/> Close attention was paid to minimize the degree of eccentricity and distortion when assembling liner plates</li> <li><input type="checkbox"/> Pressure applied during back-fill grouting is shown in the construction record</li> </ul> [Evaluation criteria for landslide prevention work (incl. installation of protection piles and catch basins)] <ul style="list-style-type: none"> <li><input type="checkbox"/> Drain holes are functioning well</li> <li><input type="checkbox"/> Level of strength, slump and the air volume of concrete were checked after its casting and confirmed appropriate</li> <li><input type="checkbox"/> Specifications of rebars were clearly shown in the inspection certificate</li> <li><input type="checkbox"/> Anchor work was checked and confirmed appropriate</li> <li><input type="checkbox"/> Anchor bearing plate is sitting firmly to the ground surface</li> </ul> [Evaluation criteria for tunnel construction] <ul style="list-style-type: none"> <li><input type="checkbox"/> Sprayed surface is smooth</li> <li><input type="checkbox"/> Edges of adjacent sheets of wire net are overlapping by at least 1 column of mesh</li> <li><input type="checkbox"/> Rock bolts were inserted and tightened to the appropriate level</li> <li><input type="checkbox"/> Mortar around rock bolts were sufficiently filled</li> <li><input type="checkbox"/> The bottom of steel arch support is sitting firmly on the ground</li> <li><input type="checkbox"/> Waterproof sheet was laid sufficiently loose</li> <li><input type="checkbox"/> Some protection has been applied to rock bolts (bolt head) to prevent tearing of waterproof sheet</li> <li><input type="checkbox"/> Appropriate measure has been implemented on the concrete sprayed surface to drain groundwater</li> <li><input type="checkbox"/> The formwork used for concrete lining was removed at an appropriate time</li> <li><input type="checkbox"/> There is no air trapped between the concrete lining and the surrounding rock mass</li> <li><input type="checkbox"/> Transverse drain pipes are located appropriately to effectively drain groundwater</li> <li><input type="checkbox"/> The findings from the monitoring and measuring of excavation face have been reflected in the actual construction</li> <li><input type="checkbox"/> Construction materials have been stored in an appropriate manner</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">                     (1) Of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a modulus for calculating the percentage                      (3) Evaluation rating (    %) = Number of ticked boxes (    ) / Number of relevant criteria (    )                      (4) If only 2or fewer criteria are relevant, the rating will automatically become “c”                 </div> <p>* If not enough number of test results is collected, use the above list and the following criteria instead:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Rating</th> <th style="width: 85%;">Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">a</td> <td>Work quality is generally consistent and more than 80% of the above list is ticked</td> </tr> <tr> <td style="text-align: center;">b</td> <td>generally consistent, 60% - 80% is ticked</td> </tr> <tr> <td style="text-align: center;">c</td> <td>generally consistent, less than 60% is ticked</td> </tr> </tbody> </table>			Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent and more than 80% of the above list is ticked	b	generally consistent, 60% - 80% is ticked	c	generally consistent, less than 60% is ticked
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a	Work quality is generally consistent and more than 80% of the above list is ticked											
b	generally consistent, 60% - 80% is ticked											
c	generally consistent, less than 60% is ticked											

**Evaluation Criteria (Final Inspection)**

(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d	e								
3. Progress control, quality and performance  ii. Overall quality	Pavement	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)	<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low									
		[Evaluation criteria for pavement] <Roadbed and subgrade> <input type="checkbox"/> CBR value was measured and other relevant reference data were collected for pavement design <input type="checkbox"/> Ratios of water and cement content, and volume of cement have been recorded and filed <input type="checkbox"/> Degree of compaction has been recorded and filed <input type="checkbox"/> Proof rolling has been done to detect and rectify defects <input type="checkbox"/> Compaction has been done particularly carefully around the edges  <Asphalt pavement> <input type="checkbox"/> Construction materials were stored at a plant in good conditions <input type="checkbox"/> Trial mixing was conducted to verify the asphalt mixture complies with the design specifications <input type="checkbox"/> Temperature of mixture was strictly controlled (checked upon the dispatch from the plant, arrival at the site, start of paving work) <input type="checkbox"/> Urgently required sections were opened to traffic promptly after the completion of pavement work <input type="checkbox"/> Pavement joints are not positioned in line with other joints in adjacent layers, as prescribed in the specifications <input type="checkbox"/> Work on construction joints complies with the specifications <input type="checkbox"/> Appropriate methods of paving and delivering mixture have been selected considering weather conditions of the site <input type="checkbox"/> Bitumen was added as prescribed in the specifications <input type="checkbox"/> Volume of sprayed bitumen has been recorded and filed <input type="checkbox"/> Pavement thickness complies with the specifications <input type="checkbox"/> Existing surface was scraped appropriately  <Concrete pavement> <input type="checkbox"/> Trial mixing of concrete was conducted in accordance with the specifications to confirm it had the appropriate strength, water/cement ratio, maximum aggregate size, alkali content, etc. <input type="checkbox"/> Concrete sample was collected during casting to check its strength, slump, air content, etc. <input type="checkbox"/> It is verified that the concrete sample used for the testing genuinely came from this particular construction site <input type="checkbox"/> Considering the site conditions and weather conditions, appropriate delivery time, casting method and curing method were selected <input type="checkbox"/> Tie-bars and chairs were stored in good conditions <input type="checkbox"/> Some corrosion prevention method was implemented for rebars, steel fences, spacers and other steel components; When some components were corroded, appropriate measures were taken to remove the rust.			<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17.  If this box is ticked: e								
		<div style="border: 1px solid black; padding: 5px;">                     (1) Of all the criteria above, only the relevant ones will be examined.                      (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a modulus for calculating the percentage                      (3) Evaluation rating (    %) = Number of ticked boxes (    ) / Number of relevant criteria (    )                      (4) If only 2 or fewer criteria are relevant, the rating will automatically become “c”                 </div>												
		* If not enough number of test results is collected, use the above list and the following criteria instead:												
		<table border="1"> <thead> <tr> <th>Rating</th> <th>Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Work quality is generally consistent and more than 80% of the above list is ticked</td> </tr> <tr> <td>b</td> <td>generally consistent, 60% - 80% is ticked</td> </tr> <tr> <td>c</td> <td>generally consistent, less than 60% is ticked</td> </tr> </tbody> </table>			Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent and more than 80% of the above list is ticked	b	generally consistent, 60% - 80% is ticked	c	generally consistent, less than 60% is ticked		
Rating	Quality consistency and the number of boxes ticked													
a	Work quality is generally consistent and more than 80% of the above list is ticked													
b	generally consistent, 60% - 80% is ticked													
c	generally consistent, less than 60% is ticked													

**Evaluation Criteria (Final Inspection)**

(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d	e
3. Progress control, quality and performance  ii. Overall quality	Superstructure work for PC or steel bridge (1/2)	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low
		[Evaluation criteria for superstructure work] <Concrete> <input type="checkbox"/> Trial mixing of concrete was conducted in accordance with the specifications to confirm it had the appropriate strength, water/cement ratio, maximum aggregate size, alkali content, etc. <input type="checkbox"/> Concrete sample was collected during casting to check the strength, slump, air content, etc. <input type="checkbox"/> It is verified that the concrete sample used for the testing genuinely came from this particular construction site <input type="checkbox"/> Considering the site conditions and weather conditions, the appropriate delivery time, staff allocation, speed of concrete casting, casting height, vibrator type and curing method have been selected (both for cold and hot weather) <input type="checkbox"/> When removing formworks, it was ensured that the concrete had already set and gained sufficient strength <input type="checkbox"/> Specifications of rebars are clearly shown in the inspection certificate <input type="checkbox"/> Tensile strength and flexural strength of rebar were tested <input type="checkbox"/> Rebars were appropriately stored until the concrete casting stage <input type="checkbox"/> It is verified that construction workers have the sufficient level of skills to carry out pressure welding <input type="checkbox"/> Right material is selected for spacers to perform the required quality <input type="checkbox"/> Spacers are arranged appropriately to make sure rebars are covered sufficiently with concrete <input type="checkbox"/> Appropriate construction joints have been made <input type="checkbox"/> Rebar arrangement is appropriate  <Prestressing steel> <input type="checkbox"/> Level of flection applied for preflexed beam (Prebeam) was appropriate <input type="checkbox"/> All instruments (equipment) have been calibrated correctly <input type="checkbox"/> Tensioning and grouting have been properly implemented <input type="checkbox"/> Concrete strength at the time of prestressing was more than 1.7 times larger than the intensity of compressive stress <input type="checkbox"/> Sample was left in the same curing condition as the actual concrete structure to test the compressive strength <input type="checkbox"/> The qualities of prestressing steel and anchorages meet the required level <input type="checkbox"/> Prestressing steels were stored in good conditions until use <input type="checkbox"/> Sheaths and grout hoses are positioned appropriately <input type="checkbox"/> Timbering structure is designed to accommodate the deformation caused by prestressing <input type="checkbox"/> Special plan is in place for efficient setting of pre-grouting resin <input type="checkbox"/> After applying presstress to pre-grouted steel, appropriate finish has been applied  <Prefabrication at plant> <input type="checkbox"/> The number of rebars has been checked against the inspection certificate <input type="checkbox"/> Welding has been done appropriately <input type="checkbox"/> Before painting, it was made sure that the work surface was completely dry <input type="checkbox"/> As part of surface preparation process, primer coat was applied within 24 hours of blasting <input type="checkbox"/> Painting has been done in a good work environment <input type="checkbox"/> Components have been manufactured with a high dimensional accuracy that meets the Company’s internal target <input type="checkbox"/> Percentage of welds that fail to meet specifications is low, and the failure has been rectified properly			<input type="checkbox"/> Supervisor issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor carried out a destructive inspection as described in the Section 2 of Article 17.  If this box is ticked: e

**Evaluation Criteria (Final Inspection)**

(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d	e								
3. Progress control, quality and performance  ii. Overall quality	Superstructure work for PC or steel bridge (2/2)	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)	<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low									
		<Erection> <ul style="list-style-type: none"> <li><input type="checkbox"/> Tightness of bolts was checked and its record has been properly kept</li> <li><input type="checkbox"/> Bolt tensioner and measuring devices have been correctly calibrated</li> <li><input type="checkbox"/> Execution of work, quality control and inspection have been appropriately conducted for onsite welding</li> <li><input type="checkbox"/> Camber was strictly controlled to achieve the designed height</li> <li><input type="checkbox"/> Percentage of welds that fail to meet specifications is low, and the failure has been rectified properly</li> <li><input type="checkbox"/> The weld surface is dry</li> <li><input type="checkbox"/> The painting was completed in an appropriate environment</li> </ul> <Accessories> <ul style="list-style-type: none"> <li><input type="checkbox"/> Bridge accessories (bearing, expansion joint, drainage, inspection path) are maintained in good conditions</li> <li><input type="checkbox"/> Qualities of bridge accessories (bearing, expansion joint, drainage, inspection path) comply with the specifications</li> <li><input type="checkbox"/> Appropriate corrosion prevention measures have been implemented</li> <li><input type="checkbox"/> Quality of bearing complies with the specifications</li> <li><input type="checkbox"/> Appropriate corrosion prevention measures have been implemented</li> <li><input type="checkbox"/> Concrete is maintained in good conditions after its casting</li> <li><input type="checkbox"/> Anchors have been installed at appropriate locations</li> </ul>			<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17.  If this box is ticked: e								
		(1) Of all the criteria above, only the relevant ones will be examined. (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a modulus for calculating the percentage (3) Evaluation rating ( %) = Number of ticked boxes ( ) / Number of relevant criteria ( ) (4) If only 2 or fewer criteria are relevant, the rating will automatically become “c”												
		* If not enough number of test results is collected, use the above list and the following criteria instead:												
		<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 15%;">Rating</th> <th>Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Work quality is generally consistent and more than 80% of the above list is ticked</td> </tr> <tr> <td>b</td> <td>generally consistent, 60% - 80% is ticked</td> </tr> <tr> <td>c</td> <td>generally consistent, less than 60% is ticked</td> </tr> </tbody> </table>			Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent and more than 80% of the above list is ticked	b	generally consistent, 60% - 80% is ticked	c	generally consistent, less than 60% is ticked		
Rating	Quality consistency and the number of boxes ticked													
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**Evaluation Criteria (Final Inspection)**(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d	e										
3. Progress control, quality and performance  ii. Overall quality	Building work	The implementation of quality control is excellent	Good	Fair	Bad	Poor										
		[Evaluation criteria for building work] <Building frame> <input type="checkbox"/> Contractor has taken an original approach and established a clear quality control method <input type="checkbox"/> Qualities of construction materials are assured in an appropriate method <input type="checkbox"/> Conditions of hidden part of work have been properly recorded with photos <input type="checkbox"/> Quality, shape and size of construction are appropriate <Finishing work> <input type="checkbox"/> Contractor has established a clear quality control method <input type="checkbox"/> Qualities of construction materials are assured in an appropriate method <input type="checkbox"/> Quality, shape and size of construction are appropriate <Facility installation> <input type="checkbox"/> Quality and shape of equipment have been verified against the design drawing <input type="checkbox"/> Facilities were tested by their manufacturers and have a certificate to prove they comply with the design specifications <input type="checkbox"/> Tests were conducted upon the completion of construction and the results have been recorded appropriately <input type="checkbox"/> It is verified that the facilities function fine and the log of trial run has been filed appropriately <input type="checkbox"/> Conditions of hidden part of work have been properly recorded with photos <input type="checkbox"/> Quality, shape and size of construction are appropriate  <div style="border: 1px solid black; padding: 5px;">             (1) Of all the criteria above, only the relevant ones will be examined.              (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a modulus for calculating the percentage              (3) Evaluation rating (      %) = Number of ticked boxes (      ) / Number of relevant criteria (      )              (4) If only 2or fewer criteria are relevant, the rating will automatically become “c”           </div> * <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Rating</th> <th>Number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>More than 90% of the above</td> </tr> <tr> <td>b</td> <td>80 - 90%</td> </tr> <tr> <td>c</td> <td>60 - 80%</td> </tr> <tr> <td>d</td> <td>less than 60%</td> </tr> </tbody> </table>			Rating	Number of boxes ticked	a	More than 90% of the above	b	80 - 90%	c	60 - 80%	d	less than 60%	<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor carried out a destructive inspection as described in the Section 2 of Article 17.  If this box is ticked: e
Rating	Number of boxes ticked															
a	More than 90% of the above															
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c	60 - 80%															
d	less than 60%															
	Facility work (excl. building work)	The implementation of quality control is excellent	Good	Fair	Bad	Poor										
		[Evaluation criteria for facility work] <input type="checkbox"/> The methods of quality control are clear <input type="checkbox"/> Each component part of facility (materials, assembled parts) has been manufactured with the consistent quality, shape and size, and have a certificate to prove the products comply with the design drawings Note: If it complies with the Japan Industrial Standard (JIS) or the Electrical Appliances and Materials Control Act, it only requires a certificate for the entire system of facility, but not for each individual part <input type="checkbox"/> There is a certificate to prove the facility performs the functions specified in the design drawings <input type="checkbox"/> The results of the tests conducted at plant or construction site show the performance of the entire system is as designed <input type="checkbox"/> There are documents that clearly indicate the functions/performance of each facility <input type="checkbox"/> There are documents that clearly indicate the name of the manufacturer and date of manufacturing <input type="checkbox"/> Conditions of hidden parts are properly recorded with photos  <div style="border: 1px solid black; padding: 5px;">             (1) Of all the criteria above, only the relevant ones will be examined.              (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a modulus for calculating the percentage              (3) Evaluation rating (      %) = Number of ticked boxes (      ) / Number of relevant criteria (      )              (4) If only 2or fewer criteria are relevant, the rating will automatically become “c”           </div> * <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Rating</th> <th>Number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>More than 90% of the above</td> </tr> <tr> <td>b</td> <td>80 - 90%</td> </tr> <tr> <td>c</td> <td>60 - 80%</td> </tr> <tr> <td>d</td> <td>less than 60%</td> </tr> </tbody> </table>			Rating	Number of boxes ticked	a	More than 90% of the above	b	80 - 90%	c	60 - 80%	d	less than 60%	<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17.  If this box is ticked: e
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**Evaluation Criteria (Final Inspection)**(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d	e							
3. Progress control, quality and performance  ii. Overall quality	Painting	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low							
		[Evaluation criteria for painting work] <ul style="list-style-type: none"> <li><input type="checkbox"/> Before starting paint work, it was made sure the work surface was completely dry</li> <li><input type="checkbox"/> Surface has been cleaned thoroughly before painting</li> <li><input type="checkbox"/> Onsite conditions (incl. weather, temperature, humidity during the work) have been recorded and filed appropriately</li> <li><input type="checkbox"/> Paint was mixed thoroughly before use to make sure there is no sediment at the bottom</li> <li><input type="checkbox"/> No dirt has got caught in the paint</li> </ul> <p>* If not enough number of test results is collected, use the above list and the following criteria instead:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Rating</th> <th>Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Work quality is generally consistent, 4 or more boxes are ticked in the above list</td> </tr> <tr> <td>b</td> <td>generally consistent, 3 boxes are ticked</td> </tr> <tr> <td>c</td> <td>generally consistent, 2 or fewer boxes are ticked</td> </tr> </tbody> </table>			Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent, 4 or more boxes are ticked in the above list	b	generally consistent, 3 boxes are ticked	c	generally consistent, 2 or fewer boxes are ticked	<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d
Rating	Quality consistency and the number of boxes ticked												
a	Work quality is generally consistent, 4 or more boxes are ticked in the above list												
b	generally consistent, 3 boxes are ticked												
c	generally consistent, 2 or fewer boxes are ticked												
	Landscaping	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low							
		[Evaluation criteria for landscaping work] <ul style="list-style-type: none"> <li><input type="checkbox"/> Soil tests (PH), soil stability surveys and permeability tests have been conducted and these results have been reflected in the actual work</li> <li><input type="checkbox"/> Some specific measures have been implemented to protect the planted seeds and help them take roots</li> <li><input type="checkbox"/> There is no damage to plants, and root-balls are intact</li> <li><input type="checkbox"/> Factors that might hinder the growth of plants have been eliminated</li> <li><input type="checkbox"/> Trimming and necessary care have been taken (incl. pruning of some branches)</li> <li><input type="checkbox"/> Fertilizer is scattered evenly; it is made sure it does not come in direct contact with the roots of plants</li> </ul> <p>* If not enough number of test results is collected, use the above list and the following criteria instead:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Rating</th> <th>Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Work quality is generally consistent, 5 or more boxes are ticked in the above list</td> </tr> <tr> <td>b</td> <td>generally consistent, 4 boxes are ticked</td> </tr> <tr> <td>c</td> <td>generally consistent, 3 or fewer boxes are ticked</td> </tr> </tbody> </table>			Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent, 5 or more boxes are ticked in the above list	b	generally consistent, 4 boxes are ticked	c	generally consistent, 3 or fewer boxes are ticked	<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d
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a	Work quality is generally consistent, 5 or more boxes are ticked in the above list												
b	generally consistent, 4 boxes are ticked												
c	generally consistent, 3 or fewer boxes are ticked												
	Lane marking	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low							
		[Evaluation criteria for lane marking] <ul style="list-style-type: none"> <li><input type="checkbox"/> Trial work was done as specified in design drawings and no problem was found from its outcome</li> <li><input type="checkbox"/> It is verified through photos or other evidence that the machinery for lane marking are maintained in good conditions</li> <li><input type="checkbox"/> It is verified through photos or other evidence that required materials are stored in good conditions</li> </ul> <p>* If not enough number of test results is collected, use the above list and the following criteria instead:</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 10%;">Rating</th> <th>Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Work quality is generally consistent, 3 or more boxes are ticked in the above list</td> </tr> <tr> <td>b</td> <td>generally consistent, 2 boxes are ticked</td> </tr> <tr> <td>c</td> <td>generally consistent, 1 or none of the boxes is ticked</td> </tr> </tbody> </table>			Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent, 3 or more boxes are ticked in the above list	b	generally consistent, 2 boxes are ticked	c	generally consistent, 1 or none of the boxes is ticked	<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d
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**Evaluation Criteria (Final Inspection)**

Tick the applicable boxes

(Evaluation by **Chief Inspector**)

Category/ Subcategory	Type of work	a	b	c	d	e							
3. Progress control, quality and performance  ii. Overall quality	Slope surface	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low							
		[Evaluation criteria for slope surface work] <Seed spraying, borrow soil spraying, double-layer spraying method> <ul style="list-style-type: none"> <li><input type="checkbox"/> The stability of existing slope surface has been surveyed and the findings have been reflected in the actual work</li> <li><input type="checkbox"/> Edges of adjacent sheet of wire are overlapping by at least 1 column of mesh</li> <li><input type="checkbox"/> Thickness of the sprayed layer is consistent</li> <li><input type="checkbox"/> If required, materials were sprayed in 2 or more layers</li> </ul> <Concrete or mortar spraying> <ul style="list-style-type: none"> <li><input type="checkbox"/> The stability of existing slope surface has been surveyed and the findings have been reflected in the actual work</li> <li><input type="checkbox"/> Edges of adjacent sheets of wire are overlapping by at least 1 column of mesh</li> <li><input type="checkbox"/> It is verified that the thickness of the sprayed layer is consistent</li> <li><input type="checkbox"/> Drain holes are functioning well</li> </ul> * If not enough number of test results is collected, use the above list and the following criteria instead: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Rating</th> <th>Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Work quality is generally consistent, 5 (3) or more boxes are ticked in the above list</td> </tr> <tr> <td>b</td> <td>generally consistent, 4 (2) boxes are ticked</td> </tr> <tr> <td>c</td> <td>generally consistent, 3 (1) or fewer boxes are ticked</td> </tr> </tbody> </table> NOTE: Refer to the values in brackets ( ) if evaluating either the first or the last half of the above criteria only		Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent, 5 (3) or more boxes are ticked in the above list	b	generally consistent, 4 (2) boxes are ticked	c	generally consistent, 3 (1) or fewer boxes are ticked	<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17  If this box is ticked: e
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a	Work quality is generally consistent, 5 (3) or more boxes are ticked in the above list												
b	generally consistent, 4 (2) boxes are ticked												
c	generally consistent, 3 (1) or fewer boxes are ticked												
Guard rail	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low								
	[Evaluation criteria for guard rail] <ul style="list-style-type: none"> <li><input type="checkbox"/> Storage is neatly organized and construction materials are stored there in an appropriate manner</li> <li><input type="checkbox"/> Installation has been completed without damaging corrosion resistance of metal hot-dipped in zinc</li> <li><input type="checkbox"/> It is thoroughly checked that all bolts are tightly in place and the record of these checks are kept</li> <li><input type="checkbox"/> Difference between the actual temperature recorded at the time of installation and the average temperature of the area on normal days is taken into account when initial stress is applied to the cables</li> <li><input type="checkbox"/> Steel posts are buried well into the ground to secure sufficient volume of soil to support the guard rails</li> </ul> * If not enough number of test results is collected, use the above list and the following criteria instead: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Rating</th> <th>Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Work quality is generally consistent, 4 or more boxes are ticked in the above list</td> </tr> <tr> <td>b</td> <td>generally consistent, 3 boxes are ticked</td> </tr> <tr> <td>c</td> <td>generally consistent, 2 or fewer boxes are ticked</td> </tr> </tbody> </table>		Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent, 4 or more boxes are ticked in the above list	b	generally consistent, 3 boxes are ticked	c	generally consistent, 2 or fewer boxes are ticked	<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17  If this box is ticked: e	
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Noise barrier	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low								
	[Evaluation criteria for noise barrier] <ul style="list-style-type: none"> <li><input type="checkbox"/> Storage is neatly organized and construction materials are stored there in an appropriate manner</li> <li><input type="checkbox"/> Installation has been completed without damaging corrosion resistance of the metal hot-dipped in zinc</li> <li><input type="checkbox"/> Special measures have been implemented for the areas where it is difficult to place steel posts into the ground</li> <li><input type="checkbox"/> Safety wire is not twisted and it has been left longer than required to secure some extra length</li> </ul> * If not enough number of test results is collected, use the above list and the following criteria instead: <table border="1" style="margin-left: 20px;"> <thead> <tr> <th>Rating</th> <th>Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Work quality is generally consistent, 3 or more boxes are ticked in the above list</td> </tr> <tr> <td>b</td> <td>generally consistent, 2 boxes are ticked</td> </tr> <tr> <td>c</td> <td>generally consistent, 1 or none of the boxes is ticked</td> </tr> </tbody> </table>		Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent, 3 or more boxes are ticked in the above list	b	generally consistent, 2 boxes are ticked	c	generally consistent, 1 or none of the boxes is ticked	<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17  If this box is ticked: e	
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**Evaluation Criteria (Final Inspection)**

(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d	e									
3. Progress control, quality and performance  ii. Overall quality	Signboard	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low									
		[Evaluation criteria for signboard] <input type="checkbox"/> Signboard has been manufactured as prescribed in the specifications <input type="checkbox"/> Storage is neatly organized and construction materials are stored there in an appropriate manner <input type="checkbox"/> Installation has been completed without damaging corrosion resistance of the metal hot-dipped in zinc <input type="checkbox"/> All bolts are tightly in place  * If not enough number of test results is collected, use the above list and the following criteria instead:			<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17  If this box is ticked: e									
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a	Work quality is generally consistent, 3 or more boxes are ticked in the above list														
b	generally consistent, 2 boxes are ticked														
c	generally consistent, 1 or none of the boxes is ticked														
	Tunnel lining	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low									
		[Evaluation criteria for lining] <input type="checkbox"/> Joint filler is spread evenly to achieve a smooth surface <input type="checkbox"/> Arch top and arch end are sealed properly against water <input type="checkbox"/> There is no damage on the surface <input type="checkbox"/> Storage is neatly organized and construction materials are stored in an appropriate manner  * If not enough number of test results is collected, use the above list and the following criteria instead:			<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17  If this box is ticked: e									
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c	generally consistent, 1 or none of the boxes is ticked														
	Minor Maintenance work (civil engineering or facility work)	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low									
		[Evaluation criteria for minor maintenance work] <input type="checkbox"/> Description: _____  <input type="checkbox"/> Description: _____  <input type="checkbox"/> Description: _____  <input type="checkbox"/> Description: _____  * If not enough number of test results is collected, use the above list and the following criteria instead:			<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17  If this box is ticked: e									
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Rating	Quality consistency and the number of boxes ticked														
a	Work quality is generally consistent, 3 or more boxes are ticked in the above list														
b	generally consistent, 2 boxes are ticked														
c	generally consistent, 1 or none of the boxes is ticked														
		Note: If the work entails several natures, describe no more than 4 evaluation items above													



**Evaluation Criteria (Final Inspection)**

(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d	e
3. Progress control, quality and performance	Seismic retrofit (1/2)	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low
ii. Overall quality		[Evaluation criteria for seismic retrofit] <Strengthening by adding concrete lining> <input type="checkbox"/> Testing of concrete mix formula was carried out, followed by trial mixing as specified by the design to meet the appropriate standard of concrete (strength, water/cement ratio, maximum aggregate size, amount of alkali) <input type="checkbox"/> The initial strength, slump, and amount of air in concrete were checked and the results were confirmed appropriate <input type="checkbox"/> It is verified that the concrete sample used for testing genuinely came from this construction site <input type="checkbox"/> When removing formworks, it was ensured that the concrete had already set and obtained the required strength <input type="checkbox"/> Specifications of rebars are clearly shown in the inspection certificate <input type="checkbox"/> Tensile strength and flexural strength of rebar were tested <input type="checkbox"/> Rebars have been properly manufactured and assembled <input type="checkbox"/> Pressure welding work has been properly done <input type="checkbox"/> Spacers are made from appropriate materials and the quality is assured <input type="checkbox"/> Spacer bars were arranged into proper locations with sufficient thickness of concrete covering  <Strengthening by adding steel plate> - Prefabrication at plant <input type="checkbox"/> The number of rebars are clearly shown in the inspection certificate <input type="checkbox"/> Proper welding work has been done <input type="checkbox"/> Before starting paint work, it was made sure the work surface was completely dry <input type="checkbox"/> As part of surface preparation process, primer coat was applied within 24 hours of blasting <input type="checkbox"/> Painting has been done in a good work environment <input type="checkbox"/> Components have been manufactured with a high dimensional accuracy that meets the Company’s internal target  -Installation <input type="checkbox"/> Execution of work, quality control and inspection have been appropriately done for onsite welding <input type="checkbox"/> Percentage of welds that fail to meet specifications is low, and the failures have been rectified properly  -Paint work <input type="checkbox"/> Before starting paint work, it was made sure the work surface was completely dry <input type="checkbox"/> Surface has been cleaned thoroughly before painting <input type="checkbox"/> Onsite conditions (incl. weather , temperature, humidity during the work) have been recorded and filed appropriately <input type="checkbox"/> Paint was mixed thoroughly before use to make sure there is no sediment at the bottom <input type="checkbox"/> No dirt has got caught in the paint		<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked: d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17  If this box is ticked: e	

**Evaluation Criteria (Final Inspection)**

(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d	e								
3. Progress control, quality and performance  ii. Overall quality	Seismic retrofit (2/2)	<input type="checkbox"/> Quality test results for completed part of work match the values in specifications and standards with a small margin of difference (as specified in the design drawings)		<input type="checkbox"/> Quality test results match the values in specifications but do not meet the criteria for “a” or “b” shown in the left.	<input type="checkbox"/> Quality test results differ from the values in specifications with a significant margin of difference	<input type="checkbox"/> Quality test results do not comply with the specifications, and the overall quality is low								
		<Strengthening by adding fiber sheet> <ul style="list-style-type: none"> <li><input type="checkbox"/> Before applying fiber sheet, it was made sure the work area was completely dry</li> <li><input type="checkbox"/> Existing concrete surface has been cleaned and blasted prior to applying fiber sheet</li> <li><input type="checkbox"/> Onsite conditions (incl. weather , temperature, humidity during the work) have been recorded and filed appropriately</li> <li><input type="checkbox"/> Paint was mixed thoroughly before use to make sure there is no sediment at the bottom</li> <li><input type="checkbox"/> No dirt has got caught in the paint</li> <li><input type="checkbox"/> There is a certificate to prove that quality and shape are consistent and verified against the design drawings</li> <li><input type="checkbox"/> The results of tests are fine, satisfying the required performance</li> <li><input type="checkbox"/> Contractor has taken an original approach to the quality improvement</li> </ul> <Excavation work for structures> <ul style="list-style-type: none"> <li><input type="checkbox"/> Soil around structures is compacted appropriately</li> <li><input type="checkbox"/> There is a sump or other drainage facility to drain water from the bottom of an excavation</li> </ul> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;">                         (1) Of all the criteria above, only the relevant ones will be examined.                          (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a modulus for calculating the percentage                          (3) Evaluation rating (     %) = Number of ticked boxes (     ) / Number of relevant criteria (     )                          (4) If only 2or fewer criteria are relevant, the rating will automatically become “c”                     </div> * If not enough number of test results is collected, use the above list and the following criteria instead: <table border="1" style="margin-top: 5px; width: 100%;"> <thead> <tr> <th>Rating</th> <th>Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Work quality is generally consistent, more than 80% of the above list is ticked</td> </tr> <tr> <td>b</td> <td>generally consistent, 60% - 80% is ticked</td> </tr> <tr> <td>c</td> <td>generally consistent, less than 60% is ticked</td> </tr> </tbody> </table>			Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent, more than 80% of the above list is ticked	b	generally consistent, 60% - 80% is ticked	c	generally consistent, less than 60% is ticked	<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked:    d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17  If this box is ticked:    e
Rating	Quality consistency and the number of boxes ticked													
a	Work quality is generally consistent, more than 80% of the above list is ticked													
b	generally consistent, 60% - 80% is ticked													
c	generally consistent, less than 60% is ticked													
	Concrete spall prevention	[Evaluation criteria for concrete spall prevention] <ul style="list-style-type: none"> <li><input type="checkbox"/> Before applying fiber sheet, it was made sure the work area was completely dry</li> <li><input type="checkbox"/> Blasting and water jetting have been thoroughly done</li> <li><input type="checkbox"/> Onsite conditions (incl. weather , temperature, humidity during the work) have been recorded and filed appropriately</li> <li><input type="checkbox"/> Paint was mixed thoroughly before use to make sure there is no sediment at the bottom</li> <li><input type="checkbox"/> No dirt has got caught in the paint</li> <li><input type="checkbox"/> There is a certificate to prove quality and shape are consistent and verified against the design drawings</li> <li><input type="checkbox"/> There is a certificate to prove the functions of preventative measures comply with the design drawings</li> <li><input type="checkbox"/> Overall performance (as per the results of onsite test) is fine and meets the requirements</li> <li><input type="checkbox"/> As-built reports include some documents that clearly show the functions/performances</li> <li><input type="checkbox"/> Contractor has taken an original approach to the quality improvement</li> </ul> <div style="border: 1px dashed black; padding: 5px; margin-top: 10px;">                         (1) Of all the criteria above, only the relevant ones will be examined.                          (2) If there is any irrelevant criteria, the number of only the relevant criteria will be used as a modulus for calculating the percentage                          (3) Evaluation rating (     %) = Number of ticked boxes (     ) / Number of relevant criteria (     )                          (4) If only 2or fewer criteria are relevant, the rating will automatically become “c”                     </div> * If not enough number of test results is collected, use the above list and the following criteria instead: <table border="1" style="margin-top: 5px; width: 100%;"> <thead> <tr> <th>Rating</th> <th>Quality consistency and the number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>Work quality is generally consistent, more than 80% of the above list is ticked</td> </tr> <tr> <td>b</td> <td>generally consistent, 60% - 80% is ticked</td> </tr> <tr> <td>c</td> <td>generally consistent, less than 60% is ticked</td> </tr> </tbody> </table>			Rating	Quality consistency and the number of boxes ticked	a	Work quality is generally consistent, more than 80% of the above list is ticked	b	generally consistent, 60% - 80% is ticked	c	generally consistent, less than 60% is ticked	<input type="checkbox"/> Supervisor has issued the Order for Improvement in writing  If this box is ticked:    d	<input type="checkbox"/> Contractor has carried out a destructive inspection as described in the Section 2 of Article 17  If this box is ticked:    e
Rating	Quality consistency and the number of boxes ticked													
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**Evaluation Criteria (Final Inspection)**

Tick the applicable boxes

(Evaluation by **Chief Inspector**)

Category/ Subcategory	Type of work	a	b	c	d									
3. Progress control, quality and performance  iii. Performance of completed work	Earthwork	It has smooth finish and looks fine		Fair	It has rough finish and looks poor									
		<input type="checkbox"/> Subgrade surface has a smooth and fine finish <input type="checkbox"/> Gradient of cut slope and embankment complies with the specifications <input type="checkbox"/> Slope surface looks smooth with a consistent vegetation and concrete sprayed surface <input type="checkbox"/> Surface, construction joints, alignment and edge of concrete structures have a smooth and fine finish <input type="checkbox"/> There is no crack or water leakage in concrete structures <input type="checkbox"/> Drain work has been completed with extra attention being paid to details <input type="checkbox"/> Proper work has been done on the joints between embankments and structures <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <thead> <tr> <th>Rating</th> <th>Number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>		Rating	Number of boxes ticked	a	6 or more	b	4 - 5	c	3	d
	Rating	Number of boxes ticked												
	a	6 or more												
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	d	0 - 2												
	Pavement	<input type="checkbox"/> Pavement surface is consistently flat <input type="checkbox"/> Installed structures (parapets, guardrail, etc.) are aligned neatly in a straight line <input type="checkbox"/> Thorough work has been done on the end treatment of structures <input type="checkbox"/> Transition from pavement to structures is smooth <input type="checkbox"/> Appropriate measures have been implemented to drain rainwater <input type="checkbox"/> It has an excellent overall appearance <input type="checkbox"/> There is no roller mark left on the pavement and the surface is smooth and flat <input type="checkbox"/> Air voids in porous asphalt pavement are not clogged and the pavement surface is flat <input type="checkbox"/> Concrete structures are in an immaculate condition (no dirt or bitumen is left)		<table border="1"> <tbody> <tr> <td>a</td> <td>7 or more</td> </tr> <tr> <td>b</td> <td>5 - 6</td> </tr> <tr> <td>c</td> <td>4</td> </tr> <tr> <td>d</td> <td>0 - 3</td> </tr> </tbody> </table>		a	7 or more	b	5 - 6	c	4	d	0 - 3	
a		7 or more												
b	5 - 6													
c	4													
d	0 - 3													
Superstructure for PC bridge	<input type="checkbox"/> Surface of concrete structures are smooth <input type="checkbox"/> Concrete structures are aligned neatly in a straight line <input type="checkbox"/> Particular attention has been given to the top end and side end points <input type="checkbox"/> Good finish has been applied to bearings <input type="checkbox"/> There is no crack that would give a severe impact <input type="checkbox"/> There is no water leaking down through the structures <input type="checkbox"/> Surface of concrete slab is flat <input type="checkbox"/> When prestress is applied to steel, its strength is strictly controlled and appropriate measures are taken as required <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>7 or more</td> </tr> <tr> <td>b</td> <td>5 - 6</td> </tr> <tr> <td>c</td> <td>4</td> </tr> <tr> <td>d</td> <td>0 - 3</td> </tr> </tbody> </table>		a	7 or more	b	5 - 6	c	4	d	0 - 3		
	a	7 or more												
b	5 - 6													
c	4													
d	0 - 3													
Steel bridge	<input type="checkbox"/> There is no damage or rust on the surface of structural components <input type="checkbox"/> Weld work is smooth and consistent <input type="checkbox"/> Paint work is smooth and consistent <input type="checkbox"/> Steel deck surface is flat <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>4 or more</td> </tr> <tr> <td>b</td> <td>3</td> </tr> <tr> <td>c</td> <td>2</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>		a	4 or more	b	3	c	2	d	0 - 1		
	a	4 or more												
b	3													
c	2													
d	0 - 1													
Architectural work	<input type="checkbox"/> Attention has been paid to small details including joints and end points <input type="checkbox"/> Necessary arrangements have been made with other related projects for smooth flow of work <input type="checkbox"/> Close attention was paid to user-friendliness and safety <input type="checkbox"/> Completed work looks fine and evenly colored <input type="checkbox"/> Ease of inspection, maintenance or patrolling has been taken into account <input type="checkbox"/> It has an excellent overall appearance (incl. attached accessories)		<table border="1"> <tbody> <tr> <td>a</td> <td>5 or more</td> </tr> <tr> <td>b</td> <td>4</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>		a	5 or more	b	4	c	3	d	0 - 2		
	a	5 or more												
b	4													
c	3													
d	0 - 2													
Electrical work	<input type="checkbox"/> Lighting equipment is installed in a straight line and not tilted <input type="checkbox"/> Lighting equipment and poles are securely installed <input type="checkbox"/> Wires and cables are laid systematically <input type="checkbox"/> Wires and cables are laid securely <input type="checkbox"/> There is no damage or rust on the surface of any component <input type="checkbox"/> Close attention was paid to other road structures <input type="checkbox"/> It has a good overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>		a	6 or more	b	4 - 5	c	3	d	0 - 2		
	a	6 or more												
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Communications	<input type="checkbox"/> Wires and cables are laid systematically <input type="checkbox"/> Wires and cables are laid are securely <input type="checkbox"/> There is no damage or rust on the surface of any component <input type="checkbox"/> Particular attention was paid to other road structures <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>4 or more</td> </tr> <tr> <td>b</td> <td>3</td> </tr> <tr> <td>c</td> <td>2</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>		a	4 or more	b	3	c	2	d	0 - 1		
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**Evaluation Criteria (Final Inspection)**(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d										
3. Progress control, quality and performance  iii. Performance of completed work		It has smooth finish and looks fine		Fair	It has rough finish and looks poor										
	Plumbing	<input type="checkbox"/> All equipment is installed in a straight line and not tilted <input type="checkbox"/> All equipment is installed securely <input type="checkbox"/> Pipes are laid systematically <input type="checkbox"/> Pipes are laid securely <input type="checkbox"/> There is no damage or rust on the surface of any component <input type="checkbox"/> Close attention has been paid to other road structures <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <thead> <tr> <th>Rating</th> <th>Number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>	Rating	Number of boxes ticked	a	6 or more	b	4 - 5	c	3	d	0 - 2	
	Rating	Number of boxes ticked													
	a	6 or more													
	b	4 - 5													
	c	3													
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	Painting	<input type="checkbox"/> All work areas are evenly painted <input type="checkbox"/> Close attention has been paid to details <input type="checkbox"/> It has never been repaired <input type="checkbox"/> Surface of work area has been cleaned and blasted thoroughly as required <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>4 or more</td> </tr> <tr> <td>b</td> <td>3</td> </tr> <tr> <td>c</td> <td>2</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>	a	4 or more	b	3	c	2	d	0 - 1			
	a	4 or more													
	b	3													
c	2														
d	0 - 1														
Landscaping	<input type="checkbox"/> Planted trees have taken root firmly in the ground <input type="checkbox"/> Seedlings are propped up as required <input type="checkbox"/> Garden paths in rest areas are paved flat and adjusted to an appropriate height to match related facilities <input type="checkbox"/> It has an excellent overall appearance <input type="checkbox"/> Each plant is put in appropriate location considering its characteristics and a balance with buildings and facilities nearby		<table border="1"> <tbody> <tr> <td>a</td> <td>4 or more</td> </tr> <tr> <td>b</td> <td>3</td> </tr> <tr> <td>c</td> <td>2</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>	a	4 or more	b	3	c	2	d	0 - 1				
a	4 or more														
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c	2														
d	0 - 1														
Lane marking	<input type="checkbox"/> All marks are evenly painted <input type="checkbox"/> They are highly visible <input type="checkbox"/> Lane marks stay firmly on the road surface <input type="checkbox"/> Pavement surface was cleaned thoroughly before applying lane marking <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>4 or more</td> </tr> <tr> <td>b</td> <td>3</td> </tr> <tr> <td>c</td> <td>2</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>	a	4 or more	b	3	c	2	d	0 - 1				
a	4 or more														
b	3														
c	2														
d	0 - 1														
Slope protection	<input type="checkbox"/> Vegetation is laid evenly and consistently <input type="checkbox"/> Transition from road/natural ground to slope top/toe is smooth <input type="checkbox"/> Work is thorough (smooth surface on concrete protection, smooth joints, etc) <input type="checkbox"/> Appropriate drainage is installed <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>4 or more</td> </tr> <tr> <td>b</td> <td>3</td> </tr> <tr> <td>c</td> <td>2</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>	a	4 or more	b	3	c	2	d	0 - 1				
a	4 or more														
b	3														
c	2														
d	0 - 1														
Guardrail	<input type="checkbox"/> Guardrails are aligned neatly in a straight line <input type="checkbox"/> Appropriate rail end treatment has been implemented <input type="checkbox"/> There is no damage or rust on the surface of any component <input type="checkbox"/> Guardrails are appropriately positioned considering the locations of existing structures <input type="checkbox"/> Close attention has been paid to details <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>5 or more</td> </tr> <tr> <td>b</td> <td>4</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>	a	5 or more	b	4	c	3	d	0 - 2				
a	5 or more														
b	4														
c	3														
d	0 - 2														
Noise barrier	<input type="checkbox"/> Noise barriers are aligned neatly in a straight line <input type="checkbox"/> Appropriate end treatment has been implemented <input type="checkbox"/> There is no damage or rust on the surface of any component <input type="checkbox"/> They are appropriately positioned considering the locations of existing structures <input type="checkbox"/> Close attention has been paid to details (eg. distinguishing the border between earthwork and environmental work) <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>5 or more</td> </tr> <tr> <td>b</td> <td>4</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>	a	5 or more	b	4	c	3	d	0 - 2				
a	5 or more														
b	4														
c	3														
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Signboard	<input type="checkbox"/> Location of installation has been carefully determined <input type="checkbox"/> Poles are aligned neatly in a straight line (direction, angle, etc.) <input type="checkbox"/> Signboards and poles are not discolored <input type="checkbox"/> Excavated soil around pole base has been put back appropriately <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>4 or more</td> </tr> <tr> <td>b</td> <td>3</td> </tr> <tr> <td>c</td> <td>2</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>	a	4 or more	b	3	c	2	d	0 - 1				
a	4 or more														
b	3														
c	2														
d	0 - 1														
Tunnel lining	<input type="checkbox"/> Tunnel linings are neatly aligned <input type="checkbox"/> Appropriate end treatment has been implemented <input type="checkbox"/> There is no damage or rust on the surface of any component <input type="checkbox"/> Close attention has been paid to details <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>4 or more</td> </tr> <tr> <td>b</td> <td>3</td> </tr> <tr> <td>c</td> <td>2</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>	a	4 or more	b	3	c	2	d	0 - 1				
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Tick the applicable boxes

(Evaluation by **Chief Inspector**)

Category/ Subcategory	Type of work	a	b	c	d										
3. Progress control, quality and performance  iii. Performance of completed work		It has smooth finish and looks fine		Fair	It has rough finish and looks poor										
	Emergency facilities in tunnel	<input type="checkbox"/> Facilities and their wiring are located systematically <input type="checkbox"/> Facilities and their wiring have been installed securely <input type="checkbox"/> There is no damage or rust left from fabrication or installation stage <input type="checkbox"/> Close attention has been paid to the existence of other road structures <input type="checkbox"/> Tunnel facilities and other related facilities function as designed <input type="checkbox"/> Ease of maintenance and inspection has been taken into account <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <thead> <tr> <th>Rating</th> <th>Number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>	Rating	Number of boxes ticked	a	6 or more	b	4 - 5	c	3	d	0 - 2	
	Rating	Number of boxes ticked													
	a	6 or more													
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	d	0 - 2													
	Power distribution facilities	<input type="checkbox"/> Facilities and their wiring have been located systematically <input type="checkbox"/> Facilities and their wiring have been installed securely <input type="checkbox"/> There is no damage or rust left from fabrication or installation stage <input type="checkbox"/> Facilities are configured appropriately considering the system of other related facilities <input type="checkbox"/> Power facilities and other related facilities function as designed <input type="checkbox"/> Ease of maintenance and inspection has been taken into account <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>	a	6 or more	b	4 - 5	c	3	d	0 - 2			
a	6 or more														
b	4 - 5														
c	3														
d	0 - 2														
Remote monitoring and controlling facilities	<input type="checkbox"/> Facilities and their wiring are located systematically <input type="checkbox"/> Facilities and their wiring have been installed securely <input type="checkbox"/> There is no damage or rust left from fabrication or installation stage <input type="checkbox"/> Facilities are configured appropriately considering the system of other related facilities <input type="checkbox"/> Remote facilities and other related facilities function as designed <input type="checkbox"/> Ease of maintenance and inspection has been taken into account <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>	a	6 or more	b	4 - 5	c	3	d	0 - 2				
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c	3														
d	0 - 2														
Traffic information facilities	<input type="checkbox"/> Facilities and their wiring are located systematically <input type="checkbox"/> Facilities and their wiring have been installed securely <input type="checkbox"/> There is no damage or rust left from fabrication or installation stage <input type="checkbox"/> Facilities are configured appropriately considering other road structures <input type="checkbox"/> Traffic information facilities and other related facilities function as designed <input type="checkbox"/> Ease of maintenance and inspection has been taken into account <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>	a	6 or more	b	4 - 5	c	3	d	0 - 2				
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Tunnel ventilation facilities	<input type="checkbox"/> Facilities and their wiring are located systematically <input type="checkbox"/> Facilities and their wiring have been installed securely <input type="checkbox"/> There is no damage or rust left from fabrication or installation stage <input type="checkbox"/> Facilities are configured appropriately considering other road structures <input type="checkbox"/> Ventilation facilities and other related facilities function as designed <input type="checkbox"/> Ease of maintenance and inspection has been taken into account <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>	a	6 or more	b	4 - 5	c	3	d	0 - 2				
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Building, construction machinery	<input type="checkbox"/> Facilities and their wiring are located systematically <input type="checkbox"/> Facilities and their wiring have been installed securely <input type="checkbox"/> There is no damage or rust left from fabrication or installation stage <input type="checkbox"/> Facilities are configured appropriately considering other road structures <input type="checkbox"/> Machinery and related facilities function as designed <input type="checkbox"/> Ease of maintenance and inspection has been taken into account <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>3</td> </tr> <tr> <td>d</td> <td>0 - 2</td> </tr> </tbody> </table>	a	6 or more	b	4 - 5	c	3	d	0 - 2				
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Minor maintenance (civil engineering or facility work)	<input type="checkbox"/> Close attention has been paid to details (incl. small structures) <input type="checkbox"/> Work is detailed and thorough <input type="checkbox"/> Transition between facilities and existing structures is smooth <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>3 or more</td> </tr> <tr> <td>b</td> <td>2</td> </tr> <tr> <td>c</td> <td>1</td> </tr> <tr> <td>d</td> <td>0</td> </tr> </tbody> </table>	a	3 or more	b	2	c	1	d	0				
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**Evaluation Criteria (Final Inspection)**

(Evaluation by **Chief Inspector**)

Tick the applicable boxes

Category/ Subcategory	Type of work	a	b	c	d										
3. Progress control, quality and performance  iii. Performance of completed work		It has smooth finish and looks fine		Fair	It has rough finish and looks poor										
	Seismic retrofit <Strengthening by concrete lining>	<input type="checkbox"/> Surface of concrete structure is smooth <input type="checkbox"/> Concrete structures are aligned neatly in straight lines <input type="checkbox"/> Particular care has been given to the work on construction joints <input type="checkbox"/> There is no crack in concrete structures <input type="checkbox"/> There is no water leaking off through concrete structures <input type="checkbox"/> Particular attention has been paid to details <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <thead> <tr> <th>Rating</th> <th>Number of boxes ticked</th> </tr> </thead> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>2 - 3</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>	Rating	Number of boxes ticked	a	6 or more	b	4 - 5	c	2 - 3	d	0 - 1	
	Rating	Number of boxes ticked													
	a	6 or more													
	b	4 - 5													
c	2 - 3														
d	0 - 1														
Seismic retrofit <Strengthening by steel plate>	<input type="checkbox"/> There is no damage or rust on the surface <input type="checkbox"/> Weld work is uniform and consistent <input type="checkbox"/> Paint work is uniform and consistent <input type="checkbox"/> Work is thorough in every detail <input type="checkbox"/> It has never been repaired <input type="checkbox"/> Surface of work area has been cleaned and blasted thoroughly as required <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>6 or more</td> </tr> <tr> <td>b</td> <td>4 - 5</td> </tr> <tr> <td>c</td> <td>2 - 3</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>	a	6 or more	b	4 - 5	c	2 - 3	d	0 - 1				
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Seismic retrofit <strengthening by fiber sheet>	<input type="checkbox"/> Paint work is uniform and consistent <input type="checkbox"/> Work is thorough in every detail <input type="checkbox"/> It has never been repaired <input type="checkbox"/> Surface of work area has been cleaned and blasted thoroughly as required <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>4 or more</td> </tr> <tr> <td>b</td> <td>3</td> </tr> <tr> <td>c</td> <td>2</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>	a	4 or more	b	3	c	2	d	0 - 1				
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Concrete spall prevention	<input type="checkbox"/> Paint work is uniform and consistent <input type="checkbox"/> Work is thorough in every detail <input type="checkbox"/> It has never been repaired <input type="checkbox"/> Surface of work area has been cleaned and blasted thoroughly as required <input type="checkbox"/> It has an excellent overall appearance		<table border="1"> <tbody> <tr> <td>a</td> <td>4 or more</td> </tr> <tr> <td>b</td> <td>3</td> </tr> <tr> <td>c</td> <td>2</td> </tr> <tr> <td>d</td> <td>0 - 1</td> </tr> </tbody> </table>	a	4 or more	b	3	c	2	d	0 - 1				
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**APPENDIX 7-2-5**  
**GUIDING PRINCIPLE**  
**FOR PUBLIC WORKS**



# Guiding Principles concerning the Measures to Promote Proper Tendering and Contracting for Public Works

23 May, 2006

Cabinet Order

## Chapter 1 Concept for Guideline

As most public works are conducted for the development of social infrastructure that forms the backbone of the nation's economic and socio-cultural activities, they shall not, in any way, raise suspicion among the public. A proper management of the work and an efficient development of a high level of social infrastructure are required. On the contrary, there have often been many cases of misconducts in the procedures of appointing contractors or implementation of construction works; consequently, the distrust has been raised among the general public for public works conducted in Japan, while the number of improper or ineligible contractors does not decrease, which is hindering the sound development of contractors for public works.

As projects of public works owned by the national government, municipal governments and government agencies are contracted to construction companies, it is required to improve the mindset of construction companies to prevent any misconduct in public works. Further, the head of every ministry and agency should work under consistent rules without any discrepancy with each other to eliminate unfit or disqualified construction companies. Against such backdrop, this Guideline was established to improve the tendering and contracting for public works as stipulated in Article 15tendering and contracting procedures , Paragraph 1 of the Act for Promoting Proper Tendering and Contracting for Public Works (hereinafter referred to as "the Act").

The heads of ministries and agencies are, as their responsibilities, required to ensure the quality of public works to secure the functions of social infrastructures; execute public works at an appropriate price through an efficient use of limited financial resources; and undergo appropriate procedures, for example in appointing a contractor. In order to exercise such responsibilities and ensure optimum procurement with good price and quality through fair, transparent and competitive methods, it is crucial for the heads of ministries and agencies to cooperate on improving contracting and tendering procedures.

The Items of Article 3 of the Act listed below clarify the basic rules to follow in order to improve tendering and contracting procedures.

## **Chapter 2 Measures to improve tendering and contracting procedures**

### **1. Securing of transparency in contracts and the process of tendering and contracting**

(1) Information disclosure regarding contracts and the process of tendering and contracting

To prevent misconduct in tendering or contracting for public works and to assure to the public that all processes are conducted in an appropriate manner, it is important to always secure transparency in tendering and contracting. For this purpose, all tender- or contract-related information shall be disclosed. Further, items stipulated in Chapter 2 of this Act or the items that fall under any of the conditions listed below in this Paragraph shall be disclosed to the public. This shall be done by the heads of relevant ministries or agencies in a method that complies with Chapter 2 of this Act. The disclosure of Item 2 of Article 4 and Item 2 of Article 7 of this Act shall be done promptly without delay after the contract signing.

- (i) Evaluation score on the bidders' business condition and technical capability, their performance, the evaluation given for other projects, order of scores of all bidders, and (if grades are given to all participating bidders,) the grade criteria to participate in a tender
- (ii) Projected bid prices and their breakdown
- (iii) Minimum bid price (if applicable) and a range of low bid prices that will require investigation
- (iv) Instructions for conducting investigation on low bidders and outline of investigation results
- (v) Trade names of bidders in a designated competitive bidding, trade names of unsuccessful bidders and reasons for not awarding them
- (vi) Responsibilities, members and operations of a third-party organization that offers advice on contracting and tendering; and the outline of matters this organization has given advice on
- (vii) How and to whom complaints should be lodged, how the lodged complaints should be handled, names of the persons who made complaints, description of their complaints, and actions taken for them

- (viii) Trade names of disqualified contractors; terms and reasons for their disqualification (for not allowing the contractors to submit their bid in open competitive tenders )
- (ix) Regulations regarding project managers and inspections
- (x) Guideline for conducting technical inspections
- (xi) Guideline for evaluating performance of contractors
- (xii) Guideline for actions to be taken for allegations of bid-rigging
- (xiii) Guideline for clarifying organizational structure

Note on the disclosure of bid price:

For government-owned projects, projected bid prices are not disclosed prior to placing bids, as prior information about bid prices might restrict a fair competition and it could be easily misused for bid-rigging. Heads of each ministry and agency may request the disclosure of projected bid prices in advance only when there is no risk that final bid prices will be predicted. Municipal governments, however, are not required by law to follow this. They may disclose the predicted bid prices in advance after thoroughly considering possible risks, such as those mentioned above, provided that special measures will be taken appropriately to prevent undesirable consequences.

The same shall apply for the disclosure of the minimum bid price. The disclosure of the minimum bid price might impel many bidders to bid the minimum price only. In such case, a winning bidder shall be decided by drawing lots, which might lead to a possibility of an improper contractor being awarded. Special measures shall be taken to prevent such possibility.

#### **4. Securing of proper implementation of public works by the awarded contractor**

(1) Methods of evaluating the work of contractor for proper tendering and contracting in the future

The heads of each ministry and agency shall make sure proper execution of the contract and verify the completion of the project. To maintain appropriate decision-making in awarding a contractor for public works, they are also required to conduct technical inspection and performance evaluation on contractor's work.

Technical inspection shall be conducted at every important stage of construction work and the inspection result shall be incorporated in the performance evaluation of the public work. Performance evaluation of public work shall duly take notice of shoddy or poor work done by the contractor. On the other hand, when the contractor demonstrated a high level of technical capability to carry out excellent work, it shall be given high scores in the performance evaluation.

To prevent the performance evaluation from varying significantly from one evaluator to another, the heads of ministries and agencies shall establish and publish a guideline for performance evaluation, which all evaluators shall always adhere to. The results of performance evaluation shall be notified to the contractor who undertook the work, but they shall also be publicly announced. Further, all performance evaluation shall be standardized so that all project owners can share the information about contractors' evaluation results.

As with the procedures of tendering and contracting, the appropriate procedures of handling complaints shall be established. When a complaint is made, the heads of ministries and agencies shall give appropriate explanation to the person who made the complaint. If the complaint is unresolved, they can lodge the complaint further to a third-party organization.

Whether or not performance evaluation is to be conducted on a particular project depends on its necessity and the amount of extra administrative procedures required, but it shall usually be conducted wherever possible.



**APPENDIX 7-2-6**  
**CONSTRUCTION BUSINESS ACT**



## **CHAPTER 4-2 (Business Evaluation for Construction Companies)**

### **Article 27-23: Business Evaluation**

(1) In accordance with an Ordinance of the Ministry of Land, Infrastructure, Transport and Tourism (MLIT), a construction company that plans to undertake public construction works of facilities and structures based on a service contract with the project owner shall be objectively evaluated on their business conditions.

(2) The evaluation stated in the previous paragraph (hereinafter referred to as “**business evaluation**”) involves a quantitative evaluation of the following:

- (i) Business condition
- (ii) Management scale, technical capability, other relevant factors to be evaluated objectively

(3) Any other criteria not stipulated in the preceding paragraph shall be finalized by the MLIT Minister after consulting the Central Council on Construction Contracting Business.

### **Article 27-24: Business Condition Analysis**

(1) The analysis of business condition as stipulated in Article 27-23, Paragraph (2), Item (i) (hereinafter referred to as “business condition analysis”) shall be conducted by an agency registered with the MLIT (hereinafter referred to as “registered analyst”) as provided in Article 27-32, Paragraph (1).

(2) Construction companies shall submit applications for business condition analysis to a registered analyst with all necessary information filled into the application forms as specified by a MLIT Ordinance.

(3) The applications from the construction companies shall be accompanied by the supporting documents required to verify the information for business condition analysis as specified by a MLIT Ordinance.

(4) Registered analysts may, if required for the purpose of business condition analysis, request a submission of further information from the construction companies upon the receipt of their applications.



**Article 27-25: Notification of Results**

Registered analysts shall report the results of the analysis back to the construction companies without delay.

**Article 27-26: Management Scale Evaluation**

(1) The evaluation of management scale, technical capability and other factors stipulated in Article 27-23, Paragraph (2), Item (ii) (hereinafter referred to as “management scale evaluation” shall be conducted by the MLIT Minister or prefectural governors.

(2) The applications for management scale evaluation shall be submitted to the authority that approved the applicant’s construction business license, namely either the MLIT Minister or prefectural governments, with all necessary information filled into the application forms as specified by MLIT.

(3) The applications shall be accompanied by the supporting documents required to verify the information for management scale evaluation as specified by MLIT.

(4) The MLIT Minister or prefectural governors may, if required for the purpose of management scale evaluation, request the submission of further information from the construction companies upon the receipt of their applications.

**Article 27-27: Notification of Results**

The MLIT Minister or prefectural governors shall report the results of the management scale evaluation back to the construction companies without delay.

**Article 27-28: Claim for Review**

The construction companies may, if they have an objection to the results of the management scale evaluation, file a claim for review with the MLIT Minister or prefectural governors who conducted the evaluation.

**Article 27-29: Notification of Comprehensive Evaluation**

(1) The MLIT Minister and prefectural governors shall, if requested from the construction companies, notify them of the comprehensive evaluation results without delay as specified by a MLIT Ordinance. The results of comprehensive evaluation refer to the numerical value that represents the results of comprehensive evaluation of

relevant objective factors, which is calculated in accordance with a MLIT Ordinance using the numerical data related to the results of business evaluation and management scale evaluation.

(2) A request for comprehensive evaluation stipulated in the preceding paragraph shall be made by submitting the numerical data related to the results of business evaluation determined by the analyst to the authority that approved the applicant's construction business license, namely either the MLIT Minister or prefectural governors as provided in Article 27-25.

(3) The MLIT Minister or prefectural governors shall, if requested from a project owner of public works defined in Article 27-23, Paragraph (1), disclose the construction company's comprehensive evaluation results (or the numerical values related to the results of business condition analysis or management scale evaluation) to the project owner without delay as specified by a MLIT Ordinance.

**Article 27-30: Application Fee**

Companies that make an application for management scale evaluation as stipulated in Article 27-26, Paragraph (2) or a request for comprehensive evaluation as stipulated in Article 27-29, Paragraph (1) shall pay the amount of fee stipulated by a Cabinet Order to the government by taking into consideration of the actual costs incurred.

**Article 27-31: Registration**

(1) The registration of analysts stipulated in Article 27-24, Paragraph (1) shall be implemented following an application from the agent who wishes to conduct business condition analysis.

(2) MLIT shall register the agent who submitted an application (hereinafter in this Paragraph referred to as "Applicant") when it is confirmed that the Applicant has a computer with a computer program required for carrying out business condition analysis and falls under none of the following conditions as an organization governed by a construction company required to undergo business evaluation (hereinafter in this Paragraph referred to as "Construction Company") as stipulated in Article 27-23, Paragraph (1):

- (i) The Construction Company is a parent company of the Applicant
- (ii) The positions of more than 50% of the Applicant's corporate officers are held by

the Construction Company's officers or staff members (including persons who used to serve the Construction Company in the past two years)

- (iii) The Applicant serves the Construction Company as a corporate officer or staff member (including a person who used to serve the Construction Company in the past two years)

(3) The following information concerning each analyst shall be recorded in the registry:

- (i) Registration number and date of registration
- (ii) Name and address of the analyst, and in case of a corporation, the name of the person who represents the company
- (iii) Address of the office where the analyst performs business condition analysis

#### **Article 27-32: Registered Analyst**

(1) Agents that fall under any of the following may not be eligible to become registered analysts as stipulated in Article 27-24, Paragraph (1):

- (i) An agent who has been sentenced to a fine or a severer punishment for violating the provisions of this Act or an order pursuant to this Act, if a period of two years has not yet elapsed since the sentence was served or the stay of service was granted.
- (ii) An agent whose registration as an analyst has been cancelled as stipulated in Article 27-32, Paragraph (10), if a period of two years has not yet elapsed since the cancellation.
- (iii) An agent is a corporation and any of its corporate officers falls under either of the preceding two items.

(2) Unless the registration stipulated in Article 27-24, Paragraph (1) is renewed at an interval of not less than three years as specified by the applicable Cabinet Order, it shall become invalid.

(3) Registered analysts shall perform business condition analysis fairly by a method specified by a MLIT Ordinance.

(4) When registered analysts intend to change any of the matters set forth in Article 27-31, Paragraph (3), Item (ii) or (iii), they shall notify the MLIT of the change two weeks prior to the planned date of change.

(5.1) Registered analysts shall determine the rules for conducting business condition analysis (hereinafter referred to as “Rules for Business Condition Analysis”) and notify the MLIT Minister of the rules before their implementation. The same shall apply when they intend to make any change to the rules.

(5.2) the Rules for Business Condition Analysis shall specify the methods of conducting business condition analysis, the service fees and other particulars prescribed by a MLIT Ordinance.

(6) When registered analysts intend to suspend or terminate the whole or a part of the services of business condition analysis, they shall notify the MLIT of their intension in advance.

(7.1) Registered analysts shall create an inventory of assets; a balance sheet; a profit and loss statement or settlement account; and business report (hereinafter referred to in Article 27-32, Paragraph (7.2) as “Financial Statements”) within three months from the end of each financial year and store them in the office for 5 years. These documents may be in digital format (electronic format, magnetic format, or any other format that is only recognizable by computers).

(7.2) Construction Companies stipulated in Article 27-31, Paragraph (2) and any other interested parties may request the following from the registered analysts at any time during the analysts’ business hours; provided, however, that they pay the amount of fees set by the registered analysts.

- (i) browsing or photocopying of Financial Statements where they are prepared as written documents
- (ii) provision of certified original or extract copy of Financial Statements stipulated in the preceding Item
- (iii) browsing or printing of the digital data displayed in a method stipulated in a MLIT Ordinance where Financial Statements are recorded in digital format
- (iv) provision of the digital data in any other method stipulated in a MLIT Ordinance

(8) When the MLIT Minister finds a registered analyst no longer complies with the provisions of Article 27-31, Paragraph (2), the Minister may order said registered

analyst to take necessary measures to comply with all such provisions.

(9) When the MLIT Minister finds a registered analyst is in violation of the provisions of Article 27-32, Paragraph (3) or Article 27-33, the Minister may order said registered analyst to take necessary measures to improve the procedures and methods of business condition analysis.

(10) The MLIT Minister may cancel the registration of analysts who fall under any of the following Items or order them to suspend the whole or a part of their analysis service for a certain period of time:

- (i) an analyst who falls under Item (i) of Article 27-32, Paragraph (1)
- (ii) an analyst who has violated the provisions from Paragraph (4) to (6), and Paragraph (7.1) or (7.2)
- (iii) an analyst who has rejected a request made under the items of Article 27-32, Paragraph (7.2)
- (iv) an analyst who did not follow the order made under the provisions of Article 27-32, Paragraph (8)
- (v) an analyst who has registered by MLIT through wrongful means

(11) Registered analysts shall keep books and record the matters concerning business condition analysis as stipulated in a MLIT Ordinance.

(12) MLIT Minister may, to the extent necessary for the enforcement of this Act, order registered analysts to make a report on their services or financial status.

(13.1) MLIT Minister may, to the extent necessary for the enforcement of this Act, order its ministerial staff to enter the registered analysts' office to inspect their business conditions, books, documents or other objects.

(13.2) When the ministerial staff makes an onsite inspection at the registered analysts' office, they shall carry their identification and produce it to the persons concerned.

(13.3) The authority to conduct an inspection prescribed in the provisions of Article 27-32, Paragraph (13.1) shall not be construed as being granted for the purpose of criminal investigation.

(14) In any of the following cases, the MLIT Minister shall publish notice in the official gazettes.

- (i) When the MLIT registered a new analyst as stipulated in Article 27-24, Paragraph (1)
- (ii) When a registered analyst notified the MLIT of some changes made as stipulated in Article 27-32, Paragraph (4)
- (iii) When a registered analyst notified the MLIT of the suspension or termination of the whole or a part of its services of business condition analysis as stipulated in Article 27-32, Paragraph (6)
- (iv) When the MLIT cancelled the registration of an analyst or ordered an analyst to suspend the whole or a part of its services of business condition analysis as stipulated in Article 27-32, Paragraph (10)
- (v) When the MLIT decided to directly conduct the whole or a part of the services of business condition analysis, or to stop conducting the whole or a part of business condition analysis as stipulated by 27-35.

**Article 27-33: Responsibilities of registered analysts**

Registered analysts shall, when requested, conduct business condition analysis without delay unless there are justifiable grounds.

**Article 27-34: Confidentiality**

Employees and executives of registered analysts shall not disclose any confidential information acquired during the course of the business condition analysis to any other party.

**Article 27-35: Business condition analysis by MLIT or prefectural governors**

(1) The MLIT Minister or prefectural governors may directly conduct the whole or a part of the services of business condition analysis in any of the following cases:

- (i) When there is no registered analyst available to undertake business condition analysis as stipulated in Article 27-24, Paragraph (1)
- (ii) When the registered analysts suspended or terminated the whole or a part of their services of business condition analysis as stipulated in Article 27-32, Paragraph (6)
- (iii) When the MLIT cancelled the registration of analysts or ordered them to suspend their business analysis services as stipulated in Article 27-32, Paragraph (10)

- (iv) When it has become difficult for the registered analysts to conduct the whole or a part of the services of business condition analysis due to a natural disaster or other reasons
- (v) Other cases where the MLIT Minister finds it necessary

(2) When prefectural governors are directly conducting business condition analysis or when the reason is no longer valid for prefectural governors to directly conduct business condition analysis, the MLIT Minister shall immediately notify the prefectural governors of this arrangement.

(3) The transfer of the services of business condition analysis from the analysts to the MLIT or prefectural governors when the MLIT Minister or prefectural governors directly conduct the whole or a part of business condition analysis as stipulated by the first Paragraph of this Article shall be specified by a MLIIT Ordinance.

(4) The provisions concerning application fees stipulated in Article 27-30 shall apply to companies that wish to undergo business condition analysis conducted by the MLIT Minister.

(5) When prefectural governors are directly conducting the whole or a part of business condition analysis or when they stop doing so as stipulated in Paragraph (1) of this Article, it shall be notified in the prefectural governments' official gazettes.

**Article 27-36: Delegation to a MLIT Ordinance**

The provisions in this Chapter and other particulars regarding business condition analysis or claim for review shall be stipulated by a MLIT Ordinance.

**CHAPTER 4-3 (Construction Industry Association)**

**Article 27-37: Notice**

Corporations or organizations that conduct business activities concerning an appropriate execution of construction work and related studies and research (hereinafter referred to as "construction industry association") shall notify the MLIT Minister or prefectural governors of the information prescribed in an MLIT Ordinance.

**Article 27-38: Report**

The MLIT Minister or prefectural governors may request the construction industry associations prescribed in the preceding Article to report on necessary details for the aim of facilitating a steady growth of the industry and secure an appropriate execution of construction work for the associations.





**APPENDIX 7-2-7**  
**ACTION PLAN**



# **Action Plan for Improvement of Tendering and Contracting Procedures in Public Works**

18 January, 1994

Cabinet Approval

Currently, it is becoming increasingly important to secure the transparency, objectivity and competitiveness in tendering and contracting procedures for public works, which would match international practices. It is even more so in today's globalized international market environment as there is an increasing interest from overseas contractors to enter the Japanese market for construction projects. Against such backdrop, the government has drawn up the Action Plan for Improvement of Tendering and Contracting Procedures in Public Works (hereinafter referred to as "this Action Plan").

This Action Plan is designed to secure high quality in public works and to enhance the transparency, objectivity and competitiveness in tendering and contracting procedures for public works in Japan. In addition, it aims to apply comprehensive rules to both domestic and overseas contractors and to improve the current system into something that would have international appeal.

The government plans to promote the measures specified in this Action Plan.

## General Information and Purpose

In light of the current situations involving tendering and project implementation for public works in Japan, how to regain the public's trust toward public works is now a pressing issue. Amid the globalization of the construction market, there is an increasing interest from overseas contractors to enter the Japanese market for construction projects. Japan should respond to such needs and improve the current tendering and contracting procedure to something more transparent and objective, which incorporate the consideration for overseas contractors and the global market environment. As part of this effort, the government announced the Framework of Action Plan for Improvement of Tendering and Contracting Procedures in Public Works on Oct 26, 1993, and established this Action Plan in early 2009.

Meanwhile, the Central Council on Construction Contracting Business has been working on a reform of the tendering and contracting system, and in December 21, 2008, submitted a proposal on the reform of tendering and contracting system for public works.

As exemplified by the GATT Agreement on Government Procurement, major countries in the world has been working together, particularly since 1996, towards the establishment of new international rules for the procurement of services such as construction, designing and consulting services. Each project owner should now takes such international move into account and work to improve the tendering and contracting procedures conventionally practiced for their own projects. The entry of overseas contractors should be treated consistently in a same manner. Therefore the government has drawn up this Action Plan for all project owners throughout Japan to refer to as a guideline.

This Action Plan is designed to secure high quality in public works and to enhance the transparency, objectivity and competitiveness in tendering and contracting procedures for public works in Japan. Its aim is to apply comprehensive rules to both domestic and overseas contractors and to improve the current system into something that would have international appeal. To this end, Japan is committed to adopting more transparent, objective and competitive procurement system, evaluating overseas contractors appropriately, developing a system of procedures to deal with complaints, and implementing specific measures to prevent tender-rigging and other misconducts. This Action Plan should be executed to the extent that would not contradict with the framework of GATT or any other agreement Japan has signed.

#### Schedule of Implementation

The national government or government agencies shall first implement specific measures stipulated in the Action Plan to the public works for which the budget is earmarked in 1994, then establish a transparent, objective and competitive system of procurement by the end of the same year. The government or agencies shall immediately start preparing for this process.

#### Procurement Process

##### (i) General information

The basic procurement process for Open Tendering is as follows:

1. Publishing of tender notice
2. Submission of pre-qualification document (from prospective tenderers)
3. Notification of the result of pre-qualification
4. Submission of tenders
5. Awarding of contract
6. Signing of contract

The process from the publishing of notice to the closing of tenders shall take no less than 40 days.

However in cases that would otherwise violate Paragraph 3 of Article 11 in the GATT Agreement on Government Procurement, this process may be shortened.

For projects that involve particularly difficult work, tenderers are requested to submit the Method Statement before submitting a tender for a further assessment of technical capabilities (Comprehensive Evaluation Method).

Every financial year, after the budget passes the Diet, project owners are required to publicly announce the plan of prospective projects for the year.

### Public Notice

1. Project owners should publish a tender notice in an Official Gazette that announces the start of procurement process. However, in cases where there seems to be no prospective tenderer after publishing a tender notice in an Official Gazette, the notice may also be published in daily industry journals. Tender notices shall contain the following information:

- Outline of the public work (name of the project, place of execution or delivery of service, nature of work, planned duration of the work)
- Requirements applicable to tenderers as pre-qualification criteria (result of business evaluation, similar projects completed in the past, availability of professionally qualified or experienced engineers, criteria for disqualification, and other relevant information regarding tenderers' requirements; in case of comprehensive evaluation method, Method Statement shall be provided)
- When and how to get tender documents
- Where to submit prequalification documents and its due date
- Information about major machinery need to be procured by the prime contractor or a subcontractor
- Where and how to lodge a tender and its due date
- Contact person for further inquiry

Note: Requirements should be stated objectively and specifically, so that those who wish to participate in a tender can judge themselves if they meet the requirements.

2. The following information should be advertised in English as well.

- Project name
- Application form and due date for participating in a tender
- Contact person for further inquiry

### Distribution of Tender Documents

1. Prospective tenderers can obtain the tender documents, which contain all necessary information such as a photocopy of the tender notice, contract draft, instructions for tenderers, drawings, technical specifications, and other relevant documents.

2. Tender document should contain the following:

- Address of the organization to lodge a tender to
- Contact person for further inquiry
- Terminology to be used in tender and related documents
- Opening and closing date and time of tenders
- Name of the person to be present at tender opening
- Sufficient explanation about the tendered work and the requirements
- Payment criteria
- Financial or technical requirement; information or documents on financial guarantee and financial status
- Other requirement

### Pre-qualification

Transparent and objective procedures shall be taken before awarding a contractor in order to secure a quality and efficiency in the procurement of public works.

1. Registration of contractors pre-qualified for an open tender

Once construction companies submit a n application for tender, the project owner shall register them in the registration record for up to 2 years.

register the contractors upon the receipt of their application who intend to participate in an open tender for public works and are pre-qualified to do so. The registration is valid for 2 years. Those who have not been pre-qualified or who fall under one or more of the criteria for disqualification stated in the tender notice are not eligible to participate in tenders.

2. Managerial factor evaluation

Project owners shall use the results of managerial factor evaluation conducted in line with the Construction Business Act, which ensures that all tenderers for public works are evaluated objectively in terms of their business conditions.

The score for each tenderer shall be calculated from the results of business evaluation based on such criteria as the amount of completed work, amount of capital, number of employees, financial status, number of engineers and years in business. The minimum score required to participate in the tender shall be stated in the Tender Notice.

The method of calculating the score shall be disclosed. The result of business evaluation shall be notified to each tenderer.

### 3. Technical criteria

In an open tender, the project owner shall establish the eligibility criteria to determine whether prospective tenders are capable of executing the contract for that particular project. The criteria specify what will be required of a successful tender; for example the availability of engineers with the relevant professional qualifications and experiences. They shall be stated clearly in the tender notice so that prospective tenderers will be able to judge themselves whether they are capable of executing the work required for that project.

In the Comprehensive Evaluation Method, tenderers shall submit the method statement along with other documents required for an open tender in order to prove they are capable of executing highly technical work.

#### Confirmation of Eligibility

1. The eligibility of all tenderers will be assessed after the due date for tender submission.
2. For the Comprehensive Evaluation Method, the project owner may hold a briefing or interview session for prospective tenderers. In this case, the dates and venues of such sessions shall be clearly stated in the Tender Notice.
3. After assessing the eligibility of tenderers, the project owner shall notify them of the result of assessment in a written notice and confirm their eligibility no later than 7 days (or 14 days for the Comprehensive Evaluation Method) from the due date for tender submission.
4. For the tenderers who were judged ineligible to participate in the tender, the project owner shall notify them of the reason for their ineligibility. The project owner shall also ensure that the disqualified tenderers are aware of their right to request further explanation within 7 days



excluding public holidays when administrative agencies are closed.

#### Announcement of Results

The project owner shall publish the results of tender without delay, the general information about the tender and the name of the successful contractor.

#### Contract

The contract shall be awarded to the tenderer submitting the lowest price that is below a predetermined price. For an exceptionally low tender price, further investigation is required to verify whether the price is appropriate.

#### Complaint

If anyone concerned with the procurement is dissatisfied during the course of the processes stated above, the person is allowed to lodge a complaint.

**APPENDIX 7-2-8**  
**NOTICE REGARDING GUIDELINE**



March 30, 2001  
Vice Minister  
Ministry of Land, Infrastructure, Transport and Tourism

To Director General of Regional Development Bureau

**Notice Regarding Guideline for Performance Evaluation of Contracted Work**

Attached is the Guideline for Performance Evaluation of Contracted Work, which is now in effect. Every affected member of the Bureau is expected to ensure thorough implementation of this guideline.

With the enactment of this guideline, the preceding notice titled the Notice Regarding the Amendment to Guideline for Work Performance Evaluation for Regional Development Bureau's Projects (MLIT Notice No. 15 issued on 30 March 1967, last amended on 6 May 1998) has become no longer valid.

## **Guideline for Performance Evaluation of Contracted Work**

### **Article 1: Purpose**

This Guideline specifies the provisions regarding performance evaluation (hereinafter referred to as **Evaluation**) for projects owned by Regional Development Bureau. It aims to ensure fair and accurate evaluation, and to facilitate an appropriate appointment of contractors and an effective training for contractors

### **Article 2: Affected Projects**

Evaluation shall be conducted for projects with the contract price of 5 million yen or over. It is, however, not required to evaluate the projects for which Director General of Regional Development Bureau finds unnecessary to do so, for example, for projects of the installation of electricity lines, gas pipes, water pipes or telephone lines.

### **Article 3: Content of Evaluation**

Evaluation shall be conducted in terms of the following:

- (i) Performance: status of construction, quality of finished work, etc.
- (ii) Technical Level: technical difficulties such as requirements for particular types of structures, technical characteristics, etc.

### **Article 4: Evaluator**

(1) Evaluation stated in Article 3 shall be conducted by the following persons (hereinafter referred to as **Evaluator**):

(i) Technical Inspector and Technical Evaluator as specified in Guideline for Technical Inspection for Regional Development Bureau's Projects (MLIT No. 282 issued on 31 March 2006)

(ii) Technical difficulty of construction work shall be evaluated by Technical Evaluator.

(2) The details of the evaluators who undertake the items prescribed in Article 3 shall be specified separately.

### **Article 5: Method of Evaluation**

(1) Each evaluator shall independently evaluate the supervisor, the inspection and other relevant factors for each construction works accurately and fairly.

(2) The results of evaluation shall be recorded in a performance evaluation chart and the technical level evaluation chart (hereinafter referred to as **Evaluation Charts**).

### **Article 6: Timing of Evaluation**

(1) Technical Inspector shall conduct evaluation upon the implementation of technical inspection, while Technical Evaluator shall conduct evaluation upon the completion of construction.

(2) Technical level of work shall be evaluated upon the completion of the construction.

### **Article 7: Submission of Evaluation Chart**

(1) For contracts signed with the officers solely in charge of the act of disbursement or contracting, or the officers acting on their behalf (hereinafter referred to as **Chief Officers**), the evaluator shall submit Evaluation Charts to Director General of Regional Development Bureau. For contracts signed with the officers partly in charge of the act of disbursement or contracting, or the officers acting on their behalf (hereinafter referred to as **General Officers**), Evaluation Charts shall be submitted to

Director of the local office undertaking the contracted project.

(2) Director of local office shall then report Evaluation Charts to Director General of Regional Development Bureau.

**Article 8: Notice of Evaluation Results**

Director General or Director, as the case may be, shall, upon the receipt of Evaluation Charts, promptly notify the evaluation results to the contractor who undertook the evaluated work.

**Article 9: Revisions of Evaluation**

(1) If it is required to revise the evaluation prescribed in Article 8, Director General or Director shall add relevant revisions to the original evaluation.

(2) In cases where any revision was made as described in the preceding paragraph, Director General or Director shall promptly inform the contractor of the revision.

**Article 10: Request for Explanation**

(1) The contractor who has been notified of the evaluation or its revision may request its explanation in writing from Director General or Director within 14 days (holidays included) from the receipt of the notification.

(2) If explanation was requested as prescribed in this article, Director General or Director shall provide the explanation to the contractor in writing as prescribed in the previous paragraph.

**Article 11: Request for Further Explanation**

(1) The contractor who has been provided with the explanation prescribed in the previous article may request further explanation of the evaluation in writing from Director General within 14 days (holidays included) from the receipt of the initial explanation.

(2) If further explanation was requested as prescribed in this article, Director General shall provide further explanation to the contractor in writing as prescribed in the previous paragraph after consulting the Performance Evaluation Committee.

**Supplementary Provision:**

This Guideline shall take effect on 1 April, 2004.



**APPENDIX 7-2-9**  
**HONG KONG EXAMPLE**





政府總部  
環境運輸及工務局  
香港花園道美利大廈



Environment, Transport  
and Works Bureau  
Government Secretariat  
Murray Building, Garden Road,  
Hong Kong

Ref. : ETWB(PS) 105/11/2  
Group : 2

12 March 2007

**Environment, Transport and Works Bureau**  
**Technical Circular (Works) No. 3/2007**  
**Contractors' Performance Index System**

**Scope**

This Circular promulgates the updated Contractors' Performance Index System.

**Effective Date**

2. This Circular shall take immediate effect.

**Effect on Existing Circular**

3. This Circular replaces Works Bureau Technical Circular No. 24/2002 which is hereby cancelled.
4. This Circular should be read in conjunction with Environment, Transport and Works Bureau Technical Circular (Works) Nos. 7/2004 on "Examination of Tenders and Submission of Tender Reports" and 8/2004 on "Tender Evaluation of Works Contracts".

## **Background**

5. The Contractors' Performance Index System was established in 2000 to provide a ready indication of contractors' performance standard for reference by the project office and relevant tender board in tender evaluation. The evaluation of contractors' performance is based on the reports written on the contractors' performance in Government works contracts in accordance with the Contractor Management Handbook (CMH). The contractors' performance reports are normally due on the last day of February, May, August and November. The 3-month periods in between these due dates are hereinafter referred to as "the reporting periods".

6. Commencing from the reports due on 28 February 2007, the reporting of contractors' performance adopts a 5-grade instead of the previous 3-grade marking scheme. Updating of the Contractors' Performance Index System is hence necessary to revise the method of evaluation of contractors' performance accordingly.

## **Contractors' Performance Index System**

7. Under the Contractors' Performance Index System, the performance of a contractor is represented by a performance rating which derives from the performance scores given in all the reports written on the performance of the contractors in Government works contracts in the preceding 12 reporting periods.

8. The performance score of a contractor's performance report is determined by the percentage of the scores attained by the contractor over the maximum scores of 11 attributes as shown in Appendix A. The score of each attribute is based on its maximum score factored in accordance with the performance grade attained by the contractor, i.e. Very Good, Good, Satisfactory, Poor or Very Poor. A report with a performance score of less than 40 will be rated as "Adverse".

9. The Performance Rating of a contractor is the weighted average of the performance scores of all the reports on the performance of the contractor referred to in paragraph 7 above. Weightings are given to the contractor's performance reports according to the original contract sum of the contracts and

the time at which the reports were written as shown in Appendix A.

### **Generation of Performance Rating**

10. Departments shall be responsible for uploading all contractors' performance reports to the Contractor Management Information System (CMIS) within the time limit specified in the CMH after the date due for the report referred to in paragraph 5 above. Environment, Transport and Works Bureau (ETWB) will then generate the new performance ratings on the first working day of February, May, August and November. Contractors on the List of Approved Contractors for Public Works or the List of Approved Suppliers of Materials and Specialist Contractors for Public Works ("the Approved List") will be advised of their respective new performance ratings by post. Departments may obtain a report on a contractor's recent performance ratings over the past two years from the CMIS terminals.

### **Transition Period**

11. As a result of the change from a 3-grade to a 5-grade marking scheme, there are two types of reports in the CMIS, namely, the 3-grade reports due before 28 February 2007 and the subsequent 5-grade reports. The performance ratings generated on 2 May 2007, and at subsequent 3-month intervals referred to in paragraph 10 above until 2 November 2009 ("the transition period"), include both types of reports in the calculations since the reports in the preceding 12 reporting periods are counted. In this circumstance, normalization of the performance scores of the 3-grade reports with those of the 5-grade reports is necessary. The method of converting the performance scores of the previous 3-grade reports is shown in Appendix B. This conversion is only applicable to the determination of the performance ratings in the transition period and does not change the actual performance scores of the previous 3-grade reports concerned or the performance ratings generated on or before 1 February 2007 retrospectively.

### **Application**

12. The contractor's performance ratings are used to determine the

tenderers' performance scores in the Formula Approach which has been implemented for evaluation of tenders for works contracts since November 2002. These ratings may also be used in other tender evaluation methods to provide tender examiners and tender boards with an indication of the level and the trend of the contractor's recent performance.

13. The contractors' performance index system is not intended to replace or override the current practice of examining tenderers' past performance from their past performance reports. There is no passing mark in the system. However, if a tenderer's current performance rating falls below 40, or if there is an obvious and consistent downward trend, a closer examination of the contractor's past performance should be carried out and full justification must be provided before his tender is recommended for acceptance.

### **Tender Reports**

14. In submitting a tender report, departments should include the report on the contractor's performance ratings over the past two years in respect of:

- (i) the three lowest tenders, if the lowest tender is recommended for acceptance; or
- (ii) all lower tenders, the recommended tender and the next two higher tenders, if the recommended tender is not the lowest.

15. In the case of a joint venture, the report on contractor's performance ratings for each participant or shareholder of the joint venture should be submitted with the tender report unless the participant or shareholder is not a contractor on the Approved List.

**( MAK Chai-kwong )**  
**Permanent Secretary for the Environment,**  
**Transport and Works (Works)**

**Contractor's Performance Rating**  
**Method of Evaluation**

Aspect of Performance	<u>Maximum Score</u>	<u>Contractor's Score</u>
1. Workmanship	15	(Note 1)
2. Progress	15	"
3. Site Safety	25	"
4. Environmental Pollution Control	15	"
5. Organisation	10	"
6. General Obligations	5	"
7. Industry Awareness	5	"
8. Resources	10	"
9. Design	10	"
10. Attendance to Emergency	10	"
11. Attitude to Claims	5	(Note 2)
<p>The performance score assigned to a performance report = <math>\frac{\text{Sum of Contractor's Score}}{\text{Sum of Maximum Score}} * 100</math></p>		

**Contractor's performance rating** = **Weighted average of the performance scores of all the reports in the preceding 12 reporting periods (Notes 3, 4 & 5)**

Notes:

1. For items 1 to 10, contractor's score will be given according to the following scale. For any item where it is irrelevant to the works and no appraisal has been made, both the maximum score and contractor's score for that item shall be zero.

<u>Grading of the respective item in the report</u>	<u>Contractor's score</u>
Very good	1.0 x maximum score
Good	0.75 x maximum score
Satisfactory	0.5 x maximum score
Poor	0.25 x maximum score
Very poor	0

2. For item 11, in accordance with Section E of Part I of the contractor's performance report, maximum score will be given if the contractor's attitude to claims is reasonable or the item is not applicable (e.g. no claim has been submitted). A zero mark will be given if the contractor's attitude to claims is unreasonable.
3. A weighting shall be assigned to each contract according to the original contract sum in Section C of Part I of the contractor's performance report, as follows -

<u>Original contract sum</u>	<u>Weighting</u>
below \$20M	1
\$20M or above but below \$50M	2
\$50M or above but below \$100M	3
\$100M or above	4

## **Appendix A**

4. Another weighting factor of 5, 3 and 2 shall be assigned to a contractor's performance in the immediate past, second and third year respectively. The weighting factor referred to in Note 3 times the weighting factor referred to in this Note 4 shall be the weighting factor for determining the contractor's performance rating.
  
5. If the contractor is a participant or a shareholder of a joint venture for a particular contract, the performance scores of the reports on the performance of the joint venture in that contract shall also be taken into the calculation. In determining the weighting of that contract referred to in Note 3 above, the value of his share of the Works shall be taken as the original contract sum.



**Conversion of Past Performance Scores during Transition Period**

1. The performance scores of the previous 3-grade contractors' performance reports that are included in the computation of the Performance Ratings generated from 2 May 2007 to 2 November 2009 inclusive ("Transition period") have to be adjusted by a conversion factor according to the following adjustment procedures:
  - (a) To determine the conversion factor, a reference reporting period ending 28 February 2007 is chosen for which two reports using both the 3-grade and 5-grade marking schemes would have been written on the contractor's performance for all Government works contracts. This was announced by ETWB's memo (ref. 01CXK-01-4 in ETWB(PS)108/34) of 9 February 2007. Two sets of performance scores for this reporting period have therefore been obtained, i.e. one for the 3-grade and another for the 5-grade marking schemes. The conversion factor is determined by the ratio of the average values of these two sets of performance scores as shown in the formula in sub-paragraph (b) below.
  - (b) The performance scores of the previous 3-grade reports referred to in paragraph 1 above shall be adjusted by a conversion factor according to the following formula:

$$\begin{array}{l}
 \text{Adjusted = Score of} \\
 \text{Score} \quad \quad \quad \text{3-grade report}
 \end{array}
 \times
 \frac{
 \begin{array}{l}
 \text{Average performance score of all reports in the} \\
 \text{reporting period ending 28/2/2007 adopting the} \\
 \text{5-grade marking scheme}
 \end{array}
 }{
 \begin{array}{l}
 \text{Average performance score of all reports in the} \\
 \text{same reporting period using the 3-grade marking} \\
 \text{scheme}
 \end{array}
 }$$

*(the conversion factor)*

**APPENDIX 7-2-10**  
**MALAYSIA EXAMPLE**





Projek Lebuh raya Utara-Selatan Berhad

PERFORMANCE OF CONTRACTORS FOR JAN - DEC 2008

Date:

NO.	Job No./Contract No.	Contractor	Rating (1-5)	REMARKS
			1) Manpower Professional 1 2 3 4 5 General Labour 1 2 3 4 5 2) Machinery 3) Work Programme 1 2 3 4 5 4) Quality of Work 1 2 3 4 5 5) Management 1 2 3 4 5 6) Response Time 1 2 3 4 5 7) Overall 1 2 3 4 5	
			1) Manpower Professional 1 2 3 4 5 General Labour 1 2 3 4 5 2) Machinery 3) Work Programme 1 2 3 4 5 4) Quality of Work 1 2 3 4 5 5) Management 1 2 3 4 5 6) Response Time 1 2 3 4 5 7) Overall 1 2 3 4 5	
			1) Manpower Professional 1 2 3 4 5 General Labour 1 2 3 4 5 2) Machinery 3) Work Programme 1 2 3 4 5 4) Quality of Work 1 2 3 4 5 5) Management 1 2 3 4 5 6) Response Time 1 2 3 4 5 7) Overall 1 2 3 4 5	

Prepared by:

Confirmed by:

Note Rating :

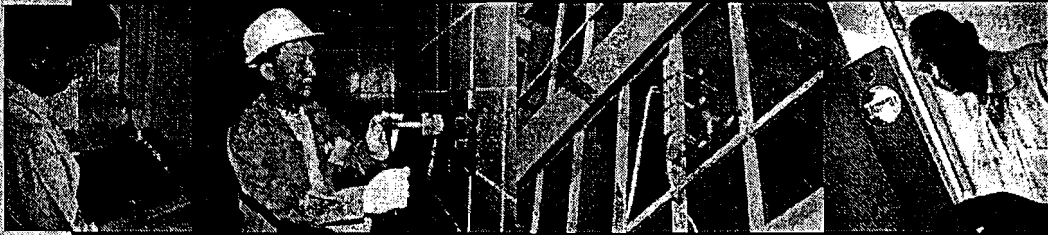
- 1. Unacceptable
- 2. Below Expectations
- 3. Meet Expectations
- 4. Exceed Expectations
- 5. Far Exceed Expectations



**APPENDIX 7-2-11**  
**SINGAPORE EXAMPLE**



# CONQUAS®



**THE BCA CONSTRUCTION QUALITY ASSESSMENT SYSTEM**

Building and Construction Authority

We shape a safe, high quality, sustainable and resilient built environment.





**CONQUAS®**  
**THE BCA**  
**CONSTRUCTION QUALITY ASSESSMENT SYSTEM**

First Edition 1989  
Second Edition 1990  
Third Edition 1992  
Fourth Edition 1995  
Fifth Edition 1998  
Fifth Edition 2000 version  
Fifth Edition 2003 version  
Sixth Edition 2005  
Seventh Edition 2008

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## 1.0 INTRODUCTION

### 1.1 Objectives of CONQUAS

The Construction Quality Assessment System or **CONQUAS** was developed by the Building and Construction Authority (BCA) in conjunction with major public sector agencies and various leading industry professional bodies, organizations and firms to measure the quality level achieved in a completed project.

CONQUAS was designed with three objectives:

- (a) To have a standard quality assessment system for construction projects.
- (b) To make quality assessment objective by:
  - measuring constructed works against workmanship standards and specification.
  - using a sampling approach to suitably represent the whole project.
- (c) To enable quality assessment to be carried out systematically within reasonable cost and time.

CONQUAS is an independent assessment. Unless specified in the building contract, project engineers or architects should not use CONQUAS to decide if the building or parts of the building project are acceptable.

### 1.2 Scope of CONQUAS

CONQUAS sets out the standards for the various aspects of construction work and awards points for works that meet the standards. These points are then summed up to give a total quality score called the **CONQUAS Score** for the building project.

CONQUAS covers most aspects of general building works. The assessment consists of **three components**:

- (1) **Structural Works,**
- (2) **Architectural Works and**
- (3) **Mechanical & Electrical (M&E) Works.**

Each component is further divided into different items for assessment. However, the assessment excludes works such as piling, heavy foundation and sub-structure works which are heavily equipment-based, buried or covered and usually called under separate contracts or sub-contracts.

The building is assessed primarily on **workmanship standards** achieved through site inspection. The assessment is done throughout the construction process for Structural and M&E Works and on the completed building for Architectural Works.

Apart from site inspection, the assessment also includes tests on the materials and the functional performance of selected services and installations. These tests help to safeguard the interest of building occupants in relation to safety, comfort and aesthetic defects which surface only after sometime.

### 1.3 Derivation of CONQUAS

The minimum standards were derived from discussions with the **major public sector agencies, developers, consultants and contractors** based on the general specifications used in their projects.

To match the expectations from the end users, feedback through complaints and defects listings were also considered in refining the weightages and assessment standards.

In developing CONQUAS, studies and numerous trials were conducted to fine-tune its new test techniques and assessment standards. Moderation of the scoring system was carried out along with trials to ensure accuracy, consistency and alignment with end users expectations.

## 2.0 CONQUAS

### 2.1 Components to be assessed

The CONQUAS assessment is divided into three main components - Structural Works, Architectural Works and M&E Works.

#### (a) Structural Works

The structural integrity of the building is of paramount importance as the costs of failure and repairs are very significant. The assessment of Structural Works comprises:

- (i) Site inspection of formwork, steel reinforcement and finished concrete during construction. The assessment shall include structural steel and pre-stressed concrete if each constitutes more than 20% of the total structural cost. Precast elements will also be assessed if the precast concrete volume exceeds 20% of total structural concrete volume.
- (ii) Laboratory testing of compressive strength of concrete and tensile strength of steel reinforcement.
- (iii) Non-destructive testing of the uniformity and the cover of hardened concrete.

The quality standards for Structural Works are given in Appendix 1.

#### (b) Architectural Works

Architectural Works deal mainly with the finishes and components. This is the part where the quality and standard of workmanship are most visible. The assessment covers:

- (i) Site inspection of internal finishes, roofs, external walls and external works at the completion stage of the building. Internal finishes include floors, internal walls, ceiling, doors, windows and components (architectural works that are not classified above).

- (ii) Material & functional tests such as window water-tightness, wet area water-tightness and adhesion of internal wall tiles. There is also in-process assessment on installation of waterproofing for internal wet areas.

The quality standards for Architectural Works are given in Appendix 2.

**(c) Mechanical & Electrical (M&E) Works**

The quality of M&E Works is important in view of its increasingly high cost proportion and its impact on the performance of a building. The assessment covers Electrical Works, Air-conditioning & Mechanical Ventilation Works (ACMV), Fire Protection Works, Sanitary & Plumbing Works and basic M&E fittings. The stages of the assessment include:

- (i) Site inspection of installed works **before** they are embedded/concealed. Such items include ACMV ductworks, electrical conduits, concealed pipes, etc.
- (ii) Site inspection of final installed works such as the Air-Handling Unit (AHU), cooling tower, fire alarm control panel, etc.
- (iii) Performance tests on selected works such as Water Pressure Test, Earthing Test, Dry Riser Test, etc.

The quality standards for M&E Works are given in Appendix 3.



## 2.2 The Weightages

In CONQUAS, the weightages for Structural, Architectural and M&E works are allocated according to four categories of buildings as follows:

Components	CAT A Commercial, Industrial, Institution & others	CAT B Commercial, Industrial, Institution & others	CAT B Private Housing	CAT C Public Housing	CAT D Islanded Housing
Structural Works	25%	30%	25%	35%	30%
Architectural Works	55%	60%	65%	60%	65%
M&E Works	20%	10%	10%	5%	5%
CONQUAS Score	100%	100%	100%	100%	100%

*Note : In general, projects with central cooling system having cooling tower, chiller system, etc are classified under CAT A. Otherwise, it will be classified under CAT B. Appendix 5 provides a guide with listing of buildings under the various categories.*

The weightage system, which is aimed at making the CONQUAS score objective in representing the quality of a building, is a compromise between the cost proportions of the three components in the various buildings and their aesthetic consideration.

The CONQUAS score of a building is the sum of points awarded to the three components in each category of buildings.

## 2.3 CONQUAS Assessor

BCA assessors undergo a rigorous training programme. They are required to attend BCA's in-house CONQUAS training and calibration programme to ensure competency and consistency in the assessment.

## 2.4 Sampling

As it is impractical to assess all elements in a building, CONQUAS uses a sampling system for the assessment. The sampling system, which is based on the gross floor area of the building, will ensure that the assessment adequately represents the entire building.

## 3.0 THE ASSESSMENT

### 3.1 Assessment Approach

In general, the Assessor should select the actual locations to be assessed prior to each assessment. Selection of samples shall be based on drawings and location plans. The samples shall be distributed as uniformly as possible throughout the construction stages.

The scoring will be done on the works that are inspected for the first time. Rectification and correction carried out after the assessment will not be re-scored. The objective of this practice is to encourage contractors *"doing things right the first time"*.

When an assessed item does not comply with the corresponding CONQUAS standards, it is considered failed and a "X" will be noted in the assessment form. Likewise a "✓" is given for an item meeting the standards. A "blank" will indicate that the item is not applicable. The score is computed based on the number of "✓" over the total number of items assessed.

### 3.2 Structural Works Assessment

The assessment for Structural Work will be carried out for every building block as the construction proceeds. A sample in structural work can be a beam, a column, a wall or a slab. The assessment of a reinforced concrete structure consists of the following items:

Reinforced Concrete Structure	Weightage %
Fornwork	15
Rebar	20
Finished Concrete	25
Concrete Quality	5
Steel Reinforcement Quality	5
NDT - UPV test for concrete uniformity	15
NDT - Electro-Covermeter test for concrete cover	15
<b>Total</b>	<b>100</b>

*\* If total precast concrete volume exceeds 20% of total structural concrete volume, assessment will be carried out for precast concrete construction. The points will be distributed proportionately between formwork/rebar assessment and precast concrete assessment based on the respective concrete volume percentage.*

For a typical reinforced concrete structure, selection of samples for assessment is based on the following guidelines:

Item	Area per Sample	Min Sample	Max Sample	Remarks	
1	Structural Elements	500 m <sup>2</sup>	30	150	For Non-Housing Project
1a	Structural Elements	1500 m <sup>2</sup>	30	50	For Housing Project
2	Concrete Compressive Strength	-	100%	-	Declaration by Qualified Person
3	Steel reinforcement Tensile Strength	-	100%	-	Declaration by Qualified Person
4	NDT- UPV test for concrete uniformity	5,000 m <sup>2</sup>	2 sets	20 sets	5 structure members per set
5	NDT - Electro-Covermeter test for concrete cover	5,000 m <sup>2</sup>	2 sets	20 sets	5 structure members per set

*Note: The computed number of elements to be checked must be evenly distributed throughout the entire block and cover at least 50% of floors in a block. They should also as far as possible cover the different types of structural elements.*

The resulting score for the formwork/rebar/precast and finished concrete will be the sum of the number of checks that meet the standards.

There is no assessment of precast components at the precast yard. The assessment is applicable for all types of precast components at site.

The assessment of the quality of concrete and steel reinforcement and the non-destructive tests is based on compliance to the standards (see Appendix 1a).

The introduction of the non-destructive tests, i.e. on concrete uniformity and cover for steel reinforcement, is to minimise the risk of carbonation and steel corrosion which affect the durability of the concrete structures.

If Structural Works consists of structural steelwork which constitutes more than 20% of the structural cost, assessment will be required for the latter and the points will be distributed proportionately. This applies to Pre-stressing Works as well. In any case, the distribution should follow the cost composition for these three types of structural works in a project.

The distribution of points for Structural Steelwork and Pre-stressed Concrete are as follows:

Structural Steelwork	Weightage %
Main Member/Partially Assembled Component	40
Metal Decking	20
Erection Tolerances	10
Corrosion & Fire Protection	10
Welding Test Reports	20
<b>Total</b>	<b>100</b>

*Note: Assessment for Structural steel roof truss is compulsory irregardless of the 20% costing criteria*

Pre-stressed Concrete	Weightage %
Tendon & Anchorage	25
Sheathing	25
Stressing & Grouting	25
Debonding	25
<b>Total</b>	<b>100</b>

The selection of samples for **Structural Steelwork** assessment is based on the following guidelines:

Items	Steel tonnage per sample	Min Sample
<b>Structural Elements</b>		
Main member / Partial assembled component	250	5
Metal Decking	250	5
Erection Tolerances	500	5
Corrosion & Fire Protection	500	5
<b>Material &amp; Functional Test</b>		
Welding Test Reports (NDT)	All critical welding joints	

### 3.3 Architectural Works Assessment

Assessment of Architectural works is carried out upon completion of the building and before handing over of the project to the owner.

The assessment consists of the following items:

Architectural Elements	Weightage %	
	Total %	Breakdown
<b>Internal Finishes</b>	56	
Floor		16
Internal Wall		16
Ceiling		6
Door		6
Window		6
Component		6
Roof	4	4
<b>External Wall</b>	12	12
<b>External Work*</b>	6	6
<b>Material &amp; Functional Tests</b>	22	
Pre-packed Plaster		1
Field Window Water-Tightness Test (WTT) (BCA Test 8 pts + Self-Testing 2 pts)		10
Wet Area Water-Tightness Test (BCA Test 4 pts + Self-Testing 1 pt)		5
Internal Wet Area Waterproofing Process		2
Pull-Off-Test for Internal Wall Tiles		4
<b>Total</b>		100

*Note: Assessment for internal wet area waterproofing process will be waived and points allocated automatically if the appointed contractor for such works is accredited under the SCI Accreditation Scheme for Waterproofing Specialist Contractors.*

Weightages for internal finishes and M&E fittings assessment are allocated at the defect level based on the guidelines set out below:

Element	Element Weightage	Defect Category	Defect Weightage
Floor	16 points	Finishing	4.8
		Alignment & Evenness	2.4
		Crack & Damages	4.8
		Hollowness	1.6
		Jointing	2.4
Internal Wall	16 points	Finishing	4.0
		Alignment & Evenness	2.4
		Crack & Damages	4.8
		Hollowness	2.4
		Jointing	2.4
Ceiling	6 points	Finishing	0.9
		Alignment & Evenness	0.9
		Crack & Damages	1.8
		Roughness	1.5
		Jointing	0.9
Door	6 points	Joint & Gap	0.6
		Alignment & Evenness	0.6
		Material & Damages	1.8
		Functionality	1.8
		Accessories Defects	1.2
Window	6 points	Joint & Gap	0.6
		Alignment & Evenness	0.6
		Material & Damages	1.2
		Functionality	1.8
		Accessories Defects	1.8
Component	6 points	Joint & Gap	0.6
		Alignment & Evenness	0.6
		Material & Damages	1.8
		Functionality	1.8
		Accessories Defects	1.2
M&E Fitting	*15 points	Joint & Gap	*1.5
		Alignment & Evenness	*3.0
		Material & Damages	*4.5
		Functionality	*4.5
		Accessories Defects	*1.5

\* Illustration refers to CONQUAS Category B projects only. For projects in other categories, weightages at defect level will be distributed in similar proportions

The assessment is based on the sampling guidelines as set out below:

	Items	GFA per Sample	Min Sample	Max Sample	Remarks
1	Internal Finishes	500 m <sup>2</sup>	30	150	For Non-Housing Project
1a	Internal Finishes	70 m <sup>2</sup>	30	800	For all Private Housing Project
1b	Internal Finishes	70 m <sup>2</sup>	30	600	For Public Housing Project
2	External Wall	-	50%	-	50% of the blocks / units
3	External Work	-	1	-	1 for each type of external work
4	Pre-packed Plaster	-	-	-	Only pre-packed plaster used. Declaration by Qualified Person
5a	Field Window Watertightness Test (WTT)	-	20	100	Conducted by BCA
5b	Field Window Watertightness Test (WTT)	-	25%	-	Self-Testing with declaration by Qualified Person
6a	Wet Area Water-tightness Test	-	20	100	<ul style="list-style-type: none"> <li>• 10% of all bathrooms and/or toilets (by location)</li> <li>• all will be tested if &lt; 20 nos</li> <li>• not required for non-housing project if &lt; 20 nos</li> </ul>
6b	Wet Area Water-tightness Test	-	100%	-	<ul style="list-style-type: none"> <li>• Self-Testing with declaration by Qualified Person</li> <li>• Including flat roof</li> </ul>
7	Internal Wet Area Waterproofing Process	-	-	-	In-process assessment based on approved Method Statement
8	Pull-Off-Test for Internal Wall tiles	10,000 m <sup>2</sup>	1 set	5 sets	5 tiles per set (by location)

A location for **internal finishes** assessment is a functional space of a building such as a room, hall, toilet, kitchen, yard, corridor or lobby. Locations are further categorised into three types:

**Principal locations** are major functional places such as halls and rooms.

**Circulation locations** include lift lobbies, corridors and staircases.

**Service locations** are utility areas such as toilets, kitchens, balconies and yards.



The computed number of locations will be distributed according to "Principal", "Circulation" and "Service" based on the percentages set out in the four categories of buildings as below:

Locations	CAT A Commercial Industrial Institution Others	CAT B		CAT C Public Housing	CAT D Landed Properties
		Housing	Non-Housing		
Principal	60%	40%	60%	40%	40%
Service	15%	40%	15%	40%	40%
Circulation	25%	20%	25%	20%	20%

Scoring of internal finishes is based on the defects groups as shown in Appendix 4 '*Defects Grouping Guide for Assessment of Internal Finishes*'.

In general, any item which is not available in a project will not be considered for scoring. For such case, the architectural score will be pro-rated accordingly. However, any available item that is not offered for assessment will be considered as failed and no points awarded.

An item under assessment will be considered failed if it does not meet the standards. In addition, any item found to be defective functionally such as evidence of water seepage in the window, slab, ceiling or roof, is considered to have failed the assessment. Likewise for a particular defect that is found excessive in an item (say excessive cracks on a wall).

For the assessment of **roof**, a minimum 50% of the total number of buildings will be assessed. This applies to the assessment of **external walls** where a minimum 50% of the total number of buildings will be required. For a building, the external wall will be divided into 4 walls for assessment.

The External Works assessment consists of the following locations:

- (a) Link-way / Shelter - 10m length section per sample and minimum 2 samples
- (b) Apron & Drain - 10m length section per sample and minimum 2 samples
- (c) Roadwork & Carpark - 10m length section per sample and minimum 1 sample
- (d) Footpaths & Turfing - 10m length section per sample and minimum 2 samples
- (e) Playground - 1 location
- (f) Court - 1 location
- (g) Fencing & Gate - 10m length section per sample and minimum 1 sample
- (h) Swimming Pool - 10m length section per sample and minimum 1 sample
- (i) Club House - 1 location
- (j) Guard House - 1 location
- (k) Electrical Substation - 1 location

Each item in the **External Works** will be assessed separately and all the locations listed above must be assessed where applicable.

Under the material & functional tests, self-testing items like field window water-tightness test for 25% of windows and 100% wet area watertightness test (including flat roof) and the use of pre-packed plaster for all plastering works are based on declaration by the project Qualified Person (QP). In general, declaration on passing for self-testing is based on first-time-right basis.

[None]

### 3.4 M&E Works Assessment

The M&E Works assessment will be carried out in two stages: during the construction of structural works and upon completion of the building.

The assessment covers the following areas, with their weightages allocated in accordance with the four categories of projects:

M&E Elements	CAT A	CAT B	CAT C	CAT D
M&E Works Assessment				
Electrical	15	15	10	10
ACMV	20	20	-	10
Fire Protection	10	10	10	-
Plumbing & Sanitary	15	15	20	-
Basic Fittings	15	15	60	80
Sub-total	75	75	100	100
Weightage	50%	50%	100%	100%
M&E Performance Test Assessment				
Performance Testing	100	100	-	-
Weightage	50%	50%	-	-
Total	100%	100%	100%	100%

Note: "-" means that no assessment on that M&E elements is required.

Points allocated under each element of the M & E works assessed, regardless of building category, will follow these guidelines:

Element	Points Allocated
<b>Electrical</b>	
1. Embedded conduit	2
2. Main cables	1
3. Surface conduits	2
4. Cable tray, ladder & trunking	2
5. Distribution board	4
<b>ACMV</b>	
1. Air handling unit	2
2. Pump	1
3. Cooling tower	1
4. Chiller	1
5. Pipework	1
6. Split unit / Window air conditioner	3
7. Air-con comfort	2
8. Ductwork	4
9. Fire-rated duct	1
10. Dampers	2
11. Fire Dampers	1
12. Flexible ducts	3
13. Flexible connectors	1
<b>Fire Protection</b>	
1. Wet / Dry riser	2
2. Sprinkler	2
3. Fire Alarm	1
4. Hosereel	2
<b>Plumbing &amp; Sanitary</b>	
1. Concealed pipes	2
2. Exposed pipes	5
3. Water tank	1
4. Pump	1

Performance Testing, covering Electrical, ACMV, Fire Protection and Sanitary & Plumbing, is assessed based on "**Get-It-Right-First-Time**" principle. The assessment will be based on the **percentage of tests passing the first inspection** for each type of test.

The score will be pro-rated as follow:

Ave % Passing at First Attempt	% of Performance Test Score
80% or below	0%
80% < X < 100%	$(X-80)/20 \times 100\%$
100%	100%

Note : "X" means the average percentage of passing at first attempt.

The assessment of Basic M&E Fittings will be carried out during the Internal Finishes assessment.

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Like the Architectural Works, sampling of M&E works will be determined based on the four categories of buildings as per the guidelines below:

	CAT A 1,000 m <sup>2</sup> per sample	CAT B 1,500 m <sup>2</sup> per sample	CAT C 3,500 m <sup>2</sup> per sample	CAT D 3,500 m <sup>2</sup> per sample
<b>Electrical</b>				
1. Embedded conduit	2+	2+		2+
2. Main cables	1	1		
3. Surface conduits	1+	1+	1+	1+
4. Cable tray, ladder & trunking	1+	1+	1+	1
5. Distribution board	2+	2+		1
<b>ACMV</b>				
1. Air handling unit	1+			
2. Pump	1			
3. Cooling tower	1			
4. Chiller	1+			
5. Pipework	1			
6. Split unit / Window air conditioner	2+	2+		3+
7. Air-con comfort	1+	1+		2+
8. Ductwork	3+	1		
9. Fire-rated duct	1	1		
10. Dampers	1+	1		
11. Fire Dampers	1	1		
12. Flexible ducts	2			
13. Flexible connectors	1			
<b>Fire Protection</b>				
1. Wet / Dry riser	1+	1+	1+	
2. Sprinkler	1+	1		
3. Fire Alarm	1	1		
4. Hosereel	1+	1+	1+	
<b>Plumbing &amp; Sanitary</b>				
1. Concealed pipes	1+	1+		
2. Exposed pipes	4+	4+	4+	
3. Water tank	1	1	1	
4. Pump	1	1	1	
Minimum Samples	35	25	10	10
Maximum Samples	70	50	20	20

Remarks : + means to be repeated for additional samples required

Note : Basic M&E Fittings - 500 m<sup>2</sup> per sample with min 30 and max 150 samples

### 3.5 Computation of CONQUAS Score

Below is an example of how a project's CONQUAS score will be computed:

**Scenario:**

- Project Type - Commercial (CAT A)
- Structural System - Reinforced Concrete system with 31% precast concrete volume and steelworks at 75% to 25% cost ratio
- Roofing System - Flat Roof
- Nos of Toilet - 10 nos
- External Wall - Full Glass Curtain Wall

**Step 1: Computation of Structural Score**

Structural Works (Reinforced Concrete Structure)	Weightage %	Score
Formwork/Rebar (69% concrete volume)	$0.69 \times 35\% = 24.1\%$	22.3
Precast (31% concrete volume)	$0.31 \times 35\% = 10.9\%$	8.0
Finished Concrete	25	20.5
Concrete Quality	5	5.0
Steel Reinforcement Quality	5	5.0
NDT - UPV for concrete uniformity	15	10.5
NDT - Electro-Covermeter test for concrete cover	15	12.5
<b>Total</b>	<b>100</b>	<b>83.8</b>

Structural Works (Structural Steelwork)	Weightage %	Score
Main Member/Partially Assembled Component	40	33.2
Metal Decking (not used)	-	NA
Erection Tolerances	10	8.3
Corrosion & Fire Protection	10	10.0
Welding Test Reports	20	19.5
<b>Total</b>	<b>80</b>	<b>71</b>
<b>Pro-rated Total</b>	<b>100</b>	<b>88.8</b>

The Structural Score will be proportioned by the cost ratio as follows:

Structural System	(A) Individual Score	(B) Cost Proportion	(A) X (B)
Reinforced Concrete Works	83.8	75%	62.9
Structural Steelworks	88.8	25%	22.2
<b>Structural Score</b>			<b>85.1</b>

**Step 2: Computation of Architectural Score**

Architectural Works	Weightage %	Score
Floors	16	9.3
Internal Walls	16	9.0
Ceilings	6	5.8
Doors	6	3.6
Windows	6	4.1
Components	6	4.6
Roof	4	2.5
External Walls	12	10.1
External Works	6	4.5
Pre-packed Plaster	1	1.0
Field Window Water-tightness Test (WTT)		
- BCA Testing	8	6.6
- Self-Testing	2	1.4
Wet Area Water-Tightness Test		
- BCA Testing (NA as <20 nos for non-residential)	-	NA
- Self-Testing	1	1.0
Internal Wet Area Waterproofing Process	2	2.0
Pull-Out-Test for Internal Wall Tiles	4	3.2
<b>Sub-total</b> = (100-4)	<b>96</b>	<b>68.7</b>
<b>Pro-rated Total</b> = (68.7/96)	<b>100</b>	<b>71.6</b>

**Step 3: Computation of M&E Score**

M&E Elements	Cat. A	Score
<b>M&amp;E Works Assessment</b>		
Electrical	15%	12.2
ACMV	20%	18.4
Fire Protection	10%	8.8
Plumbing & Sanitary	15%	11.2
Basic Fittings	15%	12.8
Sub-total	75%	63.4
Weightage (a)	50%	42.3
<b>M&amp;E Performance Test Assessment</b>		
Performance Test	100%	86.9
Weightage (b)	50%	43.4
<b>Total (a+b)</b>	<b>100%</b>	<b>85.7</b>



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Area of Works	Actual Score (A)	CAT A (B)	(A) X (B)
Structural Works	85.1	25%	21.3
Architectural Works	71.6	55%	39.4
M&E Works	85.7	20%	17.1
<b>CONQUAS Score</b>		<b>100%</b>	<b>77.8</b>

Step 4: Computation of Final CONQUAS Score

## QUALITY STANDARDS FOR STRUCTURAL WORKS

### Part 1: Reinforced Concrete Structures

	Item*	Standards
<b>1</b>	<b>Formwork</b>	
<b>1a</b>	Formwork dimensions and openings for services	<ol style="list-style-type: none"> <li>1) Tolerance for cross-sectional dimensions of cast in-situ &amp; precast elements: +10mm / -5mm</li> <li>2) Tolerance for penetration / opening for services: +10mm for size and <math>\pm 25</math>mm for location</li> <li>3) Tolerance for length of precast members (major dimension of unit): <ul style="list-style-type: none"> <li>• Up to 3m: <math>\pm 6</math>mm</li> <li>• 3m to 4.5m: <math>\pm 9</math>mm</li> <li>• 4.5m to 6m: <math>\pm 12</math>mm</li> <li>• Additional deviation for every subsequent 6m: <math>\pm 6</math>mm</li> </ul> </li> </ol>
<b>1b</b>	Alignment, plumb and level	<ol style="list-style-type: none"> <li>1) Tolerance for departure of any point from its position: 10mm</li> <li>2) Tolerance for plumb: 3mm / m, maximum 20mm</li> <li>3) Maximum deviation of mean level of staircase thread to temporary bench mark: <math>\pm 5</math>mm</li> <li>4) For cast in-situ elements, the deviation of level of any point from the intended level: <math>\pm 10</math>mm</li> </ol>
<b>1c</b>	Condition of formwork, props & bracing	<ol style="list-style-type: none"> <li>1) Formwork must be free from defects</li> <li>2) Before concreting, the interior must be free from debris</li> <li>3) All formwork joints must not have gaps to prevent leakage</li> <li>4) There must be adequate support, bracing and tie-back for the formwork to prevent bulging or displacement of structural elements</li> </ol>
<b>2</b>	<b>Reinforcement (cast in-situ &amp; Precast)</b>	
<b>2a</b>	Main & Secondary rebars	<ol style="list-style-type: none"> <li>1) According to structural drawings (numbers / sizes)</li> <li>2) Spacing of bars not more than that specified</li> </ol>
<b>2b</b>	Anchorage & lap lengths	<ol style="list-style-type: none"> <li>1) Required lap length not less than that specified</li> </ol>
<b>2c</b>	Cover provision	<ol style="list-style-type: none"> <li>1) According to specifications with tolerance of +5mm</li> </ol>
<b>2d</b>	Links, stirrups and trimming bars	<ol style="list-style-type: none"> <li>1) According to structural drawings (numbers / sizes)</li> </ol>

	Item*	Standards
2e	Rebar Condition	<p>2) Spacing of links not more than specified</p> <p>1) Rebars must be securely and properly tied in place</p> <p>2) Rebars must be freed from concrete dropping, corrosion etc</p>
3	<b>Finished Concrete (cast in-situ &amp; Precast)</b>	
3a	Dimension for elements / opening for services	<p>1) Tolerance for cross-sectional dimension of cast in-situ and precast elements: +10mm / -5mm</p> <p>2) Tolerance for opening: +10 for size and ±25mm for location</p> <p>3) Tolerance for length of precast members (major dimension of unit):</p> <ul style="list-style-type: none"> <li>• Up to 3m: ±6mm</li> <li>• 3m to 4.5m: ±9mm</li> <li>• 4.5m to 6m: ±12mm</li> <li>• Additional deviation for every subsequent 6m: ±6mm</li> </ul> <p>4) Straightness or bow (deviation from intended line) of precast member:</p> <ul style="list-style-type: none"> <li>• Up to 3m: 6mm</li> <li>• 3m to 6m: 9mm</li> <li>• 4.5m to 6m: 12mm</li> <li>• Additional for every subsequent 6m: 6mm</li> </ul> <p>5) Squareness of precast member – Difference between the greatest and shortest dimensions should not exceed the following: Length of shorter sides</p> <ul style="list-style-type: none"> <li>• Up to and including 1.2m: 6mm</li> <li>• Over 1.2m but less than 1.8m: 9mm</li> <li>• 1.8m and over: 12mm</li> </ul> <p>6) Twist of precast member – Any corner should not be more than the deviation stated from the plane containing the other 3 corners:</p> <ul style="list-style-type: none"> <li>• Up to 600mm wide and 6m in length: 6mm</li> <li>• Over 600mm wide and for any length: 12mm</li> </ul> <p>7) Flatness: 6mm per 1.5m</p>
3b	Alignment, plumb and level	<p>1) Tolerance for departure of any point from its position: ±10mm</p> <p>2) Tolerance for plumb: 3mm / 1m, maximum 20mm for floor to floor height and 40mm for the entire building height</p> <p>3) Maximum deviation of mean level: ±10mm</p> <p>4) For cast in-situ elements, the maximum deviation of levels</p>

	Item*	Standards
		within the element: 10mm
3c	Exposed surface	5) Camber at mid-span: according to specifications 1) Should not have visual exposure of groups of coarse aggregates resulting from grout leakage 2) Cold joint & formwork joint must be smooth 3) No bulging of structural elements 4) All formwork, nails, zinc strips, etc must be removed 5) No cracks or damages
4	<b>Precast Specific Requirements</b>	
4a	Lifting points/inserts	1) Tolerance for position: +20mm from centre line location in drawing 2) Lifting devices and inserts free from damages
4b	Sleeve system/connections	1) Tolerance for position: $\pm 6$ mm from centre line location in drawings 2) Bar protrusion length according to requirements. No bending, cranking or damages to bars 3) Bars free from concrete droppings or corrosion 4) Sleeves, grout holes, grout tubes not congested with debris
4c	Interface/joint requirements	1) Joint taper: <ul style="list-style-type: none"> <li>• Over 3m length: 6mm</li> <li>• Maximum for entire length: 9mm</li> </ul> 2) Alignment of horizontal and vertical joint: $\pm 6$ mm 3) Jog in alignment of matching edges: 6mm 4) Sitting of element: according to specifications 5) Installation of sealant and waterproofing: according to specifications
4d	Cast-in steel items/welded & bolted connections	1) Tolerance for position of cast-in steel items: $\pm 6$ mm from centre line location in drawings 2) Tolerance for position of openings for bolt connections: $\pm 3$ mm from centre line location in drawings 3) Relevant requirements in CONQUAS steelwork standards to be used where applicable

	Item*	Standards
5	<b>Structure Quality</b>	
5a	Concrete Cube test	1) According to specifications; for every pour of concrete, test cubes results at 28 days must satisfy the passing criteria as in SS289
5b	Reinforcement (Rebar)	1) To pass the tensile strength test for all the reinforcement bars used as according to: <ul style="list-style-type: none"> <li>- SS2:1999 for Grade 500 ribbed bars or</li> <li>- SS2:1987 for Grade 460 ribbed bars</li> </ul> 2) All the welded steel fabric used to comply with SS32 in their respective specified characteristic strength of not less than 250 N per mm <sup>2</sup> , 460 N per mm <sup>2</sup> and 485 N per mm <sup>2</sup> 3) No non-conforming reinforcement detected through test records has been installed in the structure

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	Item*	Standards
<b>6</b>	<b>Non-destructive testing</b>	
<b>6a</b>	Ultra Pulse Velocity test for Concrete Uniformity	<ol style="list-style-type: none"> <li>1) To conduct NDT using ultrasonic pulse velocity (UPV) to check the degree of uniformity of hardened concrete</li> <li>2) 5 columns per set and 2 readings per column</li> <li>3) Assessment is based on the difference between the 2 UPV readings within a column shall not exceed 0.05 km/s</li> <li>4) Method as per SS 78 : Part B3 : 1992</li> </ol>
<b>6b</b>	Electro-Covermeter test for concrete cover	<ol style="list-style-type: none"> <li>1) To check hardened concrete cover for reinforcement bars after casting: minimum 25mm or higher as according to specification</li> <li>2) 5 structural samples per set including: <ol style="list-style-type: none"> <li>a 3 for slab soffit @ 4 readings each</li> <li>b 1 for column @ 2 readings each on both axis of the column</li> <li>c 1 for beam @ 2 readings each on the soffit and one side of the beam</li> </ol> </li> <li>3) For each reading, full point for <math>\pm 5\text{mm}</math> and half point for <math>&gt; \pm 5\text{mm}</math> to <math>\pm 8\text{mm}</math>. For each location, no point will be awarded if any of the 4 readings exceeds <math>\pm 12\text{mm}</math>.</li> <li>4) Method as per SS 78 : Part B4 : 1992</li> </ol>

For the assessment of concrete cube test results, the percentage of points shall be awarded based on the percentage of non-compliance as tabulated in the table below:

Percentage of Points awarded	Percentage of non-compliance
100%	0 - 2.5%
75%	2.6 - 5.0%
50%	5.1 - 7.5%
25%	7.6 - 10%
0%	> 10%

\* An item is deemed to have failed if any one of the standards is not met.

## QUALITY STANDARDS FOR STRUCTURAL WORKS

### Part 2: Structural Steel Works

	Item*	Standards
1	Main member/Partial assembled component	
1a	Physical dimensions	<ol style="list-style-type: none"> <li>1) Cross sectional tolerance should not be less than the structural steel specifications or approved plan</li> <li>2) Tolerance for length of structural steel member: <math>\pm 3\text{mm}</math></li> <li>3) Tolerance for bolt hole size: <ul style="list-style-type: none"> <li>• <math>\leq 2\text{mm}</math> for bolt diameter <math>&lt; 24\text{mm}</math></li> <li>• <math>\leq 3\text{mm}</math> for bolt diameter <math>\geq 24\text{mm}</math></li> </ul>                     Tolerance for bolt hole position: <math>\pm 2\text{mm}</math> </li> </ol>
1b	Type and condition	<ol style="list-style-type: none"> <li>1) According to the structural steel specifications</li> <li>2) Surface preparation shall meet the surface roughness specifications</li> <li>3) Material used must be traceable to its original mill certificates</li> </ol>
1c	Welding	<ol style="list-style-type: none"> <li>1) Weld size, length and profile shall meet the structural steel specifications and drawings</li> <li>2) Visual inspection shall meet the structural steel specifications</li> <li>3) All weld shall follow approved welding procedures</li> <li>4) All welding must be done by qualified welders</li> </ol>
1d	Bolting	<ol style="list-style-type: none"> <li>1) Bolts and washers, type, size and number shall be according to the structural steel specifications</li> <li>2) Drilled holes shall be free from burrs</li> <li>3) The condition of bolted parts adjacent to the bolt heads, nuts, flat washers, connection gussets and splice plates shall be free from oil, paint, and loose mill scales or otherwise specified by the structural steel specifications</li> <li>4) Gap between adjacent parts shall not exceed 2mm</li> <li>5) Bolts shall be tightened to specified torque or as specified by the structural steel specifications</li> <li>6) Threaded bolts protruding at least one thread length with washers</li> </ol>

	Item*	Standards
2	<b>Metal decking</b>	
2a	<b>Type and condition</b>	<ol style="list-style-type: none"> <li>1) Correct type and thickness of metal decking used</li> <li>2) All decking joints must not have gaps</li> <li>3) All metal decking must be properly secured in place</li> <li>4) Metal decking must be free from defects and visible damages</li> <li>5) Before concreting, the decking must be free from grease, oil, paint, and all other foreign materials</li> <li>6) All accessories such as pour stop, end closures and cover plates must be in place before concreting</li> </ol>
2b	<b>Shear studs</b>	<ol style="list-style-type: none"> <li>1) Correct number and type of shear studs used</li> <li>2) Spacing and position according to approved plan</li> <li>3) Strength of shear stud welds not less than specified</li> <li>4) All welds should show a full 360-degree weld fillet. All welds free from visible damages</li> </ol>
2c	<b>Lapping and deck openings</b>	<ol style="list-style-type: none"> <li>1) According to structural steel specifications or approved plan</li> </ol>
3	<b>Erection tolerances</b>	
3a	<b>Column verticality</b>	<ol style="list-style-type: none"> <li>1) Tolerance for verticality: <math>\pm H/600</math> or 5mm, maximum <math>\pm 25\text{mm}</math>; where H is the floor to floor height in mm.</li> </ol>
3b	<b>Column position</b>	<ol style="list-style-type: none"> <li>1) The position in plan of a steel column at the base shall not deviate from the specified position by more than 10mm along either of the principal setting out axes</li> </ol>
3c	<b>Beam level</b>	<ol style="list-style-type: none"> <li>1) Maximum deviation of level at each end of the same beam: <math>\pm 5\text{mm}</math></li> <li>2) The level of the top of the steelwork at any storey shall be within <math>\pm 10\text{mm}</math> of the specified level</li> </ol>
3d	<b>Beam position</b>	<ol style="list-style-type: none"> <li>1) Beams shall not deviate from their specified positions relative to the column to which they are connected by more than 5mm</li> </ol>



	Item*	Standards
4	Corrosion and fire protection	
4a	Thickness of coating	1) Average thickness of the coating or the protective layer must not be less than specified
4b	Condition	1) No visible damages 2) No spalling of coating or protective layer from structural steel members
5	Welding test reports#	1) Reports for all critical welding joints from the specified contract requirements must be submitted 2) Test reports must comply with the acceptable criteria and to be endorsed by client's representative

# For test records, the following table would be used to determine the points awarded:

<i>Points awarded</i>	<i>Percentage of elements checked which does not</i>
20	0%
15	0% < x ≤ 5%
10	5% < x ≤ 10%
5	10% < x ≤ 15%
0	x > 15%

\* An item is deemed to have failed if any one of the standards is not met.

## QUALITY STANDARDS FOR STRUCTURAL WORKS

### Part 3: Pre-stressed Concrete

	Item*	Standards
1	<b>Condition of tendons &amp; anchorages</b>	1) All pre-stressing strands and wires should comply with the specified standards and requirements and be free from loose rust, oil, tar, paint and any foreign objects  2) All tendon anchorage are to comply with the specified standards and protected from corrosion  Thread parts to be greased wrapped and tapped holes protected until use
2	<b>Installation of sheathing</b>	1) Sheathing properly secured and protected and free from damage or puncture  2) Sheathing profile according to drawings throughout the length with position tolerance: $\pm 5\text{mm}$  3) Splice to sheathing shall be mortar tight  4) Air vents or grout tubes provided according to the drawing
3	<b>Stressing &amp; Grouting process</b>	1) Tendon ducts clean and free from foreign objects and tendon free moving in the duct  2) Strands stressed to the final pressure / elongation within the specific % accuracy of the stipulated value  3) All grouting operations of the tendons must be smooth and achieved without need to flush out in the first grouting
4	<b>Debonding</b>	1) Open ends of debond tubes over the debond length of strands sealed  2) Debond lengths according to the drawings  3) Debonding materials not punctured or damaged

\* An item is deemed to have failed if any one of the standards is not met.

## QUALITY STANDARDS FOR ARCHITECTURAL WORKS

### Part 1: Internal Finishes

	Item*	Standards
1	<b>Floors</b>	
1a	<b>General Requirements</b>	<ol style="list-style-type: none"> <li>1) <b>Finishing</b> <ul style="list-style-type: none"> <li>• No stain marks</li> <li>• Consistent colour tone</li> <li>• Floor divider provided where required</li> </ul> </li> <li>2) <b>Alignments &amp; Evenness</b> <ul style="list-style-type: none"> <li>• Evenness of surface (not more than 3mm per 1.2m)</li> <li>• Falls in wet areas should be in right direction</li> <li>• No ponding in falls for wet area</li> <li>• For staircases, the variance in lengths of threads and risers must not exceed 5 mm; nosing must be straight</li> <li>• Skirting size and joint aligned with floor if of same material</li> </ul> </li> <li>3) <b>Crack &amp; Damages</b> <ul style="list-style-type: none"> <li>• No visible damage / defects</li> </ul> </li> <li>4) <b>Hollowness / Delamination</b> <ul style="list-style-type: none"> <li>• No hollow sound when tapped with a hard object</li> <li>• No sign of delamination</li> </ul> </li> <li>5) <b>Jointing</b> <ul style="list-style-type: none"> <li>• Consistent skirting thickness</li> <li>• No visible gap between wall &amp; skirting</li> </ul> </li> </ol>
1b	<b>Screed finish</b>	<ol style="list-style-type: none"> <li>1) Surfaces should not be unduly rough or patchy</li> <li>2) No visible trowel marks</li> <li>3) Expansion joints should be provided at interval as stated by architect</li> </ol>
1c	<b>Tiled finish</b>	<ol style="list-style-type: none"> <li>1) Consistent colour and neat pointing</li> <li>2) No hollow sound when tapped with a hard object</li> <li>3) Joints are aligned and consistent with skirting and wall tiles</li> <li>4) Consistent joint size</li> <li>5) Lippage between 2 tiles should not be more than 1mm</li> <li>6) No visible lippage</li> <li>7) Expansion joints should be provided at interval as stated by architect</li> </ol>

	Item*	Standards
1d	Timber floor	<ol style="list-style-type: none"> <li>1) No warpage</li> <li>2) Timber strips to rest firmly on joists or screed</li> <li>3) No visible gaps in between timber strips</li> <li>4) Edges of the floor to be properly sealed</li> </ol>
1e	Carpet	<ol style="list-style-type: none"> <li>1) Stretched and even surface</li> <li>2) Joint should not be visible</li> <li>3) Proper anchoring at all edges</li> </ol>
1f	Raised Floor	<ol style="list-style-type: none"> <li>1) No loose floor panels</li> <li>2) No protrusion / potential of tripping over floor panels</li> <li>3) No jolting or rocking panel</li> </ol>

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	Item*	Standards
2	Internal Walls	
2a	General	<ol style="list-style-type: none"> <li>1) <b>Finishing</b> <ul style="list-style-type: none"> <li>• No stain marks</li> <li>• Consistent colour tone</li> <li>• No rough / patchy surface</li> </ul> </li> <li>2) <b>Alignments &amp; Evenness</b> <ul style="list-style-type: none"> <li>• Evenness of surface (not more than 3mm per 1.2m)</li> <li>• Verticality of wall (not more than 3mm per m)</li> <li>• Walls meet at right angles (not more than 4mm over 300mm)</li> <li>• Edges (wall to wall) to appear straight and aligned</li> </ul> </li> <li>3) <b>Crack &amp; Damages</b> <ul style="list-style-type: none"> <li>• No visible damage / defects</li> </ul> </li> <li>4) <b>Hollowness / Delamination</b> <ul style="list-style-type: none"> <li>• No hollow sound when tapped with a hard object</li> <li>• No sign of delamination</li> </ul> </li> <li>5) <b>Jointing</b> <ul style="list-style-type: none"> <li>• Straightness of corners and joints</li> </ul> </li> </ol>
2b	Plaster Finish	<ol style="list-style-type: none"> <li>1) Surface evenness (not more than 3mm over 1.2m)</li> <li>2) No hollow sound when tapped with a hard object.</li> <li>3) Surfaces should not be unduly rough or patchy esp no brush / trowel marks</li> </ol>
2c	Tiled Finish	<ol style="list-style-type: none"> <li>1) Tile joints aligned and with consistent joint size</li> <li>2) No hollow sound when tapped with a hard object</li> <li>3) Consistent colour and neat pointing</li> <li>4) Lippage between 2 tiles should not be more than 1mm</li> <li>5) No visible lippage</li> </ol>
2d	Cladding	<ol style="list-style-type: none"> <li>1) Proper anchorage for panels</li> <li>2) Joints aligned and with consistent joint size</li> <li>3) Sealant material compatible with cladding</li> <li>4) Consistent spacing and within allowable tolerance</li> </ol>
2e	Architectural Coating	<ol style="list-style-type: none"> <li>1) Substrate - see plaster finish</li> <li>2) Finished texture and colour to be uniform</li> </ol>

	Item*	Standards
2f	Painting	<ol style="list-style-type: none"> <li>1) Substrate - see plaster finish</li> <li>2) Surfaces are evenly painted</li> <li>3) Good opacity, no patchiness resulted from touch up works</li> <li>4) Free from peeling, blister and chalkiness</li> <li>5) No discolouration and fading</li> </ol>
2g	Pre-cast concrete planks	<ol style="list-style-type: none"> <li>1) Alignment with adjacent planks not more than 3mm</li> <li>2) Plane tolerance (3mm / 1.2m)</li> </ol>
2h	Wall Paper	<ol style="list-style-type: none"> <li>1) Stretched and even surface</li> <li>2) Joint should not be visible</li> <li>3) Proper anchoring at all edges</li> <li>4) Edges should be neatly laid and finished</li> </ol>
2i	Glass Blocks	<ol style="list-style-type: none"> <li>1) Pointing should be satisfactory</li> <li>2) Joint should be even</li> <li>3) Glass blocks should be properly aligned</li> </ol>
2j	Wood / Timber Panels	<ol style="list-style-type: none"> <li>1) Timber panels to rest firmly on joist or screed</li> <li>2) No visible gaps between panels</li> <li>3) Edges should be properly aligned and sealed</li> <li>4) No warpage</li> <li>5) No cracks</li> </ol>

	Item*	Standards
3	Ceilings	
3a	General Requirements	<ol style="list-style-type: none"> <li>1) <b>Finishing</b> <ul style="list-style-type: none"> <li>• No stain marks</li> <li>• Consistent colour tone</li> <li>• No patchy surface</li> </ul> </li> <li>2) <b>Alignment &amp; Evenness</b> <ul style="list-style-type: none"> <li>• Overall surface should be smooth, even, not wavy</li> <li>• Straightness of corners</li> </ul> </li> <li>3) <b>Crack &amp; Damages</b> <ul style="list-style-type: none"> <li>• No visible damage e.g spalling, leaks, cracks, etc</li> </ul> </li> <li>4) <b>Roughness</b> <ul style="list-style-type: none"> <li>• No rough surface</li> </ul> </li> <li>5) <b>Jointing</b> Consistent, aligned and neat</li> </ol>
3b	Skim Coats / Boarded Ceiling	<ol style="list-style-type: none"> <li>1) Not patchy, with no pin holes and with no trowel marks</li> <li>2) Formwork joints are grounded smooth</li> <li>3) Paintwork with good opacity and with no brush marks</li> <li>4) Access door joints should be sharp and in consistent width</li> </ol>
3c	False ceiling / Grid System	<ol style="list-style-type: none"> <li>1) Alignment of rails should be visually straight</li> <li>2) Surface should be overall level and even</li> <li>3) Chipped surfaces or corners should not be seen</li> </ol>

	Item*	Standards
4	Doors	
4a	General Requirements	<p>1) <b>Joints &amp; Gap</b></p> <ul style="list-style-type: none"> <li>• No visible gaps between door frame and wall</li> <li>• Consistent &amp; neat joints</li> <li>• Consistent gap between door leaf and frame and not more than 5mm</li> <li>• No visible gaps within door leaf and door frame</li> <li>• Consistent and no visible gaps for mitre joints</li> </ul> <p>2) <b>Alignment &amp; Evenness</b></p> <ul style="list-style-type: none"> <li>• Alignment/level with walls</li> <li>• Door frame and leaf to flush</li> <li>• Door and frame corners maintained at right angles</li> <li>• No rattling sound when door is closed</li> </ul> <p>3) <b>Material &amp; Damages</b></p> <ul style="list-style-type: none"> <li>• No stain marks and any visible damage</li> <li>• No sags, warps on door leaf</li> <li>• Fire stop provided where necessary</li> <li>• Door joints and nail holes filled up, properly sanded down and with good paint finish (including on top and bottom of door leaf and consistent in colour)</li> <li>• Glazing clean and evenly sealed with gasket</li> <li>• No sign of corrosion for metal frame</li> <li>• Consistent colour tone</li> </ul> <p>4) <b>Functionality</b></p> <ul style="list-style-type: none"> <li>• Ease in opening, closing and locking</li> <li>• No squeaky sound during swinging the leaf</li> </ul> <p>5) <b>Accessories Defects</b></p> <ul style="list-style-type: none"> <li>• Lock sets with good fit and no stains</li> <li>• No sign of corrosion in ironmongery</li> <li>• No missing or defective accessories</li> </ul> <p>Note 1: Civil defence shelter door will be considered as part of wall finishes</p> <p>Note 2: Metal gate will be assessed as component</p>



	Item*	Standards	
5	Windows		
	5a General Requirements	1)  2)  3)  4)  5)	<b>1) Joints &amp; Gap</b> <ul style="list-style-type: none"> <li>• No visible gap between window frame and wall</li> <li>• Consistent gap between window leaf and frame and not more than 5mm (timber window only)</li> <li>• No visible gaps within window leaf and frame</li> <li>• No visible gaps between window leaf and frame</li> <li>• Neat joint between window and wall internally and externally</li> <li>• Consistent and no visible gaps at mitre joints</li> </ul> <b>2) Alignment &amp; Evenness</b> <ul style="list-style-type: none"> <li>• Alignment / level with wall openings</li> <li>• Window leaf and frame corners maintained at right angles</li> </ul> <b>3) Material &amp; Damages</b> <ul style="list-style-type: none"> <li>• No stain marks and any visible damage / defects</li> <li>• Louvre windows with glass panels of correct lengths</li> <li>• Glazing clean, evenly sealed with putty or gasket for aluminium windows</li> </ul> <b>4) Functionality</b> <ul style="list-style-type: none"> <li>• Ease in opening, closing and locking</li> <li>• No sign of rainwater leakage</li> <li>• No squeaky sound during swinging the leaf</li> </ul> <b>5) Accessories Defects</b> <ul style="list-style-type: none"> <li>• Lock sets with good fit and aligned</li> <li>• No sign of corrosion</li> <li>• No missing or defective accessories</li> <li>• Countersunk screws levelled and flushed. No over-tightened screws</li> <li>• Stainless steel screws at hinges for swing window</li> </ul>

	Item*	Standards
6	<b>Components</b>	<p>* Internal fixtures such as wardrobe, kitchen cabinet, vanity top, mirror, bathtub, water closet, shower screen and basin</p> <p>** External fixtures such signage, emergency lightings, railings, unit number plates, lift fittings, letter box, lightings, metal gate etc</p>
6a	<b>General Requirements</b>	<p>1) <b>Joints &amp; Gap</b></p> <ul style="list-style-type: none"> <li>• Consistent joint width &amp; neat joint</li> <li>• No visible gap</li> <li>• Welding joints grounded or flushed</li> </ul> <p>2) <b>Alignment &amp; Evenness</b></p> <ul style="list-style-type: none"> <li>• Level and in alignment</li> </ul> <p>3) <b>Material &amp; Damages</b></p> <ul style="list-style-type: none"> <li>• No stain marks</li> <li>• No visible damage / defects</li> <li>• Consistent in colour tone</li> </ul> <p>4) <b>Functionality</b></p> <ul style="list-style-type: none"> <li>• Functional, secured and safe</li> </ul> <p>5) <b>Accessories Defects</b></p> <ul style="list-style-type: none"> <li>• No missing accessories</li> <li>• No sign of corrosion</li> <li>• No visible damages / defects</li> </ul>

\* An item is deemed to have failed if any one of the standards is not met

## QUALITY STANDARDS FOR ARCHITECTURAL WORKS

### Part 2: Roof

	Item*	Standards
1	Construction	
1a	General Requirements	<ol style="list-style-type: none"> <li>1) <b>Stain / Painting</b> <ul style="list-style-type: none"> <li>• No stain marks</li> <li>• Good paint works</li> </ul> </li> <li>2) <b>Rough / Uneven / Falls</b> <ul style="list-style-type: none"> <li>• Look smooth and with no tool marks</li> <li>• Even and level esp no potential in stripping</li> <li>• Good falls in right direction</li> </ul> </li> <li>3) <b>Crack / Chip / Damage</b> <ul style="list-style-type: none"> <li>• No visible damages / defects</li> </ul> </li> <li>4) <b>Joint / Sealant / Alignment</b> <ul style="list-style-type: none"> <li>• Consistent joint width, neat &amp; aligned</li> </ul> </li> <li>5) <b>Chokage / Ponding</b> <ul style="list-style-type: none"> <li>• No sign of chokage and ponding</li> </ul> </li> <li>6) <b>Construction</b> <ul style="list-style-type: none"> <li>• No sign of leaking</li> <li>• Proper dressing for any protrusion</li> <li>• Neat &amp; secured installation of fixtures</li> </ul> </li> </ol>
1b	Flat Roof	<ol style="list-style-type: none"> <li>1) Ponding less than 3mm</li> <li>2) Surface to level to avoid tripping</li> <li>3) Proper dressing for any protrusion</li> <li>4) Openings to be sealed to prevent pest invasion</li> <li>5) Clean and no stain marks</li> </ol>
1c	Pitched Roof	<ol style="list-style-type: none"> <li>1) No leaking</li> <li>2) No rust or stains</li> <li>3) Good painting to roof structural members</li> <li>4) Roof tiles in alignment</li> <li>5) Openings to be sealed to prevent pest invasion</li> </ol>

	Item*	Standards
1d	Waterproofing (exposed)	<ul style="list-style-type: none"> <li>6) Consistent colour tone</li> <li>7) Proper dressing for any protrusion</li> <li>1) Should be evenly installed, no sharp protrusion</li> <li>2) Complete adhesion to base</li> <li>3) Good laps at joints and proper vertical abutment details</li> <li>4) No leaking and sign of damage to membrane/coating</li> <li>5) Clean and no mortar stains</li> <li>6) No paint defects</li> </ul>
1e	Gutters	<ul style="list-style-type: none"> <li>1) No ponding and chokage</li> <li>2) No cracks, chips and any other visible damages / defects</li> <li>3) RWDP inlet should be lower than the surrounding gutter invert level</li> <li>4) Gutter and RWDP inlet to be covered to prevent chokage where practical</li> <li>5) Clean and no cement stains</li> </ul>

\* An item is deemed to have failed if any one of the standards is not met

## QUALITY STANDARDS FOR ARCHITECTURAL WORKS

### Part 3: External Wall

	Item*	Standards
1	General Requirements	1) <b>Evenness / Roughness</b> <ul style="list-style-type: none"> <li>• Overall surface should be even, not wavy &amp; not patchy</li> </ul> 2) <b>Staining / Painting</b> <ul style="list-style-type: none"> <li>• No visible stain marks</li> <li>• Good paint works</li> </ul> 3) <b>Cracking / Damages</b> <ul style="list-style-type: none"> <li>• No visible damage / defects</li> </ul> 4) <b>Jointing / Alignment</b> <ul style="list-style-type: none"> <li>• External features visually in alignment</li> <li>• Corners of wall maintained at right angles and straight</li> <li>• Consistent joint width, neat &amp; aligned</li> </ul>
2	Plaster Finish	1) As above
3	Tiled Finish	1) Tile joints aligned and between 2-4mm wide unless specified 2) Plumb tolerance and evenness of surface (3mm / 1.2m)
4	Claddings / Curtain Walls	1) Gaps around openings to be properly sealed 2) Joints of regular widths as specified 3) Plumb tolerance as specified 4) Evenness of surface, no dents or scratches 5) Sealant material compatible with cladding
5	Facing Brickwork	1) 10mm joint with pointing 2) Weepholes are provided as specified 3) No mortar droppings and other stains 4) No efflorescence

	Item*	Standards
6	Architectural Coating	1) Substrate - see plaster finish 2) Finished texture and colour to be uniform 3) No paint drips and other stains
7	Painting	1) Substrate <sup>2</sup> see plaster finish 2) Surfaces are evenly painted; no patchiness due to touch up work 3) Good opacity, no discolouring and free from peeling

\* An item is deemed to have failed if any one of the standards is not met

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## QUALITY STANDARDS FOR ARCHITECTURAL WORKS

### Part 4: External Works

	Item*	Standards
1	<b>General Requirements</b> (basis for assessment)	<ol style="list-style-type: none"> <li>1) No stain marks and visible damages / defects</li> <li>2) Finishes must be even, level, align &amp; consistent</li> <li>3) Consistent joints width and neat</li> <li>4) Paintworks with good opacity, no patchiness and brush marks</li> <li>5) Constructed according to Contract Specifications</li> <li>6) Fixtures installed must be safe, secured and functional</li> <li>7) Standards defined under Part 1: Internal Finishes, Part 2: Roof and Part 3: External Wall shall apply for similar items</li> </ol>
1a	<b>Link-Way / Shelter</b>	<ol style="list-style-type: none"> <li>1) <b>Floor</b> as per Internal Finishes - Floor</li> <li>2) <b>Column</b> as per Internal Finishes - Wall</li> <li>3) <b>Ceiling</b> as per Internal Finishes – Ceiling</li> <li>4) <b>Other Finishes</b> as per Internal Finishes – Components</li> <li>5) <b>M&amp;E Fitting</b> as per M&amp;E Works – Part 5 Basic M&amp;E Fittings</li> </ol>
1b	<b>Apron &amp; Drain</b>	<ol style="list-style-type: none"> <li>1) <b>Drain</b> <ul style="list-style-type: none"> <li>• Free flowing and no ponding of water</li> </ul> </li> <li>2) <b>Drain Cover</b> <ul style="list-style-type: none"> <li>• level and do not jolt or rock</li> <li>• Gaps between drain covers and side of drain between 5-10mm wide</li> <li>• Drain grating properly painted</li> </ul> </li> <li>3) <b>Apron 1</b> <ul style="list-style-type: none"> <li>• Bitumen joints with neat edges and sufficient length</li> <li>• No ponding</li> </ul> </li> <li>4) <b>Apron 2</b> – as per Apron 1</li> <li>5) <b>Inspection Chamber</b> <ul style="list-style-type: none"> <li>• Inspection chambers are level with surrounding without depression and with tolerance of</li> <li>• Covers to be level with frames</li> </ul> </li> </ol>

	Item*	Standards
1c	Roadwork & Carpark	<ol style="list-style-type: none"> <li>1) <b>Side Drain</b> as per 1b Apron &amp; Drain</li> <li>2) <b>Road Surface</b> <ul style="list-style-type: none"> <li>• No ponding</li> <li>• Road painting according to drawings; dimensional tolerance of 5mm</li> <li>• Gaps between aeration slabs properly filled up with sand</li> <li>• Aeration slabs stable and not broken</li> </ul> </li> <li>3) <b>Kerbs</b> – as per General Requirements</li> <li>4) <b>Road Sign</b> <ul style="list-style-type: none"> <li>• Provided according to specifications</li> <li>• Firm and secured at base – with footing if required</li> <li>• Metal parts below ground are corrosion treated</li> </ul> </li> <li>5) <b>Lightings</b> – as per 1c Road Sign</li> </ol>
1d	Footpaths & Turfing	<ol style="list-style-type: none"> <li>1) <b>Footpath</b> as per Internal Finishes - Floor</li> <li>2) <b>Turfing</b> <ul style="list-style-type: none"> <li>• No depression or bald patches</li> <li>• Turfing done evenly, no dead grass or weeds</li> </ul> </li> <li>3) <b>Lightings</b> as per 1c Road Sign</li> <li>4) <b>Fencing &amp; Railing</b> <ul style="list-style-type: none"> <li>• As per 1c Road Sign</li> <li>• Wire fencing is PVC covered</li> <li>• Footings provided for supports</li> <li>• Vertical tolerance (4mm / 1.2m)</li> </ul> </li> <li>5) <b>Other Fixtures</b> <ul style="list-style-type: none"> <li>• as per Internal Finishes - Components</li> </ul> </li> </ol>
1e	Playground	<ol style="list-style-type: none"> <li>1) <b>Floor</b> as per Internal Finishes - Floor</li> <li>2) <b>Permanent Fixture1</b> as per Internal Finishes - Components</li> <li>3) <b>Permanent Fixture2</b> as per Internal Finishes - Components</li> <li>4) <b>Lightings</b> as per 1c Road Sign</li> <li>5) <b>Signage</b> as per Internal Finishes - Components</li> </ol>



	Item*	Standards
1f	Court	<ol style="list-style-type: none"> <li>1) Floor 1 as per Internal Finishes - Floor</li> <li>2) Floor 2 as per Internal Finishes - Floor</li> <li>3) Signage as per Internal Finishes - Components</li> <li>4) M&amp;E Fitting as per M&amp;E Works – Part 5 Basic M&amp;E Fittings</li> <li>5) Permanent Fixture as per Internal Finishes - Components</li> </ol>
1g	Fences & Gates	<ol style="list-style-type: none"> <li>1) Fence Left as per 1d – item 4)</li> <li>2) Gate as per Internal Finishes - Components</li> <li>3) Fence Right as per 1d – item 4)</li> <li>4) M&amp;E Fitting as per M&amp;E Works – Part 5 Basic M&amp;E Fittings</li> <li>5) Signage as per Internal Finishes - Components</li> </ol>
1h	Swimming Pool	<ol style="list-style-type: none"> <li>1) Side Drain as per Internal Finishes - Floor</li> <li>2) Foot Path 1 as per Internal Finishes - Floor</li> <li>3) Floor Path 2 as per Internal Finishes - Floor</li> <li>4) M&amp;E Fitting as per M&amp;E Works – Part 5 Basic M&amp;E Fittings</li> <li>5) Other Fixture as per Internal Finishes - Components</li> </ol>
1i	Club House	<ol style="list-style-type: none"> <li>1) External Wall 1 as Part 3 External Wall</li> <li>2) External Wall 2 as Part 3 External Wall</li> <li>3) External Wall 3 as Part 3 External Wall</li> <li>4) External Wall 4 as Part 3 External Wall</li> <li>5) Apron &amp; Drain as per 1b</li> </ol>

	Item*	Standards
1j	Guard House	1) External Wall 1 as Part 3 External Wall 2) External Wall 2 as Part 3 External Wall 3) Apron & Drain as per 1b 4) Gantry as per Internal Finishes - Components 5) Other Fixture as per Internal Finishes - Components
1k	Electrical Substation	1) External Wall 1 as Part 3 External Wall 2) External Wall 2 as Part 3 External Wall 3) External Wall 3 as Part 3 External Wall 4) External Wall 4 as Part 3 External Wall 5) Apron & Drain as per 1b

\* An item is deemed to have failed if any one of the standards is not met

## QUALITY STANDARDS FOR ARCHITECTURAL WORKS

### Part 5: Material & Functional Tests

	Item*	Standards
1	Plastering	1) Use Pre-packed Plaster only.
2	Field Window Water-tightness Test	1) No sign of leakage using BCA's Window Water-tightness Test method. Leakage is defined as "any appearance of uncontrolled water, other than condensation, on the indoor face of any part of the wall & window".  2) BCA's Water-tightness Test parameters:  Water intensity: 300mm/hr 1 litre/min/m of joint Wind Pressure: 240 Pa Nozzle inclination: 90° to window 1 sample = 2m length of joint Spray duration: 10 minutes
3	Wet Area Water-tightness test (i.e. Bathrooms, toilets & flat roof)	1) No sign of leakage after ponding wet areas over a minimum period of 24 hrs.  2) Ponding with final finish in-place
4	Internal wet area waterproofing process	1) According to approved method statement, shop drawings and related BCA's Good Industry Practices guides
5	Pull-off test (POT) for internal wall tiles	1) Minimum tensile strength of 0.15 N / mm <sup>2</sup>

For the assessment of the **field window water-tightness test**, the number of points shall be awarded based on the percentage of non-compliance as tabulated in the table below :

Points Awarded for BCA Field Test (80%)	Points Awarded for Self-Testing (20%)	Percentage of non-compliance
8	2	0%
(15-x)* 8/15	(15-x)* 2/15	0% < x < 15%
0	0	≥ 15%

Note: No points shall be given if test is not carried out.  
"x" is the percentage of samples failed.

For the assessment of the **wet area water-tightness test**, the number of points shall be awarded based on the percentage of non-compliance as tabulated in the table below :

<i>Points Awarded for BCA Field Test (80%)</i>	<i>Points Awarded for Self-Testing (20%)</i>	<i>Percentage of non-compliance</i>
4	1	0%
$(2-x) * 4/2$	$(2-x) * 1/2$	$0\% < x < 2\%$
0	0	$\geq 2\%$

Note: No points shall be given if test is not carried out.  
"x" is the percentage of samples failed.

\* An item is deemed to have failed if any one of the standards is not met.

[DRAFT]

## QUALITY STANDARDS FOR M&E WORKS

### Part 1: Electrical Works

	Item*	Standards
1	<b>Embedded Conduits</b>	
	Installation	1) Conduit ends properly protected 2) Correct type of conduit installed as per approved sample 3) Conduit boxes clean and open end plugged / temporarily protected 4) Coupling joints fastened 5) Bonding to earth provided for all metallic conduits
	Secured Properly	6) Conduits properly secured
	Bent Properly	7) Conduits properly bent without distortion and damage
	No Visible Damage	
2	<b>Main Cables</b>	
	Properly Supported	1) Cables adequately supported
	Fire Stop	2) Fire stops properly installed
	Spacing & Secure of Cable	3) Adequate spacing of cables
	No Visible Damage	
3	<b>Surface Conduits</b>	
	Installation	1) Conduit ends properly connected 2) Metallic conduits properly earthed 3) Correct type of conduit as per approved sample 4) Conduits properly bent without distortion and damage
	Support	5) Support / brackets rigidly fitted
		6) Screw used properly fastened
	Fire Stop	7) Fire stops properly installed

	Item*	Standards
	No Visible Damage	8) Conduits and accessories properly painted
<b>4</b>	<b>Cable Tray, Ladder And Trunking</b>	
	Installation	1) Joints protected against corrosion 2) Correct type of material used as per approved sample 3) Metallic trunking properly earthed
	Support	4) Support / brackets rigidly fitted 5) Screw used properly fastened
	Fire Stop	6) Fire stops properly installed
	No Visible Damage	
<b>5</b>	<b>Distribution Board</b>	
	Circuit Diagram	1) Circuit diagram provided 2) Proper labelling for panel
	Cable Termination /Earthing	3) Suitable cable termination provided 4) All live parts to be non-accessible 5) All exposed metal parts effectively earthed
	No Visible Damage	

\* An item is deemed to have failed if any one of the standards is not met

**Part 2: Quality Standards for ACMV Works**

	Item*	Standards
<b>1</b>	<b>Ductwork</b>	
	Location & Installation	1) Location and ductwork installed according to approved shop drawings
	Paints	2) Exposed ductwork and hanger properly painted to approved colour code
	Support	3) Ductwork properly supported
	No Visible Damage	
<b>2</b>	<b>Fire-Rated Ducts</b>	
	Location & Installation	1) Location and ductwork installed according to approved shop drawings 2) No hanging of other services
	Access Panel	3) Fire-resistant sealed access panel provided to fire-rated enclosure of equipment for maintenance
	No Visible Damage	
<b>3</b>	<b>Flexible Ducts</b>	
	Location & Installation	1) Location & installation as per approved shop drawings
	Support	2) Duct properly supported
	Sufficient Radius	3) Bending radius sufficiently wide to prevent tensioning and restriction of the throat
	No Visible Damage	
<b>4</b>	<b>Flexible Connectors</b>	
	Location & Installation	1) Installed as per approved shop drawings 2) Provided at ductwork, between AHU/FCU/Fans and related ductwork
	Length Limit	3) Within 50 – 250 mm length
	No Visible Damage	

	Item*	Standards
5	<b>Dampers</b>	
	Location & Installation	1) Location of dampers as per approved shop drawings 2) Dampers / splitter dampers can be adjusted freely between the open and close position
	Access Door	3) Access doors provided to all dampers
	No Visible Damage	
6	<b>Fire Dampers</b>	
	Location & Installation	1) Location of dampers as per approved shop drawings 2) Installed as per CP13 and no gap around fire dampers 3) Dampers in open position and held in position by fusible link.
	Access Door	4) Access doors provided to all dampers according to CP13
	No Visible Damage	
7	<b>Split Unit/Window Air Conditioner</b>	
	Installation	1) Units are levelled when placed on plinth 2) Drainage provided/units slightly tilted for condensation 3) Drain hose connected to the drain pipe 4) Cool air is not blocked by wall, beam, shelving or other built-in furniture in the room
	Seal Penetration	5) Proper sealant of wall or roof opening after pipes are fixed
	No Leakage	6) No sign of leakage from pipes
	No Visible Damage	



	Item*	Standards
8	<b>Air-Con Comfort</b>	
	Temperature	1) Room temperature between 23°C - 25°C or according to specification
	Air Flow	2) Room airflow rate not exceeding 0.25 m/s or according to specification
	Relative Humidity	3) Room relative humidity not more than 60% or according to specification
9	<b>Air Handling Unit</b>	
	Location & Installation	1) Unit location & pipe layout installed as per approved shop drawings 2) Inspection access door for fan, coil, motor and filter 3) All metal parts properly earthed 4) Smoke detector installed at the return air stream 5) Name plate installed with manufacturer's name, serial number and model number
	Support	6) Pipe / duct from AHU must be supported
	No Visible Damage	
10	<b>Pump</b>	
	Location & Installation	1) Location & pipe layout installed as per approved shop drawings 2) Pump & motor assembly properly installed on inertia block & spring isolator 3) Guard provided to exposed shafts, coupling & moving parts 4) Name plate installed with manufacturer's name, serial number and model number
	Electrical Termination	5) No bad electrical termination
	No Visible Damage	

	Item*	Standards
11	<b>Cooling Tower</b> Self-Earthing System	1) Cooling tower completed with self-earthing system for connection to building lightning protection system
	Location & Installation	2) Name plate installed with manufacturer's name, serial number and model number 3) Location & pipe layout installed as per approved shop drawings
	No Visible Damage	4) Cooling tower clear of all debris
12	<b>Pipework</b> <i>including Chilled water, Hot water, Steam, Condenser water, Condenser drain, Cold Water make-up, water treatment and refrigerant</i>	1) Pipe works installed as per approved shop drawing & specifications
	Paints & Support	2) Pipe work provided with drains at each low point and automatic air vents with manual isolating valve at each high point
	Fire Stop	3) Fire stop for passage of pipes at opening for fire resistant walls and floor 4) Properly painted and supported
	No Visible Damage	
13	<b>Chiller</b> Location & Installation	1) Location & pipe layout installed as per approved shop drawing 2) Chiller to be levelled when placed on plinth or vibration isolators 3) Chiller fixed securely in position 4) Correct model, make & capacity
	Pipe Support & Label	5) Pipes supported properly by hangers or brackets 6) Pipe connections follow specified flow direction

	Item*	Standards
	No Leakage	7) No sign of leakage
	No Visible Damage	

\* An item is deemed to have failed if any one of the standards is not met

[None]

**Part 3: Quality Standards for Fire Protection Works**

	Item*	Standards
1	<b>Wet / Dry Riser</b>  Landing Valve	1) Landing valve must be accessible 2) Landing valve strapped & padlocked 3) Labelling for riser door 4) Landing valve painted red for wet riser / yellow for dry riser 5) Automatic air release valve provided at highest point of rising main
	Pipe & Pipe Support	6) Riser pipes properly supported 7) Labelling & painting for riser pipe 8) Bonding to earth provided for rising main
	Wall/Floor Penetration	9) Proper wall / floor penetration
	No Visible Damage	
2	<b>Sprinkler</b>  Location & Installation	1) Location, sprinkler and pipe layouts and sizes installed as per approved shop drawings 2) Double layer sprinkler for false ceiling >800mm in depth 3) No obstruction and painting to sprinkler heads 4) Correct sprinkler heads used in correct locations
	Pipe Support	5) Pipe work properly supported
	Wall/Floor Penetration	6) Proper wall / floor penetration
	No Visible Damage	

	Item*	Standards
<b>3</b>	<b>Fire Alarm</b>	
	Location & Installation	1) Location of fire alarm panel, break glass & bell is correct 2) Location & spacing of detectors are correct 3) Fire alarm wiring in conduit (GI type)
	Paints	4) Panel and conduit properly painted
	Fire Alarm Zoning Diagram	5) Fire Alarm Zoning diagram provided near panels / sub-panels
	No Visible Damage	
<b>4</b>	<b>Hosereel</b>	
	Location & Installation	1) Location of hosereel as per approved shop drawings 2) Hosereel cabinet properly labelled 3) Hosereel pipe properly fixed with hangers & brackets 3) Hosereel operation instruction properly marked on hosereel drum or door
	Paints	4) Correct & proper painting for hosereel
	No Visible Damage	

\* An item is deemed to have failed if any one of the standards is not met

**Part 4: Quality Standards for Plumbing & Sanitary Works**

	Item*	Standards
1	<b>Concealed Pipes</b>	
	Location & Installation	1) Pipes properly supported, bent without distortion, kink and damage 2) Pipe and fitting ends properly capped 3) Proper joints 4) Materials used are of approved types
	Alignment	5) Vertically or horizontally aligned
	No Visible Damage	
2	<b>Exposed Pipes</b>	
	Location & Installation	1) Location of pipes installed and labelled as per approved shop drawing 2) Pipes properly supported, bent without distortion, kink and damage 3) Joints are watertight 4) Pipe & fitting ends properly capped 5) No potable water pipes below non-potable water pipes 6) Materials used are of approved types
	Alignment	7) Horizontally and vertically aligned and parallel to building surface 8) Inclined pipes laid to proper gradients 9) Plumb < 3mm per 1m height
	Clearance	10) Do not cause obstruction / pose safety hazard at public area 11) Sufficient clearance between installed pipes / ceiling and pipes / wall for accessibility 12) Service pipe duct accessible
	No Visible Damage	

	Item*	Standards
3	<b>Water Tank</b>  Location & Installation	1) Location, type & capacity as per approved shop drawing and specification  2) All openings properly covered and secured  3) Joints & pipe connections are watertight.  4) Not located below non-potable water pipes  5) Corrosion-resistant external cat ladders provided for large water tank
	Netting	6) Netting properly fitted for overflow / warning / vent pipes
	Clearance	7) Accessible for maintenance. Minimum clearance of 600mm all rounded the water tank
	No Visible Damage	8) No visible damage  9) Clean & free from debris
4	<b>Pump &amp; Motor</b>  Location & Installation	1) Location & type as per approved shop drawing  2) No noticeable vibration & noise from pump / motor  3) Test certificate for alignment of Pump & Motor from manufacturer
	Electrical Termination	4) No bad / loose electrical terminations
	No Visible Damage	

\* An item is deemed to have failed if any one of the standards is not met

**Part 5: Quality Standards for Basic M&E Fittings**

	Item*	Standards
1	General Requirements	1) <b>Joints &amp; Gap</b> <ul style="list-style-type: none"> <li>• No visible gap</li> <li>• Consistent joint width &amp; neat</li> </ul> 2) <b>Alignment &amp; Evenness</b> <ul style="list-style-type: none"> <li>• Aligned, leveled and straight</li> </ul> 3) <b>Material &amp; Damages</b> <ul style="list-style-type: none"> <li>• No visible damage / defects</li> <li>• No stain marks</li> <li>• Securely fixed</li> <li>• Consistent colour tone</li> </ul> 4) <b>Functionality</b> <ul style="list-style-type: none"> <li>• Functional and safe</li> </ul> 5) <b>Accessories, Defects</b> <ul style="list-style-type: none"> <li>• No missing accessories</li> <li>• No visible damage / defects</li> </ul>
2	Plumbing & Sanitary Fittings	
2a	Gully & Floor Trap	1) No damage or chokage 2) Must be securely fixed 3) Trap's top lower than the surrounding floor level
2b	Pipes	1) Visually aligned horizontally, vertically and parallel to building surface 2) Inclined pipes laid to proper gradients 3) No leakage at joints 4) Plumb < 10mm / storey height 5) Brackets firmly secured & adequately spaced 6) If painted, no drippings & with good opacity
2c	Fittings	1) Firmly secured & joints properly sealed & pointed 2) No leakage at joints



	Item*	Standards
		<ul style="list-style-type: none"> <li>3) No chipping or cracks</li> <li>4) No paint drops or mortar droppings</li> <li>5) Fittings in working condition</li> <li>6) Accessible for maintenance</li> <li>7) Do not cause obstruction / pose as safety hazard (e.g. sprinkler head to point inward).</li> <li>8) No sediments / particles found in water collected at terminal water fittings (remove aerator &amp; showerhead).</li> <li>9) All sensor covers properly sealed against water seepage</li> <li>10) Materials used are of approved types</li> </ul>
3	<b>M&amp;E Fittings</b>	<p>e.g. power point, telephone point, air-con diffuser, fan coil unit, lighting, smoke alarm, sprinkler heads, CCTV camera, etc.</p>
3a	<b>Installation</b>	<ul style="list-style-type: none"> <li>1) Fittings must be aligned and location as per approved drawings.</li> <li>2) No stains</li> <li>3) Neat patch-up for pointing / penetration</li> </ul>
3b	<b>Safety</b>	<ul style="list-style-type: none"> <li>1) No exposed wiring within reach</li> </ul>
3c	<b>Damages</b>	<ul style="list-style-type: none"> <li>1) No visible damage</li> </ul>

\* An item is deemed to have failed if any one of the standards is not met

## Defects Grouping Guide for Assessment of Internal Finishes

Element	Defects Grouping	Defects Description
Floor Wall	Finishing	Stains, Painting / Coating Defects, Tonality, Patchy & Roughness
	Alignment & Evenness	Alignment, Unevenness, Squareness
	Crack & Damages	Crack, Chipping, Dent, Scratches
	Hollowness / Delamination	
	Jointing	Joints, Pointing
Ceiling	Finishing	Stains, Painting / Coating Defects, Patchy
	Alignment & Evenness	
	Crack & Damages	Crack, Chipping, Dent, Scratches
	Roughness	
	Jointing	Joints, Pointing
Door Window Component M&E Fittings	Joints & Gap	Joints, Gap etc too big, Inconsistent, Improper Seal
	Alignment & Evenness	
	Material & Damages	Crack, Chipping, Dent, Scratches, Defects, Finishing, Tonality
	Functionality	Movement, Functionality, cannot be opened or closed properly,
	Accessories Defects	Missing items, Improper Fixing, Stains, Corrosion, Other damages

## BUILDING GROUPING GUIDE

<b>CAT A</b> Commercial, Industrial, Institution & others	<b>CAT B</b> Private Housing, Commercial, Institution, Industrial & others	<b>CAT C</b> Public Housing	<b>CAT D</b> Landed Housing
<p><b><u>In General</u></b> : All types of building that has a central cooling system</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>Bank</li> <li>Office Building</li> <li>Shopping Complex</li> <li>Hotel</li> <li>Supermarket</li> <li>Airport</li> <li>Hospital</li> <li>University</li> <li>Regional Library</li> <li>Conference Hall</li> <li>Arts and Cultural Centre</li> </ul> <p>Mixed Development with Central Cooling</p>	<p><b><u>In General</u></b> : All types of building without central cooling system</p> <p>e.g.</p> <ul style="list-style-type: none"> <li>Condominium</li> <li>Apartments</li> <li>School</li> <li>Factory</li> <li>Warehouse</li> <li>Mixed Development without Central Cooling</li> </ul>	<p>HDB Public Housing</p>	<ul style="list-style-type: none"> <li>Bungalow</li> <li>Semi-Detached</li> <li>Terrace House</li> <li>Cluster Housing</li> </ul>

Note: The above is only meant to be a general guide in determining the Category of project. The actual grouping might vary depending on the project details in the application.

# CONQUAS<sup>®</sup> Forms

## To Initiate CONQUAS<sup>®</sup> Process

For BCA to proceed with the CONQUAS<sup>®</sup> assessment, the applicant (Developer/Builder) can download the CONQUAS<sup>®</sup> application form and submit the completed form to BCA, Quality & Certification Department.

- CONQUAS<sup>®</sup> Application Form (Acrobat pdf file, 150 KB)

Upon payment of CONQUAS<sup>®</sup> assessment fees, the applicant can request for a briefing to be conducted at the project site office.

The purpose of this briefing is to provide essential information on the operational expectation and assessment details such as total samples to be collected for the project, logistic requirements for the assessment and booking of assessment schedule etc for the Builder. The Builder is encouraged to gather their project team and subcontractors to attend this briefing.

## During Assessment

Details of assessment are provided after each assessment . The Builder can use the information provided to identify areas for improvement.

**For Release of Interim Structural Score** , the following is required:-

- a) All structural works at the project must be completed.
- b) Completion of all “CONQUAS<sup>®</sup> STRUCTURAL ASSESSMENT” including “STEEL STRUCTURAL STEEL ASSESSMENT Samples” (If applicable)
- c) Submit “CONCRETE CUBE AND STEEL REINFORCEMENT QUALITY FORM A” (1 page in Acrobat pdf file, 150 KB)
- d) Submit “SUMMARY OF WELDING TEST RECORDS FORM C” (1 page in Acrobat pdf file, 150 KB) -- Applicable only for projects with Steel Structure Assessment inspected under CONQUAS<sup>®</sup> assessment
- e) Original forms duly completed with all required information and endorsed by QP/PE are to be submitted

The Interim Structure Score can only be released once the submissions above have been verified to be in order.

## Completion of Assessment



Upon completion of CONQUAS<sup>®</sup> assessment and submission of relevant forms, BCA will issue the CONQUAS<sup>®</sup> certificate.

**For Release of Final CONQUAS<sup>®</sup> Score**, the following is required:-

- a) Completion of all “ARCHITECTURAL & M&E ASSESSMENT SAMPLES” e.g.: M&E Works, External walls, External works, Roof whichever comes first.
- b) Submit “MATERIAL & FUNCTIONAL TEST DECLARATION FORM B” (1 page in Acrobat pdf file, 150 KB)
- c) Submit “M&E WORKS PERFORMANCE ASSESSMENT FORM D” (2 pages in Acrobat pdf file, 150 KB) -- For CAT A and B projects only.
- d) Original forms duly completed with all required information and endorsed by QP/PE are to be submitted
- e) Compile all the above Declarations and Test Records for the project in a **SINGLE** submission and submit to Quality & Certification Department with a covering letter providing the contact person and telephone number should there be any clarification required.
- f) For printing of the CONQUAS<sup>®</sup> score certificate, please complete the “DRAFT CERTIFICATE FORM E” (1 PAGE in Acrobat pdf file, 150 KB) with all the necessary project information. Both Developer and Builder endorsement are required to confirm that information provided are correct for printing of the certificate.



## CONQUAS® APPLICATION FORM

This application form is to be submitted, together with the Project information sheets (3 sheets) duly completed and all required documents listed as per checklist to:

Deputy Director  
Quality & Certification Department  
Building and Construction Authority  
200 Braddell Road  
Singapore 579700

We, \_\_\_\_\_ (name of firm) would like  
to engage the Building and Construction Authority to assess the project

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

We understand that an assessment fee will be chargeable for engaging such service. We fully understand and agree to the contents of the CONQUAS® Terms & Conditions. Upon acceptance, payment will be made to **Building and Construction Authority**.

\_\_\_\_\_  
Name & Signature of Applicant

\_\_\_\_\_  
Date

\_\_\_\_\_  
Designation of Applicant

\_\_\_\_\_  
Company's Stamp

For Official Use Only:

Registration No.	Project Category	Project Classification	Project Zone
	A / B / C / D	Public / Private	



# CONQUAS®

## PROJECT INFORMATION (Sheet 1)

### PROJECT DETAILS

Description of Project:			
Project Name: (Short)**			
Contractor:			
Developer:			
Developer A Subsidiary of A Major Developer, please state, if any:			
Total Approved Gross Floor Area (m <sup>2</sup> ):		Tender Call Date:	
Project Address/ Location:			
Super Structure Start Date:		Super Structure Completion Date:	
Architectural Works Start Date:		Architectural Works Completion Date:	
Project Start Date:		Project Completion Date:	
Total Cost of Structural Work (A+B+C+D):		Cost of R.C. Work (A):	
Cost of Structural Steelwork (excl. cost of rebar) (B):		Cost of Prestressed Concrete Work (C):	
Total Structural Steelwork Tonnage:		Cost of Precast Concrete Works (D):	
No. of Blocks/Plots/Units:		Target Score Set by Developer / Public Agency, if any:	
Bonus Threshold Score (for BSCQ only):		Discount Threshold Score (For BSCQ only):	
Expected 1 <sup>st</sup> Hand-Over Inspection Date <b>OR</b> 1 <sup>st</sup> R.I. Inspection Date:		Total Contract Sum (excl. GST):	
Total No. of Wet Areas: (e.g. Toilets / Bathrooms)		Total No. of Window Panel:	

\*\* Please ensure that the short name does not exceed 30 characters

## CONQUAS<sup>®</sup> PROJECT INFORMATION (Sheet 2)

Please tick the boxes for the following items if available in the project:

Linkway / Shelter	<input type="checkbox"/>	Apron & Drain	<input type="checkbox"/>
Roadwork & Carpark	<input type="checkbox"/>	Footpath & Turfing	<input type="checkbox"/>
Playground	<input type="checkbox"/>	Court	<input type="checkbox"/>
Fencing & Gate	<input type="checkbox"/>	Swimming Pool	<input type="checkbox"/>
Club House	<input type="checkbox"/>	Guard House	<input type="checkbox"/>
Electrical Substation	<input type="checkbox"/>		

Flat Roof	<input type="checkbox"/>	Steel Metal Decking	<input type="checkbox"/>
Pre-Packed Plaster**	<input type="checkbox"/>	Steel Roof Truss	<input type="checkbox"/>
Central Air Conditioning System ^	<input type="checkbox"/>	Precast Components #	<input type="checkbox"/>

^ (Tick only if comprise cooling tower, chiller & AHU)

Type of External Wall System: Brickwall / RC Wall / Others\*, please state: \_\_\_\_\_

*\*Delete where inapplicable*

\*\* Tick only if pre-packed plaster mix is used for **ALL** plastering works.

# If project has precast concrete components, please provide the following information:

Total Concrete Volume (including total precast concrete volume) for Structural Works: \_\_\_\_\_

Total Precast Concrete Volume for Structural Works: \_\_\_\_\_

Type of Elements Precasted: \*Column / Wall / Beam / Slab / Façade / Household Shelter / Fascia / Parapets / Pilecaps / Staircase / Refuse Chute / Others \*: \_\_\_\_\_

*\*Delete where inapplicable*

### DETAILS OF PROJECT TEAM

Architect:	
Civil & Structural Engineer:	
M & E Engineer:	
Quantity Surveyor:	

## CONQUAS<sup>®</sup> PROJECT INFORMATION (Sheet 3)

Names of Contact Person for CONQUAS#	Handphone no.	Email Address

# please furnish at least two (2) contact person

Site Phone No:	
Site Fax No:	
Company Email Address:	

Expected 1<sup>st</sup> Structural Assessment Date: \_\_\_\_\_  
(for super structure)

### OTHER DETAILS

Type of Development:	Commercial / Industrial / Institution / Condominium / Mixed Development / Public Housing / Landed Properties / Others,*  Please state: _____
Reasons for Application:	Contract Requirement / BSCQ / Others, *  Please state: _____
Project Built On:	HDB land / URA land / JTC land / Others,*  Please state: _____

\* Delete where inapplicable

## CONQUAS<sup>®</sup>

### CHECKLIST OF DOCUMENTS TO BE ENCLOSED WITH APPLICATION

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**Important Note:**

Please ensure the following documents are submitted together with this Application Form. Failure to do so will render this application null and void.

1. Written Permission / Provisional Permission from URA stating the approved Gross Floor Area (GFA) of development **OR** Architect's declaration of GFA for the development
2. Letter of Tender Invitation of Project / Tender Notices / GeBiz Notices (that provides clear indication of when project tender was called)
3. Letter of Award of Project
4. Project Brochure (if available)
5. Key Plan of Project
6. Site Location Map

[DRAFT]

Details filled by (Name / Designation)	Tel & Email Address	Signature & Date

## BCA CONQUAS® SCHEME

### LIST OF OFFICERS ON OPERATIONAL MATTERS

Name of Officer	Contact No.	Enquiries on
Serena Ho-Chua* Jamilia Bte Jasman* Neo Ah Hui*	6730 4477 6730 4518 6730 4485	<ul style="list-style-type: none"> <li>• CONQUAS® Application;</li> <li>• Arrangement of CONQUAS® Assessments</li> </ul>
Simon Yee*	6730 4482	<ul style="list-style-type: none"> <li>• Issuing &amp; printing of CONQUAS® Certificates;</li> <li>• Material &amp; Functional Tests Submission;</li> <li>• M&amp;E Works Assessment</li> </ul>
Ken Ho*	6730 4496	<ul style="list-style-type: none"> <li>• Bonus Scheme for Construction Quality (BSCQ) ;</li> <li>• Construction Excellence Awards (CEA)</li> </ul>
Linn Naing Win*	6730 4488	<ul style="list-style-type: none"> <li>• Pull-Off-Test for Internal Wall Tile;</li> <li>• Non-Destructive Test (NDT)</li> </ul>
Wong Chee Hong*	6730 4492	<ul style="list-style-type: none"> <li>• Water-tightness test for Windows &amp; External Wall Joints;</li> <li>• Wet Area Water Ponding Test;</li> <li>• Waterproofing Works In-Process Inspection;</li> <li>• CONQUAS® Training</li> </ul>
Philip Wong*	6730 4484	<ul style="list-style-type: none"> <li>• Structural Steel Works Assessment;</li> <li>• Precast Concrete Works Assessment</li> </ul>
Goh Thiam Lai* Linn Naing Win*	6730 4497 6730 4488	<ul style="list-style-type: none"> <li>• Quality Mark for Good Workmanship Certification Scheme;</li> </ul>

**\*If you are unable to reach any of the above officers, please call the CONQUAS® Enquiry line at Tel: 6730 4400 for all general enquiries.**

**CONQUAS®**  
**CONSTRUCTION QUALITY ASSESSMENT SYSTEM**  
**TERMS & CONDITIONS**

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**INTRODUCTION**

The Construction Quality Assessment System or CONQUAS® was developed by the Building and Construction Authority (BCA) from discussion with the major public sector agencies, developers and contractors to measure the quality level achieved in a completed project.

CONQUAS® is applicable only for new building projects which are at the start of construction works. It includes scoring the structural, architectural, M&E and external works. BCA will assess the structural works and M&E works during construction and the architectural, M&E works and external works after the completion of project. CONQUAS® is not applicable to demolition, upgrading, addition and alteration, renovation and conservation projects

Any application for CONQUAS® shall be an offer by the Applicant on the terms and conditions hereinafter stated which will constitute an agreement between the Applicant and BCA on acceptance by the Building and Construction Authority by a notification sent to the Applicant.

**Private Projects:**

Applications are welcome for projects with a minimum contract value of S\$5 million or projects with CONQUAS® requirement under URA/HDB/JTC/SLA land sales agreement. BCA will consider applications for projects where the contract value is less than S\$5 million on a case-by-case basis.

**Public Projects:**

Applications are for projects which are subjected to Bonus Scheme for Construction Quality (BSCQ).

**CONQUAS®**  
**CONSTRUCTION QUALITY ASSESSMENT SYSTEM**  
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**1. Glossary**

1.1. The following words and expressions have the following meanings, unless they are inconsistent with the context:

APPLICANT - the developer or contractor of a building development.

ASSESSMENT - the scoring of the standard of construction workmanship of the Project based on the objective criteria as set out in the Manual using the Sampling System.

ASSESSMENT PROCESS – the conduct of briefing and Assessment

ASSESSORS - BCA officers or any other persons authorised by BCA to carry out the Assessment of the Project.

BSCQ - Bonus Scheme for Construction Quality.

BCA – Building and Construction Authority.

CONQUAS® - Construction Quality Assessment System.

CONQUAS® COMPONENTS SCORES - the final score given to a Project on completion of the Assessment.

CERTIFICATE - document issued on completion of the Assessment of the Project stating the final CONQUAS® components scores of the Project.

GFA - Gross Floor Area.

INTERIM REPORT - document stating provisional score of the Project achieved after completion of the structural works assessments.

MANUAL - a compilation of the CONQUAS® criteria used in assessing the construction workmanship of the Project as set out in "CONQUAS: THE BCA CONSTRUCTION QUALITY ASSESSMENT SYSTEM".

PERIODIC ASSESSMENT - scoring of the standard of construction workmanship carried out from time to time by way of site visits and inspections by the Assessors during the construction of the Project.

PROJECT - the building development in respect of which the Assessment is sought.

SAMPLING SYSTEM - the selection of locations for scoring the standard of the construction workmanship of the Project as provided for in the Manual.

**CONQUAS®**  
**CONSTRUCTION QUALITY ASSESSMENT SYSTEM**  
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**2. Agreement for Assessment**

2.1 Subject to the terms and conditions hereinafter set out, BCA shall make an Assessment of the quality of the construction workmanship of the Project according to the Sampling System and criteria in the Manual and on completion of the Assessment BCA shall issue a Certificate to the Applicant stating the CONQUAS® score obtained by the Project.

**3. Scope of Assessment**

3.1 There shall be no rescoring either in respect to any of the periodic assessments carried out by the Assessors or of the Assessment as a whole.

3.2 BCA may, on the request of the Applicant, carry out an assessment on any show flat or showroom of the Project and such assessment shall not be included in the final scoring of the Project.

**3. Limitation on Liability**

4.1 While every effort is made to assure that consistent standards are used in the carrying out of the Assessment, it should be noted that the Assessment is done by way of a Sampling System and there may be deviations or variations in the determination of the CONQUAS® score. BCA will not be liable for any loss or damage suffered by reason of such deviation or variation.

4.2 The Certificate stating the CONQUAS® score obtained by the Project issued on completion of the Assessment of the Project is a representation by BCA to the Applicant only. BCA will not be liable for any damage caused by reliance on any representation made by the Applicant to a third party in respect to the CONQUAS® score. In the event that any claim or dispute should arise as a consequence or relating to the Assessment by BCA, no claim shall be made by the Applicant against BCA.

4.3 BCA will not be liable for any damage to the buildings in the Project which may be caused by the Assessors in the course of any assessment.

**5. Fees**

5.1 The fees for the Assessment shall be payable according to the fee structure specified in Schedule A which is based on the GFA of the Project.

5.2 All fees shall be payable in full on acceptance of the application by BCA.

5.3 Payment must be paid to BCA within 30 days after the date of issue of invoice.

5.4 GST is chargeable on the fees payable.



**CONQUAS®**  
**CONSTRUCTION QUALITY ASSESSMENT SYSTEM**  
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- 5.5 Fees paid are refundable in the event that the Applicant withdraws the application (for private projects only) at any time before the commencement of the Assessment Process. An administrative charge may be levied.
- 5.6 In the event that the Applicant withdraws the application at any time after the commencement of the Assessment process, any fees already paid will not be refundable.
- 5.7 BCA reserves the right to revise the fee structure from time to time. The revised fee structure will only apply to Applicants who submit applications following the effective date of the fee revision.
- 5.8 A computation of fees for the Assessment by BCA is conclusive and binding on the Applicant.

**6 Rights and Duties of Applicant**

- 6.1 The Applicant must submit the application form and terms & conditions (page 1 to 14) for the Assessment before the commencement of construction works.
- 6.2 The Applicant shall make available to BCA a copy of the letter of award and the necessary documents of the Project as specified in Page 5.
- 6.3 The Applicant shall render his full cooperation to BCA and its officers in the performance of the Assessment:
  - 6.3.1. the Applicant shall comply with all requirements, procedures, directions and requests of BCA;
  - 6.3.2. the Applicant shall procure the cooperation of its employees and servants in complying with the requirements, procedures, directions and requests of BCA.
- 6.4 The Applicant shall appoint a Co-ordinator to liaise with BCA for the duration of the Assessment:
  - 6.4.1. the Co-ordinator shall inform BCA of the progress at each different stage of the construction;
  - 6.4.2. the Co-ordinator shall arrange for regular assessments on site to be carried out.
- 6.5 The Applicant shall allow BCA and its officers full access to the Project site for the purposes of the Assessment and shall be responsible for the safety of the aforementioned while on site.
- 6.6 The Applicant shall give BCA at least 7 days written notice in arranging for an assessment on site.

**CONQUAS®**  
**CONSTRUCTION QUALITY ASSESSMENT SYSTEM**  
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- 6.7 The Applicant shall arrange for prompt payment of the Assessment Fees.
- 6.8 The Applicant shall arrange for the site supervisors to assist in the setting up of instruments necessary for the Assessment.
- 6.9 The Applicant shall provide and maintain unhindered and safe access to facilitate the inspection works at the locations and levels selected for the assessment during construction and at completion, including but not limited to the provision of special ladders, platforms, ramps or scaffolding as required by the Assessors.
- 6.10 The Applicant shall be entitled to an Interim Report before the issue of the Certificate.
- 6.11 The Applicant will not use the Certificate in such a manner as to bring BCA or CONQUAS into disrepute and will not make any statement regarding the Certificate that BCA may consider misleading or unauthorised.

**7. Rights and Duties of BCA**

- 7.1 BCA will exercise due care in the performance of the Assessment.
- 7.2 BCA will carry out the Assessment in accordance with the Sampling System and criteria in the Manual. BCA's Assessment and/or the criteria in the Manual are not intended to replace statutory requirements and/or obligations and responsibilities specified in the relevant Acts and regulations.
- 7.3 BCA reserves the right to revise the sampling system and/or assessment criteria in the Manual where necessary provided that the Applicant shall be given reasonable notice of such revision before any periodic assessment is made on such revision.
- 7.4 BCA will, on the request of the Applicant, release an Interim Report on the structural score of the project before the issue of the Certificate.
- 7.5 BCA reserves the right to maintain a register listing the names of Applicants and the relevant Projects where Assessment of the Project has been terminated by BCA pursuant to Clause 8 before the issue of the Certificate.
- 7.6 BCA reserves the right to conduct a final review, if necessary, after completion of the Assessment.
- 7.7 BCA reserves the right to refuse to assess any Project without giving any reasons. In particular, BCA reserves the right to reject any Project where the application is submitted after structural works progress has exceeded 15% completion.
- 7.8 BCA reserves the right to publish the CONQUAS® score for the Project.

**CONQUAS®**  
**CONSTRUCTION QUALITY ASSESSMENT SYSTEM**  
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- 7.9 BCA is under no obligation to make available to the Applicant the score sheets or any other information pertaining to the Assessment.
- 7.10 On completion of the Assessment, BCA shall issue a Certificate indicating the CONQUAS® components scores and the final CONQUAS® score attained for the Project, subject to receipt of payment from the Applicant.
- 7.11 BCA will permit the use of appropriate references to BCA and CONQUAS in advertising or promotional materials solely in connection with the specific **project** that it has certified, provided that the reference to BCA and CONQUAS in no way tends to create a misleading impression as to the nature of BCA's findings, coverage or service.

**8. Termination**

- 8.1 BCA reserves the right to terminate the Assessment at any stage of the Project where:
  - 8.1.1 the Applicant has not paid the fees due within the time specified in Clause 5.3; or
  - 8.1.2 the Applicant has failed to comply with any of the terms and conditions specified in this document.
- 8.2 Notice of termination shall be deemed to be served on the Applicant if sent by registered post to the business address of the Applicant and shall be effective from the date specified on the notice.
- 8.3 In the event that the Assessment is terminated by BCA under this Clause, the Applicant shall be liable for all monies due to BCA and no claim whatsoever shall be made by the Applicant for any monies already paid to BCA.

**9. Withdrawal and Withholding Issuance of Certificate**

In the event of the occurrence of any incident(s) on site (whether during the Assessment or after the Certificate has been issued) which:-

- 9.1 involves any fatality or serious injury (including permanent disability); or
- 9.2 affects and/or compromises the:
  - 9.2.1 structural integrity; or
  - 9.2.2 workmanship

of the Project or adjoining developments,

**CONQUAS®**  
**CONSTRUCTION QUALITY ASSESSMENT SYSTEM**  
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BCA reserves the right to withdraw (where the Certificate has been issued) or withhold issuance of the Certificate (where the Certificate has not been issued) without assigning any reason whatsoever to the Applicant.

The period of withdrawal of the Certificate (where the Certificate has been issued) or withholding issuance of the Certificate (where the Certificate has not been issued) shall be at the sole discretion of BCA.

**10. Force Majeure**

No claim for damages against either the Applicant or BCA shall arise out of any breach of this Agreement if such breach is caused by government intervention or regulation, Act of Parliament, war, riot, acts of public enemies, strikes or other labour disturbances, fire, flood, Act of God or other cause beyond the control of the Applicant or BCA.

**11 Exclusion of the operation of the Contracts (Rights of Third Parties) Act**

For the purposes of the Contracts (Rights of Third Parties) Act (Chapter 53B), this agreement is not intended to, and does not, give any person who is not a party to it any right to enforce any of its provision.

**12. General**

12.1 This Agreement, the Application Forms and the Manual, as revised from time to time, constitutes the entire agreement between the parties and supersedes any and all other agreements, oral or in writing.

12.2 The failure of BCA to insist upon strict compliance with any term of this Agreement shall not be construed as a waiver with regard to any subsequent failure to comply with such term or provision.

12.3 If any provision in this Agreement is invalid or unenforceable under applicable law, the remaining provisions will continue in full force and effect.

12.4 This Agreement shall be governed by the law of Singapore.

**CONQUAS<sup>®</sup>**  
**CONSTRUCTION QUALITY ASSESSMENT SYSTEM**  
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**Schedule A**

(Effective from 1 January 2011)

Gross Floor Area (m <sup>2</sup> )	CONQUAS <sup>®</sup> Fees*
≤ 5,000	\$10,500
5,001 – 6,000 (For every subsequent 1,000 or part*)	\$12,600 (Add increment of \$2,100)
9,001 - 10,000 (For every subsequent 1,000 or part*)	\$21,000 (Add increment of \$1,050)
19,001 - 20,000 (For every subsequent 1,000 or part*)	\$31,500 (Add increment of \$1,050)
29,001 - 30,000 (For every subsequent 1,000 or part*)	\$42,000 (Add increment of \$1,050)
39,001 - 40,000 (For every subsequent 1,000 or part*)	\$52,500 (Add increment of \$1,050)
49,001 - 50,000 (For every subsequent 1,000 or part*)	\$63,000 (Add increment of \$1,050)
59,001 - 60,000 (For every subsequent 1,000 or part*)	\$73,500 (Add increment of \$1,050)
69,001 - 70,000 (For every subsequent 1,000 or part*)	\$84,000 (Add increment of \$1,050)
79,001 - 80,000 (For every subsequent 1,000 or part*)	\$94,500 (Add increment of \$1,050)
89,001 - 90,000 (For every subsequent 1,000 or part*)	\$105,000 (Add increment of \$1,050)
99,001 - 100,000 (For every subsequent 1,000 or part*)	\$115,500 (Add increment of \$1,050)
> 110,000	\$126,000

\* not inclusive of GST & applicable to non-HDB projects only.

FORM A

Technology Development Division  
Quality and Certification Department

200 Braddell Road S(579700)

Attn: Mr. Philip Wong Tel: 6730 4484 / Ms. Serena Ho Tel: 6730 4477 / Ms. Sophia Chong Tel: 6730 4472

**\*PLEASE SEND ORIGINAL DECLARATION TO BCA\***

**CONQUAS  
STRUCTURAL WORKS**

**CONCRETE CUBE AND STEEL REINFORCEMENT QUALITY**

PROJECT NAME / ID NO: \_\_\_\_\_

CONTRACTOR : \_\_\_\_\_

**CONCRETE COMPRESSIVE STRENGTH RESULTS**

Total Number of Concrete Cube Test Samples (28 days) conducted for the Project :

Total number of tests:

Total Number of Concrete Cube Test Samples (28 days) that passed the SS 289 criteria :

Total number of compliance:

**STEEL REINFORCEMENT TENSILE TEST RESULTS**

Please specify tensile tests conducted for all sizes and types of steel reinforcement bars and welded steel fabric used for the project that have met CONQUAS requirement. The sizes and types of steel reinforcement bars and welded steel fabric tested are as follows:

\_\_\_\_\_  
I hereby certify that the above declaration is correct.

\_\_\_\_\_  
Name of Structural Qualified person / PE

\_\_\_\_\_  
Company / Agency Name

\_\_\_\_\_  
Signature/Date/QP/PE's Stamp



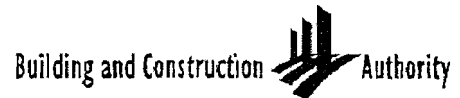






**FORM B**

Technology Development Division  
Quality and Certification Department



200 Braddell Road S(579700)

*Attn: Mr. Simon Yee Tel: 6730 4482 / Ms. Serena Ho Tel: 6730 4477 / Ms. Sophia Chong Tel: 6730 4472*

**\*PLEASE SEND ORIGINAL DECLARATION TO BCA\***

**CONQUAS  
ARCHITECTURAL WORKS  
MATERIAL & FUNCTIONAL TESTS DECLARATION**

PROJECT NAME / ID NO: \_\_\_\_\_

CONTRACTOR : \_\_\_\_\_

**1) USE OF PROPRIETARY PRE-PACKED PLASTER**

The following propriety pre-packed plaster was used for ALL plastering works in the Project :

Name & Type of Pre-Packed Plaster used : \_\_\_\_\_

(Note: Please do **NOT** tick in box if both plastering sand and pre-packed plaster was used in the Project)

**2) EXTERNAL WATERTIGHTNESS TEST FOR WINDOWS & WALL JOINTS**

Number of Windows self-tested in the Project based on BCA's CONQUAS field testing parameters (at least 25% of total windows found in the Project):

Number of Windows self-tested in the Project and passed at 1<sup>st</sup> attempt based on BCA's CONQUAS field testing parameters :

(Note: For cases of failures, please enclose record summarizing the specific locations and dates of self-test failures including subsequent retests when sending in this declaration)

**3) WET AREAS WATERTIGHTNESS TEST**

Number of Internal and External Wet areas (including RC Flat roofs, if applicable) self-tested on the final completed flooring for the Project :

Number of Internal and External Wet areas (including RC Flat roofs, if applicable) self-tested on the final completed flooring and passed at 1<sup>st</sup> attempt for the Project :

(Note: For cases of failures, please enclose record summarizing the specific locations and dates of self-test failures including subsequent retests when sending in this declaration)

I hereby certify that the above declarations are correct.

\_\_\_\_\_  
Name of Project Qualified Person

\_\_\_\_\_  
Company / Agency Name /Contact no

\_\_\_\_\_  
Signature/Date/QP's Stamp



Technology Development Division  
Quality and Certification Department

200 Braddell Road S(579700)

***M&E PERFORMANCE ASSESSMENT TEST SUBMISSIONS  
FORMAT FORM D (2 pages)***

- 1) M&E Work Performance Assessment Form endorsed by QP;*
- 2) Detail of M&E performance Test Records endorsed by QP/RE/CW;*
- 3) Inspection Test Records for each Area, such as pipe work pressure test, components T&C records, System T&C record. Endorsed by QP/RE/CW;*
- 4) Section Drawing indicates area that tested or commissioned.*

*\*For enquiry and submission issues, please contact  
Mr. Yeo Seng Tong at Tel: 6730 4491*

**FORM D**

Technology Development Division  
Quality and Certification Department



200 Braddell Road S(579700)

**Attn: Mr. Yeo Seng Tong Tel: 6730 4491**

*Note: Items a, b and c are to be filled in where applicable. The assessment is based on M&E Testing & Commissioning conducted together with the consultant. The assessment is based on percentage of test passing at first-attempt.*

**M&E WORK Performance Assessment**

Project Name & ID NO: \_\_\_\_\_

**Part 1 : ACMV**

	No. of item inspected (a)	No. of item pass at <u>first</u> attempt (b)	Percentage of passing at first attempt (c = b/a x 100%)
Ductwork Air Tightness Test			
Pipework Pressure Test			
Cooling Tower Test			
Chiller Test			
AHU Test			
Reliability Test			

**Part 2 : Water Supply**

Water Sample Test			
Water Pressure Test			

**Part 3 : Electrical Works**

Insulation Resistance Test			
RCCB Trip Test			
Polarity & Continuity Test			
Earthing Test			

**Part 4 : Fire Protection**

Fire Alarm System Test			
Hydrostatic Test			
Dry Riser Test			
Wet Riser Test			
Hose Reel Test			

*\* I hereby certify that the above test results are correct.*

M&E Qualified Person: \_\_\_\_\_  
(PE Stamp)

Date: \_\_\_\_\_





**FORM E**

Technology Development Division  
Quality and Certification Department  
200 Braddell Road S(579700)



# DRAFT CONQUAS CERTIFICATE

PROJECT ID NO: \_\_\_\_\_ DATE \_\_\_\_\_

PLEASE ENSURE THAT ALL THE INFORMATION PROVIDED BELOW IS CORRECT, AS IT WILL BE USED TO PRINT THE CONQUAS CERTIFICATE WHICH WILL BE ISSUED TO YOUR COMPANY UPON FINALIZATION OF THE CONQUAS SCORE.

**\*WE REQUIRE CONFIRMATION FROM BOTH THE DEVELOPER AND CONTRACTOR THAT THE CONTENTS ARE IN ORDER**

1. PROJECT SHORT NAME TO BE PRINTED (for example, AIA Tower):	
2. MAIN CONTRACTOR NAME TO BE PRINTED:	
3. DEVELOPER NAME TO BE PRINTED:	
4. ACKNOWLEDGEMENT BY DEVELOPER AND CONTRACTOR:	
Name, Signature & Company Stamp <u>DEVELOPER</u>	Name, Signature & Company Stamp <u>CONTRACTOR</u>
Contact No:	Contact No:

Please return this form within SEVEN (7) DAYS to avoid delay in the preparation of the final certificate. \*If you require any further clarifications, please contact the following:

Mr. Simon Yee  
Tel: 6730 4482 Fax: 6225 9225  
Email: SIMON\_YEE@BCA.GOV.SG





**APPENDIX 8-1-1**  
**FULL-TIME BASIS APPOINTMENT**



## **FULL-TIME Basis Appointment**

### **1. Draft DECREE on quality management of construction facilities.**

*Article 26. Construction contractors' responsibilities in the quality management of construction execution*

*1. To establish quality management system which must conform to the scale of facilities, and also stipulates the responsibilities of each individual and division in the quality management of facilities.*

*2. To demarcate the responsibilities in the quality management of construction facilities among stakeholders in cases of general facility construction contracts; construction engineering and general construction contracts; engineering-technological equipment provision-general construction contracts; general turnkey contracts*

- As stipulated in the above draft Decree, the responsibilities in the quality management of construction execution have to be clarified.

### **2. Contract Form of Work Construction (refer to Circular No.9/2011/TT-BXD of June 28,2011)**

*Article 1. Definitions and interpretation*

*1.4. "Representative of contractor" means the person who is listed in the contract by the contractor or authorised in writing and on behalf of the contractor in operating the works.*

*Article 11. General rights and obligations of the Contractor*

*11.2. Obligations of Contractor*

*11.3. Contractor's personnel*

- Representative of Contractor is defined in the above Article 1. of Contract Form guided by MOC.
- Obligations of Contractor are stipulated in the above Article 11.2 and 11.3.
- However no clear statement of the roles of representative of Contractor and demarcation of responsibilities among construction site organization.

### **3. FIDIC**

#### **3.1. FIDIC Conditions of Contract for Works of Civil Engineering Construction**

*Part I General Conditions*

*Fourth Edition 1987, Reprinted 1988 with editorial amendments, Reprinted 1992 with further amendments*

*15.1 Contractor's Superintendence*

*The Contractor shall provide all necessary superintendence during the execution of the Works and as long thereafter as the Engineer may consider necessary for the proper fulfilling of the Contractor's obligations under the Contract. The Contractor, or a competent and authorised*

*representative approved of by the Engineer, which approval may at any time be withdrawn, shall give his whole to time to the superintendence of the Works. Such authorised representative shall receive, on behalf of the Contractor, instructions from the Engineer.*

- Contractor's necessary superintendence and requirement of **FULL-TIME** competent authorised representative are stipulated in FIDIC contract Fourth Edition 1987.

### **3.2. FIDIC Conditions of Contract for Construction**

*Multilateral Development Bank Harmonised Edition*

*General Conditions*

*June 2010*

#### *4.3 Contractor's Representative*

*The Contractor shall appoint the Contractor's Representative and shall give him all authority necessary to act on the Contractor's behalf under the Contract.*

.....

*The whole time of the Contractor's Representative shall be given to directing the Contractor's performance of the Contract. If the Contractor's Representative is to be temporarily absent from the Site during the execution of the Works, a suitable replacement person shall be appointed, subject to the Engineer's prior consent, and the Engineer shall be notified accordingly.*

*The Contractor's Representative shall, on behalf of the Contractor, receive instructions under Sub-Clause 3.3 [Instructions of the Engineer].*

...

#### *6.8 Contractor's Superintendence*

*Throughout the execution of the Works, and as long thereafter as is necessary to fulfil the Contractor's obligations, the Contractor shall provide all necessary superintendence to plan, arrange, direct, manage, inspect and test the work.*

*Superintendence shall be given by a sufficient number of persons having adequate knowledge of the language for communications (defined in Sub-Clause 1.4 [Law and Language]) and of the operations to be carried out (including the methods and techniques required, the hazards likely to be encountered and methods of preventing accidents), for the satisfactory and safe execution of the Works.*

- Requirement of **FULL-TIME** Contractor's Representative and necessary superintendence are more clearly stipulated in FIDIC Multilateral Development Bank Harmonised Edition, June 2010

## **4. Construction Contractors Law and Standard Contract Terms and Conditions for Public Works in Japan**

#### **4.1. Contractor's Representative (=Site Agent)**

- It is stipulated in Standard Contract Terms and Conditions for Public Works in Japan that Site Agent shall be appointed on **FULL-TIME** basis at site.
- It is also stipulated in Standard Sub-Contract Terms and Conditions for Construction Works in Japan that Site Agent for Sub-Contractor shall be appointed on **FULL-TIME** basis at site.

#### **4.2. Chief Engineer and Managing Engineer**

- It is stipulated in Article 26 of Construction Contractors Law in Japan that Chief Engineer shall be appointed to execute technical management and control of construction at site.
- It is stipulated in Article 26 of Construction Contractors Law in Japan that Managing Engineer instead of Chief Engineer shall be appointed for construction works of which sub-contracted amount is not less than 30 million JPY to execute technical management and control of construction at site.
- For public or large important facilities or structures construction works of which total contract price is not less than 25 million JPY (for lump sum building works, not less than 50million), Managing Engineer or Chief Engineer to be appointed shall be on **FULL-TIME** basis regardless of main contract or sub-contract.
- **FULL-TIME** basis means exclusive duty prohibiting concurrent assignment for more than one project. Therefore such **FULL-TIME** Engineers shall be assigned continuously at all times for construction site concerned.
- Appointment and notification of Chief Engineer and Managing Engineer are stipulated in Standard Contract Terms and Conditions for Public Works in Japan.



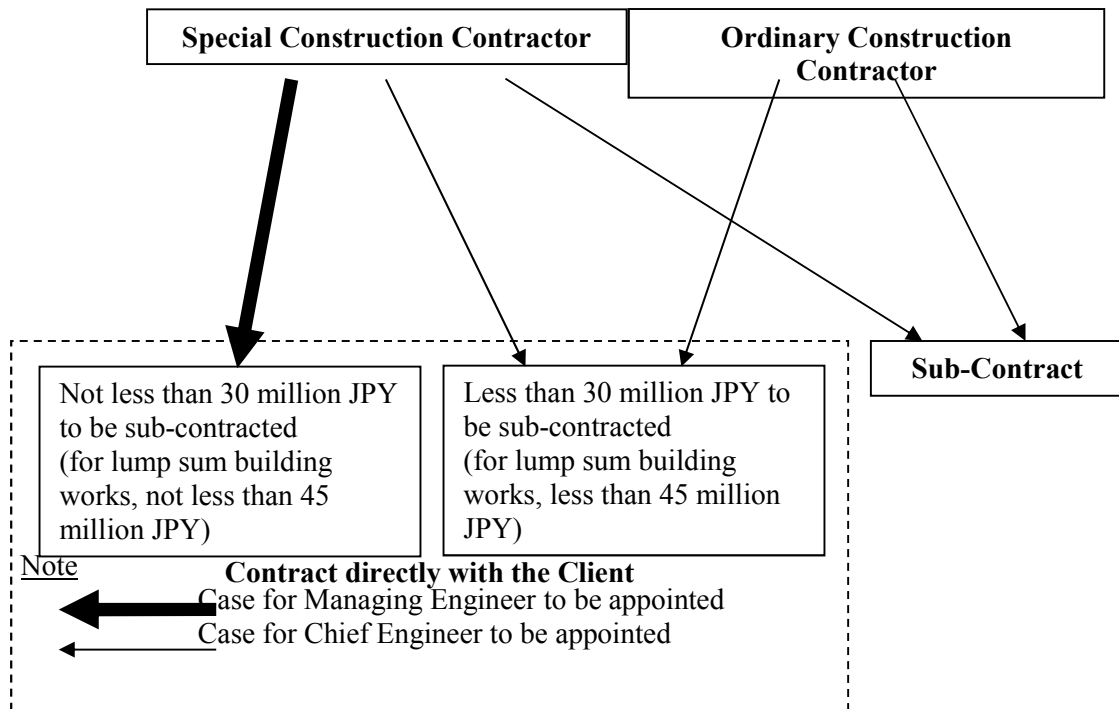
**APPENDIX 8-1-2**

**MANAGING ENGINEER AND CHIEF  
ENGINEER FOR SPECIAL  
CONSTRUCTION CONTRACTOR  
AND ORDINARY CONSTRUCTION  
CONTRACTOR**





**Managing Engineer and Chief Engineer  
for Special Construction Contractor and Ordinary Construction Contractor**





**APPENDIX 8-1-3**  
**DISCIPLINARY ACTIONS**



(1) Composition of “**Disciplinary Actions**”

- Construction Contractors Law provide penalties to control violations of the Law by imposing punishment and non-penal fine
- In addition to penalty provision under the Law, there are three actions, “**Instructions**”, “**Suspension of Business**” and “**Rescission of Business License**” as “**Disciplinary Actions**” imposed by the licensor of construction business, such as Minister of Land, Infrastructure and Transport and governors.
- “**Disciplinary Actions**” are taken for illegal actions violating Construction Contractors Law and other relevant legal imperatives for the purpose of correction of inappropriate contractors and elimination of disqualified bodies from construction industry.

(2) Penal Servitude and Fine for violation of Construction Contractors Law

- The penal provision for engineers stipulated by Engineer Qualification System is as follows.
  - 1) Any person who obtains construction business license based on false assignment of required qualified engineer or wrongful facts will be sentenced to not more than three years' penal servitude or fined not more than three million Japanese Yen.
  - 2) Any person who applied license based on false records will be sentenced to not more than three months' penal servitude or fined not more than one million Japanese Yen.
  - 3) Any person who doesn't assign Chief Engineer or Managing Engineer shall be punished by a non-penal fine not more than one million thousand yen.

(3) Criteria for “Disciplinary Actions”

- Construction Contractors Law provides “**Recommendations**” as “Administrative Guidance” and “**Instructions**”, “**Suspension of Business**” and “**Rescission of Business License**” as “Disciplinary Actions” other than penalties. Any disposition of them will be adopted by taking details, extent, social influence and extenuating circumstances of illegal action into consideration.

(4) “**Recommendations**” : Administrative Guidance encouraging legal compliance

- Recommendations will be made for the purpose of encouragement of appropriate execution of construction works, sound growth of construction industry and restructuring of company organization by legal compliance.
- Recommendations will be made as Administrative Guidance but not disposition imposing binding effect to the opponent like punitive Administrative Order. Therefore no sanction will be taken immediately although person doesn't follow the recommendation.

(5) “**Instructions**” : Administrative Order with binding effect

- Instructions will be given as Administrative Order with binding effect for the purpose of correction of violations of laws and regulations or wrongful facts when the fact of violations of laws and regulations or facts falling under Article 28, Item1 of Construction Contractors Law are found.
- Examples of Instructions related to engineers are listed below.
  - 1) When Chief Engineer or Managing Engineer appointed at site acts against full-time obligation under the Law
  - 2) When Chief Engineer or Managing Engineer is remarkably inappropriate for construction supervision and replacement of him is necessary for public interest.
  - 3) When Full-Time Engineer appointed to business office is changed but no notification to licensor is made within 2 weeks of the change.

(6) “**Suspension of Business**” : Measure encouraging repentance

- “**Suspension of Business**” is measure taken to encourage repentance by suspension of construction business in a certain period when inappropriate actions are found and improvement or correction of them are required and it is judged based on the details of the actions that the Instructions for them are not sufficient or to encourage thorough compliance of Instructions by suspension of construction business in a certain period when construction contractor who received Instructions from the authority breaks the Instructions or the Instructions are not thoroughly enforced. A period of Suspension of Business will be not more than one year.
  - “**Suspension of Business**” will be adopted when Chief Engineer or Managing Engineer is remarkably inappropriate for construction supervision by intention or gross negligence and replacement of him is necessary for public interest. When it is not by intention or gross negligence, “**Instructions**” will be adopted in principle.
  -
- (7) “**Rescission of Business License**” is disposition to deprive the subject parties of legal position
- Construction business license is given to party who meet a certain criteria of license under the law therefore the license will be cancelled upon failure in conformance to the criteria and construction business by the unlicensed party will be prohibited.
  - When a case falls under grounds for “**Disciplinary Actions**” and the circumstance is especially serious or when construction business is continued after adoption of “**Suspension of Business**”, it will be judged that appropriate construction business cannot be run so that the business license will be deprived and construction business will be prohibited.
  - When a position of Full-Time Engineer to be appointed to business office under the Law becomes vacant by his death, retirement or turnover etc, the construction business license will be revoked for both ordinary construction industry and special construction industry.
  - When a license is obtained or renewed by false or wrongful way, i.e. a license is given to ineligible person, the construction business license will be revoked.
  - Wrongful ways mean false statement in license application form and the attachment, false answer to inquiry from administrative agency relating to examination and inspection of license or other unfair actions such as acts of violence and threatening resulting in misjudgment by the administrative agency.
- (8) Inappropriate and dishonest person will be eliminated from public construction works.
- Administrative agency issuing license takes “**Disciplinary Actions**” such as “**Suspension of Business**” etc. In contrast, project owner imposes “**Elimination from List for Nomination**” at his discretion to ineligible body for contract for public construction works to eliminate the ineligible body from selection target of nominated contractor for public works in a certain period.
  - “**Elimination from List for Nomination**” is different from “**Disciplinary Actions**” such as “**Suspension of Business**” and “**Rescission of Business License**” etc and is not sanction to restrict construction contractor’s right of business activities.
  - Therefore “**Elimination from List for Nomination**” is defined as another type of action differ from “**Disciplinary Actions**” made by Administrative Agency.
- (9) A result of “**Disciplinary Actions**” will be kept for public perusal.
- When Minister of Land, Infrastructure and Transport and/or governors impose “**Instructions**”, “**Suspension of Business**” and “**Rescission of Business License**” to construction contractors, they keep results of the “**Disciplinary Actions**” for public perusal at designated place of perusal in order to notify the bodies who have intention to make contract with such contractors of the results with “**Book of Disciplinary Actions**” showing date and details of the Action taken.
- (10) Criteria for “**Disciplinary Actions**” for engineers

- When Chief Engineer or Managing Engineer is not appointed at site (including inappropriate Engineer is appointed), “**Suspension of Business**” will be imposed in a period of not less than 15 days. “**Instructions**” will be adopted when appointed engineer acts against full-time obligation under the Law in principle.
- “Suspension of Business” will be imposed to the contractor who acts against Instructions received. A period of the Suspension will be not less than 7 days in principle.





**APPENDIX 8-1-4**

**QUESTIONNAIRE SURVEY ON  
ENGINEER QUALIFICATION  
SYSTEM IN JAPAN**



## **Questionnaire Survey on Engineer Qualification System in Japan**

Circumstances surrounding Qualification System for Engineer have changed recently with decrease in construction investment and lack of employment of young engineers in Japan.

Under the circumstance, the trend of public opinion demands review of system. MLIT organized Study Committee for Qualification System for Engineer. The committee carried out the questionnaire survey for construction associations (CA), local government as client and private enterprises for promoting the public interests in November, 2011.

The results of the survey are listed below.

### A Issue of Certificate of Qualification for Managing Engineer

#### A-1 Actual utilization of Certificate of Qualification for Managing Engineer

- ① CA : 40-50% and 20-30% of CA are verifying the Certificate of Qualification for public works and private works respectively.
- ② Client : 90% of Client except local cities are verifying the Certificate of Qualification at pre-qualification of tender and/or contract execution.
- ③ CA : Situation requiring verification of the Certificate of Qualification for Managing Engineer
  - Identification confirmation at site : the certificate is verified prior to intermediate and final inspection and at the time of confirmation of site organization
  - Pre-qualification of tender : A copy of certificate is required to be submitted.
- ④ Client : Documents other than Certificate of Qualification for Managing Engineer required to be submitted at pre-qualification of tender and/or contract execution
  - Certificate of training completion for Managing Engineer, evidence of permanent employment, such as health insurance card etc and curriculum vitae of the engineer

#### A-2 Necessity of measures for indication and verification of qualified Managing Engineer and efficiency of certificate of qualification for Managing Engineer as measure for the indication and the verification

- ① 80-90% of Client and CA need measures for indication and verification of qualified Managing Engineer
- ② 90% of Client and 70% of CA need certificate of qualification for Managing Engineer currently in use

#### A-3 Alternative measures to certificate of qualification for Managing Engineer

- ① Verification of qualification and employment relationship with the belonged company through the Client's access to database formed based on information to be registered by each qualified engineer.  
Points of attention : Accuracy and timeliness of information need to be secured.
- ② Verification of qualification through the Client's access to existing database of qualified Construction Supervisor etc.  
Points of attention : In this case, employment relationship with the belonged company etc needs to be verified by evidence to be submitted each time.
- ③ Verification by the Client with various evidences submitted by applicant such as the certificate of residence, the passing certificate of qualification test for engineers, health insurance card proving employment relationship without another measures newly established or existing database.  
Points of attention : Load to applicant and verifier will be increased. Verification at site cannot be made. Increasing in time and cost for operation will be introduced. Personal information shall be protected appropriately.

A-4 Information to be included for indication and verification of qualified engineers etc

- ① 20% of Client and CA advice that information to be included shall be increased.
- ② 20% of CA advice that information to be included shall be reduced.
- ③ 30% of Client advice that information to be included shall be reduced.
- ④ Items to be added : Construction experience, length of service under belonged company, commendation given and CPD
- ⑤ Items to be deleted : Permanent address, current address etc.
- ⑥ Other items which CA need to add : Construction records of company and Engineer's personal career
- ⑦ Other items which Client need to add : Construction records of belonged company, status of permanent employment, status of completion of training course for Managing Engineer, all qualification obtained by applicant

A-5 Important points for appropriate appointment of engineers

- ① CA : "Utilization of special construction engineer and skilled workers", "capability, technical skill and experience of engineer", "human resources development", "communication skill, coordination ability and leadership performance to sub-contractor"
- ② Client : "capability, technical skill and experience of engineer", "qualification of engineer", "confirmation on full-time assignment", "appropriate construction site organization", "appropriate safety management" and "communication skill, coordination ability and leadership performance to sub-contractor"

B Training course for Managing Engineer

B-1 Ability required as Managing Engineer

- ① CA : "Ability for Construction Supervisory and Management (Quality, Time, Safety, Cost, Environment)", "Assurance of Construction Organization and Leadership, Direction and Training to Staff and Sub-Contractor" and "Gathering information in respect of up-to-date technology, revision of laws, fluctuation of prices of equipment and material etc"
- ② Client : "Ability for Construction Supervisory and Management (Quality, Time, Safety, Cost, Environment)", "Assurance of Construction Organization and Leadership, Direction and Training to Staff and Sub-Contractor" and "Legal Compliance Performance"

B-2 Necessity for periodical training opportunity

- ① 80% of Client and CA need periodical training opportunity
- ② Minimum issues to be mastered by training course which are raised by both Client and CA are "Basic statute system", "Safety management" and "Quality Control" in order of importance.

B-3 Efficiency of current Training Course for Managing Engineer

- ① 60% of total including CA and Client recognize efficient.
- ② 70-80% of CA of Civil Construction recognize efficient
- ③ 70% of Client (major cities and local minor municipalities) recognize efficient.

B-4 Frequency and duration of current Training course for Managing Engineer

- ① 70% of CA and Client recognize that every 5 years is appropriate.
- ② 60% of CA and Client recognize that 6 hours training is appropriate.
- ③ 20% of CA recognizes it is too long and 20% of Client recognizes it is too short.

B-5 Subjects of current Training Course for Managing Engineer

- Statute System : Statute System regarding Construction

- Management : Technical management and control of construction at site, such as planning of construction method statement, time management and quality management etc
- Method of Construction : Up-to-date material and method of construction
- ① More than 30% of CA and Client need that contents of Statute System shall be enriched and less than 10% of CA and Client need that contents of Statue System shall be reduced,
- ② 30% of CA and 20% of Client need that contents of Method of Construction shall be enriched.

#### C Review of alternative measures to issue of Certificate of Qualification for Managing Engineer

##### C-1 Major issues regarding Certificate of Qualification for Managing Engineer

- ① Some client don't utilize the certificates, although the Certificates enable Client to verify Identification Confirmation, Employment Relationship and Qualification etc of Managing Engineer at a time and are utilized for proving qualification of assigned engineers and various inspection and verification on construction organization at pre-qualification of tender and/or contract execution.
- ② Information included in the Certificate is not sufficient for verification of permanent employment
- ③ Construction experiences of holders are not included.
- ④ Cost of issuing of the certificates shall be reduced.

##### C-2 Points of attention to alternative measures to Certificate of Qualification for Managing Engineer

- ① Identification Confirmation and Verification of Employment Relationship and Qualification are necessary for appropriate assignment of engineers at site regardless of the Certificate of Qualification.
- ② Verification of construction experience at site without Certificate of Qualification for Managing Engineer makes heavy demands on the verifier. In this case, judgment on verification may be inconsistent.
- ③ Lightening of the burden caused by submission of evidence of qualification needs to be considered.
- ④ Management of information regarding qualified engineer by database is also efficient way.
- ⑤ Protection of personal information needs to be taken into account.
- ⑥ From the point of view of eligibility requirements and verification of belonged company, renewal every 5 years is efficient and practical.

#### D Review of alternative measures to compulsory training course for Managing Engineer

##### D-1 Major issues regarding compulsory training course for Managing Engineer

- ① It is difficult to secure quality of engineers uniformly by training course.
- ② Present condition that participation in training course enables any applicant to obtain certificate of course completion.
- ③ Numbers of training course for special construction are deficient.
- ④ Special technology is unsuitable for training course.
- ⑤ A system, which enables anybody to participate in training course whenever he wants, is required rather than every 5 years in order to reflect revision of laws to works.
- ⑥ Opportunity of construction contract is decreased. Therefore opportunity of more practical study is required.

##### D-2 Points of attention to alternative measures to compulsory training course for Managing Engineer

- ① Training course regarding relevant laws needs to be compulsory.

- ② Opportunity that qualified Managing Engineer can study timely and efficiently minimum knowledge of legal system and construction technology with his autonomy left is required.
- ③ An incentive to assist and support independent effort is required.
- ④ A system collaborating with CPD is required.
- ⑤ A system which provides qualified Managing Engineer with information regarding legal matters whenever legal system is changed.
- ⑥ Consideration to small and medium-sized company which has limitation of independent effort is required.
- ⑦ Provision of opportunity for study according to actual achievement and experience of Managing Engineer is required.
- ⑧ A renewal process for engineer is required to confirm his technical skill.

**APPENDIX 9-1-1**  
**TECHNICAL SPECIFICATION**  
**COMPARISON**





### Technical Specification Comparison

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
Cua Dai bridge - Package No. 3.2-Construction of main bridge section (Pier T11-T18, including Pier T11-T18)	DAI NINH Hydropower-CW2		
1. Definition and interpretation	1. General	1-1 Application (M)	SECTION 1. GENERAL PROVISIONS
2. Materials	1.1 Reference to other sections	1-2 Definition of the terms	1.General
3. Material yard	1.2 Cooperation with other contractors	1-3 Contract document confirmation	1.1 Application
4. Tax	2. Description of the project	1-4 Execution plan	1.2 Abbreviations
5. Bypass, service road and other works	3. Scope of the work	1-5 Making and registering construction data carte	1.3 Units of measure
6. Houses, huts and stores	3.1 Complementary investigation works	1-6 Supervisors	1.4 Definition of the terms
7. Executive office in the site	3.2 Permanent works	1-7 Use of construction site	2. Requirements
8. Laboratory	3.3 Temporary works	1-8 Onset of construction	2.1 Contract document confirmation
9. Mobilization and disintegration of the site	3.4 Works on site not belonging to this contract	1-9 Dates of works(E)	2.2 Requirements classification
10. Labor safety	4. The site	1-10 Subcontract	
11. Site security	4.1 Location of site	1-11 Substitution on the site (E)	SECTION 2. PRELIMINARIES
12. Environmental protection during the construction	4.2 Design criteria and basic data	1-12 Execution structure ledger(M)	1.Materials, equipment and plants
13. Traffic safety	4.3 Access facilities	1-13 Contractor's mutual cooperation	1.1Delivery Schedule
14. Site signals	5. Proposed construction or upgrading of roads	1-14 Temporary stoppage of construction	1.2 Receiving, handling & delivery
15. Standards on workmanship	6. Use of site	1-15 Negotiations with local stakeholders(E)	1.3 Storage
16. Construction in the condition of flow or flooring areas	6.1 Designed areas	1-16 Change of construction period (M)	2. Project meetings
17. Construction in the context of storm or natural disaster	6.2 Ownership of natural materials and	1-17 Temporary road	2.1 Negotiations with local stakeholders

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
	structures	for construction(E)	
18. Investigation of related float or underground works	6.3 Property outside the site	1-18 Construction materials(E)	2.2 Pre-construction meetings
19. Investigation work	6.4 Existing rights of way	1-19 Products from construction site(M)	2.3 Progress meetings
20. As-built drawings	7. Facilities provided by the employer	1-20 Construction by-product	3. Project ceremonies
21. Measuring equipment	7.1 General	1-21 As build drawing(M)	3.1 Onset of construction
22. Applied technical specification	7.2 Power supply	1-22 Test on completion	3.2 Inauguration ceremony
23. Allowable error	7.3 Access roads	1-23 Inspection of partially completed	4.Dates of works
24. Maintenance of sewage and irrigation systems	7.4 Local drainage system at saddle dams No.1 and No.2	1-24 Partial usage	5. Insurance and warranty
25. Completion documents	8. Facilities provided by the contractor for the engineer and the employer	1-25 Execution control	6. Protection of works
26. Tests and list of reference standards	8.1 General	1-26 Progress report	7. Protection of utilities and existing structures
26.1 Testing	8.2 Field cabins	1-27 Measure request to contractors	8. Protection of cultural asses
	9. Other facilities provided by the contractor	1-28 Assurance of construction safety	9. Maintenance of existing waterway
	9.1 General	1-29 Protection of explosion and fire(M)	10.Temporary installations
	9.2 Contractor's residential area	1-30 Clean up(M)	11. Preservation of secrets
	9.3 Site laboratory and testing facilities	1-31 Accident report(M)	12. Measurement and payment
	9.4 Other site facilities	1-32 Measures for environment	
	9.5 Catering/eating facilities	1-33 Protection of cultural asses	SECTION 3. MOBILIZATION
	9.6 Access on site	1-34 Traffic safety control	1.Contractor's Mobilization (program)

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
	9.7 Power supply	1-35 Set of construction sign(E)	1.1 Land for construction purposes, detours, plant and other uses
	9.8 Lighting	1-36 Observance of all laws	1.2 Construction equipment and plant
	9.9 Water supply	1-37 Procedures to related authorities and companies	1.3 Contractor's office and other facilities
	9.10 Communications		1.4 Superintendents and assistants
	9.11 Sewage and sewage treatment	1-38 Guarantee of defect(E)	1.5 Contractor's workshop and warehouse
	9.12 Name boards	1-39 Survey for construction	2. Subsidiary requirements
	10. Services provided by the contractor	1-40 Damage by force majeure	2.1 Access roads
	10.1 Sanitation and cleaning	1-41 Patents	2.2 Temporary road for construction
	10.2 Medical facilities	1-42 Insurance and compensation for accident	2.3 Storage of materials
	10.3 Fire control	1-43 Occasional measure	2.4 Project information signs
	10.4 Security	1-44 Preservation of secrets(E)	2.5 Security fencing
	10.5 Weather and river level recording		2.6 Temporary lighting
	10.6 Progress photographs		2.7 Sanitary facilities
	10.7 Maintenance of structures, buildings, housing and facilities		2.8 Water
	10.8 Assistance for the engineer		2.9 Sewages
	10.9 Labor for nominated sub-contractors		2.10 Communication system
	11. Construction matters		3. Demobilization
	11.1 Programming requirements		4. Measurement and payment
	11.2 General responsibilities		4.1 Method of measurement
	11.3 Quality management		4.2 Basis of payment
	11.4 Approvals of materials and equipment		
	11.5 Contractor's labor, equipment and material reports		SECTION 4. ENGINEERING SERVICES

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
	12. Standards, drawings and correspondence		
	12.1 Standards, codes and regulations		1.Description
	12.2 Drawings supplied to the contractor		2.Setting out of the work
	12.3 Design and drawings to be developed by the contractor		3. Measurements for pay quantities
	12.4 Submission and approval		4. Stability and settlement monitoring surveys
	12.5 Ownership of the drawings and data		5. Additional geotechnical engineering services
	12.6 Correspondence with the engineer		6. Measurement and payment
	13.Health and safety		
	13.1 General		SECTION 5. FACILITIES FOR THE ENGINEERS
	13.2 Health and safety policy		
	13.3 Code of practice within the policy		1. Requirements
	13.4 Safety officers		2. Offices for engineers
	13.5 Epidemics and hazardous substances		2.1 Engineer's main site office
	13.6 First aid provisions		2.2 Site office communication requirements
	13.7 Rescue teams		2.3 Site office operation requirements
	13.8 Lighting and power		2.4 Engineers accommodations
	13.9 Transport of personnel		2.5 Vehicles for engineers
	13.10 Safety of public		3. Measurement and payment
	13.11 Storage and use of explosives		
	13.12 Warning of blasting		SECTION 6. SUBMITTALS
	13.13 Lighting		
	14. Environmental considerations		
	14.1 General		1.Requirements
	14.2 Protection and replanting of the flora		1.1Submittals classification and list
	14.3 Protection of the fauna		1.2 Submittals requirements
	14.4 Erosion control and storm-water management		1.3 Project records
	14.5 Spoil dumps and stockpiles		1.4Drawings
	14.6 Dust control		1.4.1General

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
	14.7 Noise pollution		1.4.2Preperation
	14.8 Relations with local communities		1.4.3Schejule and approval
	15. Survey and setting out		1.5Photographs and videos
	15.1 Scope		2. Measurement and payment
	15.2 General		
	15.3 Control beacons		SECTION 7. PROGRAM OF WORK
	15.4 Preservation and replacement of beacons and bench marks		1. Description
	15.5 Survey of ground profiles		2. Requirements
	15.6 Setting out of the works		2.1 General
	15.7 Setting out checks		2.2 Program composition and contents
	15.8 Lines and levels of reference for erection of equipment by others		2.3 Schedules
	15.9 Survey assistance and helpers		2.4 Submittal and approval
	16. Dealing with water		2.5 Up-date and cash-flow
	16.1 General		3. Measurement and payment
	16.2 Surface works		
	16.3 Water discharged from working areas		SECTION 8. PROJECT SAFETY
	16.4 Water control during concreting		1. Description
	16.5 Settlement ponds		2. Requirements
	17. Diversion and control of the river		2.1 General
	18. Measurements and payments		2.2 Safety plan
	18.1 Principles		2.3 Safety manager
	18.2 Bill of quantities section A-Preliminary and general		2.4 Special requirements for safety
			3. Measurement and payment
			SECTION 9. MAINTENANCE AND PROTECTION OF TRAFIC
			1. Description
			2. Requirements
			2.1 General
			2.2 Traffic control plan
			2.3 Traffic supervisor

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
			2.4 Special requirements for traffic control
			2.4.1 Works for traffic control
			2.4.2 Materials for traffic control devices
			2.4.3 Maintenance of equipment and devices for traffic control
			2.4.4 Traffic control during non-working hour
			2.4.5 Traffic control during night time
			2.4.6 Traffic control conserving existing traffic
			2.4.7 Temporary road works
			2.4.8 Temporary traffic ramps
			2.4.9 Passing of other contractors
			2.4.10 Number of lanes for traffic control
			2.4.11 Half-width construction
			2.4.12 Vertical clearance
			3. Measurement and payment
			3.1 Method of measurement
			3.2 Basis of payment
			SECTION 10. ENVIRONMENTAL CONTROL AND PROTECTION
			1. Description
			2. Requirements
			2.1 Regulations and reference standards
			2.2 General
			2.3 Contractor's plan for environmental control and protection (The environmental control plan)
			2.4 Environmental manager
			2.5 Special requirements for environmental control)
			2.5.1 Baseline monitoring
			2.5.2 Air quality and dust

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
			2.5.3 Water quality
			2.5.4 Vibration and noise
			2.5.5 Waste and soil contamination
			2.5.6 Other environmental aspects
			2.5.7 Environmental monitoring system
			3. Measurement and payment
			3.1 Basis of payment
			SECTION 11. LABORATORY AND ENGINEER'S EQUIPMENT
			1. Description
			2. Requirements
			2.1 Reference standards
			2.2 General
			2.3 Special requirements
			2.3.1 Special requirements for the laboratory
			2.3.2 Equipment and instruments for the laboratory
			2.3.3 Laboratory check by the engineer
			2.3.4 Survey and testing equipment and personnel supplied to the engineer
			2.4 Certificate of satisfactory laboratory operation
			3. Measurement and payment
			3.1 Basis of payment
			SECTION 12. CONTRACTOR'S QUALITY CONTROL
			1. Description
			2. Requirements
			2.1 Reference standards
			2.2 General
			2.3 Contractor's plan for quality control



Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
			(QCP)
			2.4 Quality control for manager ( the QC manager)
			2.5 Special requirements for quality control
			2.5.1 Laboratory, testing inspection, sampling and testing procedures
			2.5.2 Certified laboratory tests and manufacturer's certification
			2.5.3 Quality control's records and reports
			2.6 Acceptance and notification of non-compliance
			2.6.1 Acceptance
			2.6.2 Notification of non-compliance
			2.6.3 Certificate of satisfactory quality control
			3. Measurement and payment
			2. Purpose of this section
			3. Definitions
			3.1 Reference standards
			3.2 Object to the acceptance
			3.3 Evaluation of lot
			3.4 Decision to accept or reject
			3.5 Dispersion range of the work
			3.6 Acceptance with award
			3.7 Payment factor
			3.8 Combined payment factor (Pfg)
			3.9 The monitoring schedule for acceptance of work
			3.10 Special requirement for acceptance of work
			3.11 Certificate of acceptance of work
			4. Measurement and payment

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
			SECTION 13. CONTROL OF MATERIALS
			1. Description
			2. Requirements
			2.1 Reference standards
			2.2 General
			2.3 The schedule of materials
			2.4 Special requirements for the control of materials
			2.5 Acceptance and notification of non-compliance
			2.5.1 Acceptance
			2.5.2 Notification of non-compliance
			2.5.3 Certificate of satisfactory control of materials
			3. Measurement and payment



**APPENDIX 9-1-1**  
**TECHNICAL SPECIFICATION**  
**COMPARISON**



### Technical Specification Comparison

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
Cua Dai bridge - Package No. 3.2-Construction of main bridge section (Pier T11-T18, including Pier T11-T18)	DAI NINH Hydropower-CW2		
1. Definition and interpretation	1. General	1-1 Application (M)	SECTION 1. GENERAL PROVISIONS
2. Materials	1.1 Reference to other sections	1-2 Definition of the terms	1.General
3. Material yard	1.2 Cooperation with other contractors	1-3 Contract document confirmation	1.1 Application
4. Tax	2. Description of the project	1-4 Execution plan	1.2 Abbreviations
5. Bypass, service road and other works	3. Scope of the work	1-5 Making and registering construction data carte	1.3 Units of measure
6. Houses, huts and stores	3.1 Complementary investigation works	1-6 Supervisors	1.4 Definition of the terms
7. Executive office in the site	3.2 Permanent works	1-7 Use of construction site	2. Requirements
8. Laboratory	3.3 Temporary works	1-8 Onset of construction	2.1 Contract document confirmation
9. Mobilization and disintegration of the site	3.4 Works on site not belonging to this contract	1-9 Dates of works(E)	2.2 Requirements classification
10. Labor safety	4. The site	1-10 Subcontract	
11. Site security	4.1 Location of site	1-11 Substitution on the site (E)	SECTION 2. PRELIMINARIES
12. Environmental protection during the construction	4.2 Design criteria and basic data	1-12 Execution structure ledger(M)	1.Materials, equipment and plants
13. Traffic safety	4.3 Access facilities	1-13 Contractor's mutual cooperation	1.1Delivery Schedule
14. Site signals	5. Proposed construction or upgrading of roads	1-14 Temporary stoppage of construction	1.2 Receiving, handling & delivery
15. Standards on workmanship	6. Use of site	1-15 Negotiations with local stakeholders(E)	1.3 Storage
16. Construction in the condition of flow or flooring areas	6.1 Designed areas	1-16 Change of construction period (M)	2. Project meetings
17. Construction in the context of storm or natural disaster	6.2 Ownership of natural materials and	1-17 Temporary road	2.1 Negotiations with local stakeholders

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
	structures	for construction(E)	
18. Investigation of related float or underground works	6.3 Property outside the site	1-18 Construction materials(E)	2.2 Pre-construction meetings
19. Investigation work	6.4 Existing rights of way	1-19 Products from construction site(M)	2.3 Progress meetings
20. As-built drawings	7. Facilities provided by the employer	1-20 Construction by-product	3. Project ceremonies
21. Measuring equipment	7.1 General	1-21 As build drawing(M)	3.1 Onset of construction
22. Applied technical specification	7.2 Power supply	1-22 Test on completion	3.2 Inauguration ceremony
23. Allowable error	7.3 Access roads	1-23 Inspection of partially completed	4.Dates of works
24. Maintenance of sewage and irrigation systems	7.4 Local drainage system at saddle dams No.1 and No.2	1-24 Partial usage	5. Insurance and warranty
25. Completion documents	8. Facilities provided by the contractor for the engineer and the employer	1-25 Execution control	6. Protection of works
26. Tests and list of reference standards	8.1 General	1-26 Progress report	7. Protection of utilities and existing structures
26.1 Testing	8.2 Field cabins	1-27 Measure request to contractors	8. Protection of cultural asses
	9. Other facilities provided by the contractor	1-28 Assurance of construction safety	9. Maintenance of existing waterway
	9.1 General	1-29 Protection of explosion and fire(M)	10.Temporary installations
	9.2 Contractor's residential area	1-30 Clean up(M)	11. Preservation of secrets
	9.3 Site laboratory and testing facilities	1-31 Accident report(M)	12. Measurement and payment
	9.4 Other site facilities	1-32 Measures for environment	
	9.5 Catering/eating facilities	1-33 Protection of cultural asses	SECTION 3. MOBILIZATION
	9.6 Access on site	1-34 Traffic safety control	1.Contractor's Mobilization (program)

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	9.7 Power supply	1-35 Set of construction sign(E)	1.1 Land for construction purposes, detours, plant and other uses
	9.8 Lighting	1-36 Observance of all laws	1.2 Construction equipment and plant
	9.9 Water supply	1-37 Procedures to related authorities and companies	1.3 Contractor's office and other facilities
	9.10 Communications		1.4 Superintendents and assistants
	9.11 Sewage and sewage treatment	1-38 Guarantee of defect(E)	1.5 Contractor's workshop and warehouse
	9.12 Name boards	1-39 Survey for construction	2. Subsidiary requirements
	10. Services provided by the contractor	1-40 Damage by force majeure	2.1 Access roads
	10.1 Sanitation and cleaning	1-41 Patents	2.2 Temporary road for construction
	10.2 Medical facilities	1-42 Insurance and compensation for accident	2.3 Storage of materials
	10.3 Fire control	1-43 Occasional measure	2.4 Project information signs
	10.4 Security	1-44 Preservation of secrets(E)	2.5 Security fencing
	10.5 Weather and river level recording		2.6 Temporary lighting
	10.6 Progress photographs		2.7 Sanitary facilities
	10.7 Maintenance of structures, buildings, housing and facilities		2.8 Water
	10.8 Assistance for the engineer		2.9 Sewages
	10.9 Labor for nominated sub-contractors		2.10 Communication system
	11. Construction matters		3. Demobilization
	11.1 Programming requirements		4. Measurement and payment
	11.2 General responsibilities		4.1 Method of measurement
	11.3 Quality management		4.2 Basis of payment
	11.4 Approvals of materials and equipment		
	11.5 Contractor's labor, equipment and material reports		SECTION 4. ENGINEERING SERVICES



Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
	12. Standards, drawings and correspondence		
	12.1 Standards, codes and regulations		1.Description
	12.2 Drawings supplied to the contractor		2.Setting out of the work
	12.3 Design and drawings to be developed by the contractor		3. Measurements for pay quantities
	12.4 Submission and approval		4. Stability and settlement monitoring surveys
	12.5 Ownership of the drawings and data		5. Additional geotechnical engineering services
	12.6 Correspondence with the engineer		6. Measurement and payment
	13.Health and safety		
	13.1 General		SECTION 5. FACILITIES FOR THE ENGINEERS
	13.2 Health and safety policy		
	13.3 Code of practice within the policy		1. Requirements
	13.4 Safety officers		2. Offices for engineers
	13.5 Epidemics and hazardous substances		2.1 Engineer's main site office
	13.6 First aid provisions		2.2 Site office communication requirements
	13.7 Rescue teams		2.3 Site office operation requirements
	13.8 Lighting and power		2.4 Engineers accommodations
	13.9 Transport of personnel		2.5 Vehicles for engineers
	13.10 Safety of public		3. Measurement and payment
	13.11 Storage and use of explosives		
	13.12 Warning of blasting		SECTION 6. SUBMITTALS
	13.13 Lighting		
	14. Environmental considerations		
	14.1 General		1.Requirements
	14.2 Protection and replanting of the flora		1.1Submittals classification and list
	14.3 Protection of the fauna		1.2 Submittals requirements
	14.4 Erosion control and storm-water management		1.3 Project records
	14.5 Spoil dumps and stockpiles		1.4Drawings
	14.6 Dust control		1.4.1General

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
	14.7 Noise pollution		1.4.2Preperation
	14.8 Relations with local communities		1.4.3Schejule and approval
	15. Survey and setting out		1.5Photographs and videos
	15.1 Scope		2. Measurement and payment
	15.2 General		
	15.3 Control beacons		SECTION 7. PROGRAM OF WORK
	15.4 Preservation and replacement of beacons and bench marks		1. Description
	15.5 Survey of ground profiles		2. Requirements
	15.6 Setting out of the works		2.1 General
	15.7 Setting out checks		2.2 Program composition and contents
	15.8 Lines and levels of reference for erection of equipment by others		2.3 Schedules
	15.9 Survey assistance and helpers		2.4 Submittal and approval
	16. Dealing with water		2.5 Up-date and cash-flow
	16.1 General		3. Measurement and payment
	16.2 Surface works		
	16.3 Water discharged from working areas		SECTION 8. PROJECT SAFETY
	16.4 Water control during concreting		1. Description
	16.5 Settlement ponds		2. Requirements
	17. Diversion and control of the river		2.1 General
	18. Measurements and payments		2.2 Safety plan
	18.1 Principles		2.3 Safety manager
	18.2 Bill of quantities section A-Preliminary and general		2.4 Special requirements for safety
			3. Measurement and payment
			SECTION 9. MAINTENANCE AND PROTECTION OF TRAFIC
			1. Description
			2. Requirements
			2.1 General
			2.2 Traffic control plan
			2.3 Traffic supervisor

Bridge project	Hydropower project	Overseas case (Japanese Case)	Standard Structurer (Draft)
			2.4 Special requirements for traffic control
			2.4.1 Works for traffic control
			2.4.2 Materials for traffic control devices
			2.4.3 Maintenance of equipment and devices for traffic control
			2.4.4 Traffic control during non-working hour
			2.4.5 Traffic control during night time
			2.4.6 Traffic control conserving existing traffic
			2.4.7 Temporary road works
			2.4.8 Temporary traffic ramps
			2.4.9 Passing of other contractors
			2.4.10 Number of lanes for traffic control
			2.4.11 Half-width construction
			2.4.12 Vertical clearance
			3. Measurement and payment
			3.1 Method of measurement
			3.2 Basis of payment
			SECTION 10. ENVIRONMENTAL CONTROL AND PROTECTION
			1. Description
			2. Requirements
			2.1 Regulations and reference standards
			2.2 General
			2.3 Contractor's plan for environmental control and protection (The environmental control plan)
			2.4 Environmental manager
			2.5 Special requirements for environmental control)
			2.5.1 Baseline monitoring
			2.5.2 Air quality and dust

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			2.5.3 Water quality
			2.5.4 Vibration and noise
			2.5.5 Waste and soil contamination
			2.5.6 Other environmental aspects
			2.5.7 Environmental monitoring system
			3. Measurement and payment
			3.1 Basis of payment
			SECTION 11. LABORATORY AND ENGINEER'S EQUIPMENT
			1. Description
			2. Requirements
			2.1 Reference standards
			2.2 General
			2.3 Special requirements
			2.3.1 Special requirements for the laboratory
			2.3.2 Equipment and instruments for the laboratory
			2.3.3 Laboratory check by the engineer
			2.3.4 Survey and testing equipment and personnel supplied to the engineer
			2.4 Certificate of satisfactory laboratory operation
			3. Measurement and payment
			3.1 Basis of payment
			SECTION 12. CONTRACTOR'S QUALITY CONTROL
			1. Description
			2. Requirements
			2.1 Reference standards
			2.2 General
			2.3 Contractor's plan for quality control

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			(QCP)
			2.4 Quality control for manager ( the QC manager)
			2.5 Special requirements for quality control
			2.5.1 Laboratory, testing inspection, sampling and testing procedures
			2.5.2 Certified laboratory tests and manufacturer's certification
			2.5.3 Quality control's records and reports
			2.6 Acceptance and notification of non-compliance
			2.6.1 Acceptance
			2.6.2 Notification of non-compliance
			2.6.3 Certificate of satisfactory quality control
			3. Measurement and payment
			2. Purpose of this section
			3. Definitions
			3.1 Reference standards
			3.2 Object to the acceptance
			3.3 Evaluation of lot
			3.4 Decision to accept or reject
			3.5 Dispersion range of the work
			3.6 Acceptance with award
			3.7 Payment factor
			3.8 Combined payment factor (Pfg)
			3.9 The monitoring schedule for acceptance of work
			3.10 Special requirement for acceptance of work
			3.11 Certificate of acceptance of work
			4. Measurement and payment

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			SECTION 13. CONTROL OF MATERIALS
			1. Description
			2. Requirements
			2.1 Reference standards
			2.2 General
			2.3 The schedule of materials
			2.4 Special requirements for the control of materials
			2.5 Acceptance and notification of non-compliance
			2.5.1 Acceptance
			2.5.2 Notification of non-compliance
			2.5.3 Certificate of satisfactory control of materials
			3. Measurement and payment

