

**THE 14<sup>TH</sup> ASIACONSTRUCT CONFERENCE**

***SINGAPORE-COUNTRY REPORT***

Prepared by

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SINGAPORE

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**EXECUTIVE SUMMARY**

Since the recovery from the SARS outbreak in 2003, Singapore's economy experienced strong growths ranging from 7% to 9% in the past four years. However, for the first half of 2008, Singapore's economic growth has moderated to 4.5% as a result of the downside impact of the weakening global economy due to the U.S. sub-prime financial crisis. In view of the likely continued weakness in the global economic environment, the Ministry of Trade and Industry has projected the GDP growth for the full year of 2008 to moderate to 4%-5%.

The strong economic fundamentals and the launching of mega projects such as the two integrated resorts and a new financial centre has led to a significant upturn in the domestic construction industry, which has been posting double-digit growth since 2007. Total construction demand in 2007 increased to S\$24.5 billion, and is projected to reach S\$27 billion to S\$32 billion in 2008. The surge in construction activities, coupled with the global increase in demand for raw materials and higher freight and fuel costs, has led to more intense pressure on construction resources and building capacity.

## 2 Macro Economic Review and Outlook

### 2.1.1 Overview of the Singapore Economy in 2007<sup>1</sup>

The Singapore economy had enjoyed strong sustainable growth in the past four years. It grew by 7.7% in 2007. All major sectors expanded in 2007.

For the whole of 2007, growth in the manufacturing sector moderated to 5.8%, lower than the 12% registered in 2006. In terms of performance by cluster, the transport engineering cluster continued to expand at a robust 24% while the electronics, chemicals and general manufacturing industries clusters recorded modest growths, ranging from 3.3% to 6.3%. In contrast, the biomedical manufacturing cluster contracted by 0.6%, as a result of lower production of active pharmaceutical ingredients due to plant maintenance shutdowns and changes in product mix.

Total investment commitments in the manufacturing sector were very strong in 2007 and reached \$16.6 billion, nearly doubled the amount clinched in 2006. About 91% of these commitments went to projects in the chemicals, electronics and biomedical manufacturing clusters.

The wholesale and retail trade sector expanded by 7.3% in 2007, underpinned by higher retail sales of telecommunications and computers, as well as furniture and household equipment. On the other hand, the transport and storage sector grew at a faster 5.1% compared to the 4.7% recorded a year ago. The financial services sector expanded by a strong 17%, mainly fuelled by a bullish stock market and active trading activity in the foreign exchange market. Similarly, the business services sector grew by a strong 7.8%, its strongest pace in the past decade. The star performer of this sector was the real estate segment which enjoyed a robust 8.7% expansion, as a result of the record levels of transaction activity and launches in the private residential market which led to 31% increase in prices.

The construction sector expanded 20% in 2007, its fastest growth since 1996. The buoyant construction activities were due to a broad-based expansion in private sector construction activities, while in contrast, public sector construction activities stayed relatively unchanged compared to a year earlier.

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<sup>1</sup> Source: Economic Survey of Singapore, 2007 and second quarter 2008, Ministry of Trade and Industry Singapore.

Backed by a strong economy, total employment creation in the whole of 2007 hit a record high of 236,600, while full year overall unemployment rate dropped to a decade low of 2.1%. Similarly, retrenchment for the whole of 2007, at 7,200 workers, was also at its lowest in 14 years.

### **2.1.2 Economy in the First Half of 2008**

Despite the slowdowns in major world economies and rising concerns of global inflation, the Singapore economy remained resilient in the first half of 2008 and grew by 4.5% year-on-year.

Reflecting the downside impact of the weakening global economy arising from the U.S. sub-prime financial crisis, Singapore economic growth moderated to 2.1% in the second quarter of 2008, lower than the 6.7% in the first quarter. Underpinned by the strong level of construction activities owing to the significant upturn of the construction industry since early 2007, the construction sector continued to remain as the star performer and grew by 17.4% in the second quarter of 2008. However, overall GDP growth was dragged down by a sharp contraction in biomedical manufacturing value-added and stagnant growth in the electronics industry.

The Ministry of Trade and Industry (MTI) Singapore expects GDP growth in the second half of 2008 to be broadly similar to the first half, on account of the likely continued weakness in the global economic environment for the rest of 2008 and well into 2009. In view of the softening outlook for domestic electronics and biomedical manufacturing clusters as well as a slowdown in global external environment, the MTI has narrowed the 2008 GDP growth forecast to 4%-5%.

## 2.2 Main Economic Indicators

Year	2003	2004	2005	2006	2007
<b>GDP and Components</b>					
GDP at real prices (Base Year=2000) (S\$Million)	168,150	183,271	196,646	212,712	229,123
GDP at current market prices	162,288	184,508	199,375	216,995	243,169
GDP growth (%)	3.5	9.0	7.3	8.2	7.7
Manufacturing sector (Base Year=2000) (S\$Million)	40,583	46,205	50,592	56,623	59,911
% growth	2.9	13.9	9.5	11.9	5.8
Wholesale & Retail Trade Sector (Base Year=2000) (S\$Million)	23,995	28,220	31,636	34,929	37,489
% growth	10.6	17.6	12.1	10.4	7.3
Transport & Storage Sector (Base Year=2000) (S\$Million)	15,686	17,373	18,224	19,079	20,044
% growth	-0.6	10.7	4.9	4.7	5.1
Financial Services (Base Year=2000) (S\$Million)	19,083	19,920	21,335	23,586	27,566
% growth	10.7	4.4	7.1	10.6	16.9
Business Services (Base Year=2000) (S\$Million)	20,792	21,221	22,217	23,740	25,593
% growth	0.6	2.1	4.7	6.9	7.8
Construction sector (Base Year=2000) (S\$Million)	7,041	6,654	6,703	6,943	8,353
% growth	-8.9	-5.5	0.7	3.6	20.3
<b>Demographic Indicators</b>					
Population – Singapore Residents <sup>1</sup> ('000)	3,366.9	3,413.3	3,467.8	3,525.9	3,583.1
Population growth rate (%)	1.6	1.4	1.6	1.7	1.6
Total labour force ('000)	2,312.3	2,341.9	2,367.3	2,594.1	2,750.5
Labour force growth rate (%)	-0.4	1.3	1.1	9.6	6.0
Unemployment rate (%) – Seasonally adjusted as in June	3.6	3.6	3.3	2.7	2.3
<b>Financial Indicators</b>					
Savings deposits (%) (Average quotes from 10 leading banks)	0.24	0.23	0.26	0.25	0.25
Prime lending rates (%) (Average quotes from 10 leading banks)	5.30	5.30	5.30	5.33	5.33
Changes in consumer price index (Base period = 2004, % change over previous year)	0.5	1.7	0.5	1.0	2.1
Annual average exchange rate with \$US (Singapore Dollar Per US Dollar)	1.74	1.69	1.66	1.59	1.51

<sup>1</sup> Singapore resident population comprises Singapore citizens and permanent residents.

<sup>2</sup> The Industries are classified according to Singapore Standard Industrial Classification 2005.

Sources: Singapore Department of Statistics, Ministry of Trade and Industry and Ministry of Manpower Singapore.

### **3.1 Overview of the Construction Industry**

#### **3.1.1 Construction Demand Review for 2007**

Total construction demand<sup>2</sup> in 2007 increased by 46% to \$24.5 billion, underpinned by the record high private sector construction demand and also strengthened public sector construction demand on account of increased housing, educational and civil engineering construction contracts.

##### **Public Sector**

After hitting a low of \$3.7 billion in 2006, public sector construction demand increased by about 54% to \$5.7 billion in 2007. Public housing construction demand grew by about 50% to \$1.8 billion, driven by various Housing Development Board's new housing developments and upgrading projects. Institutional construction demand increased from \$1.2 billion to \$1.5 billion, dominated by the Ministry of Education's Programme for Rebuilding and Improving Existing Schools (PRIME) and other educational building construction like Singapore Arts School and Duke-NUS Graduate Medical School. On the other hand, civil engineering construction demand in 2007 nearly doubled 2006's level and reached \$2.1 billion, fuelled by contracts awarded for the construction of MRT Downtown Line Stage 1 as well as major road projects such as upgrading of Woodsville Interchange and an iconic bridge structure along Marina Bay.

##### **Private Sector**

Private sector construction demand continued its strong growth momentum, surging to \$18.8 billion in 2007. The surge was upheld by a significant pick-up in construction demand derived from continued economic growth, bullish property market and strong foreign investments.

Riding on the buoyant private home market, residential construction demand grew strongly by about 37% to \$5.6 billion in 2007. Similarly, fuelled by the developments of Marina Bay Sands Integrated Resort, Resorts World at Sentosa, Marina Bay Financial Centre, Somerset Central and other hotel developments, private commercial construction demand shot up to a record high of \$5.1 billion.

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<sup>2</sup> Construction demand is measured by total value of construction contracts awarded. All construction demand figures exclude reclamation projects.

Industrial construction demand continued to thrive in 2007, amounting to \$6.8 billion. High-tech industrial developments and petrochemical plants remained the key feature in industrial construction.

### **3.1.2 Construction Demand Forecast for 2008**

Based on BCA's Development Plans Survey conducted in May/June 2008 and the actual construction demand recorded up till July 2008, total construction demand is projected to reach between \$27 billion and \$32 billion in 2008. Private sector construction demand will continue to lead the construction demand in 2008, although it is expected to moderate slightly to between \$16.5 billion and \$18.5 billion. On the other hand, public sector construction demand is anticipated to increase to between \$10.5 billion and \$13.5 billion, with broad-based expansions in all development types.

#### **Residential Construction Demand**

##### **Public Housing**

Public residential construction demand is projected to increase to between \$3 billion and \$3.4 billion in 2008, in view of recent strong take-up rates of public housing flats, on-going lift upgrading programme as well as continual hostel developments by the local universities as a result of expected higher student intakes.

##### **Private Housing**

Following the abolishment of deferred payment scheme in October 2007 and the U.S. sub-prime mortgage financial crisis, private property market sentiments seem to have turned more cautious as reflected by the recent slowdown in project launches and property transactions. Nevertheless, underpinned by various committed projects, private housing construction demand is expected to remain strong at between \$5.1 billion and \$5.8 billion in 2008.

#### **Commercial Construction Demand**

Supported by the appreciating capital values, good rentals driven by bullish demand for prime office and retail spaces as well as the launching of the two Integrated Resorts, commercial demand will be the star performer in 2008 and is expected to reach between \$7.2 billion and \$7.8 billion.

### **Industrial Construction Demand**

Due to the current weakening global economy which is impacting on foreign investments, total industrial construction demand is expected to moderate to between \$4.1 billion and \$4.8 billion in 2008. State-of-the-art industrial developments with high-tech features will continue to be in the limelight this year.

### **Institutional & Other Building Construction Demand**

Total institutional & other building construction demand is forecast to hit \$3.6 billion to \$4.0 billion in 2008. The main contributors to this category include the development of another hospital in the north and upgrading of Changi Airport Terminal 1 building and the construction of conservatories for Gardens at Marina South.

### **Civil Engineering Construction Demand**

Civil engineering construction demand is expected to increase significantly to between \$4.0 billion to \$6.2 billion in 2008. Several strategic projects have been slated to proceed this year to support the Marina Bay area. These include the 5-km long Marina Coastal Expressway and the remaining contracts of MRT Downtown Line Stage 1.

Table 3.1a: Breakdown of Construction Demand\*

Billion Singapore Dollars

	2003	2004	2005	2006	2007	2008 (Revised Forecast as of Aug 2008)
<b>Both Sectors</b>	<b>10</b>	<b>10.3</b>	<b>11.5</b>	<b>16.8</b>	<b>24.5</b>	<b>27.0 - 32.0</b>
Building Work	8.7	7.5	9.8	14.9	21.5	23.0 - 25.8
<i>Residential</i>	<i>3</i>	<i>3.9</i>	<i>3.7</i>	<i>5.3</i>	<i>7.4</i>	<i>8.1 - 9.2</i>
<i>Commercial</i>	<i>0.5</i>	<i>1.1</i>	<i>1</i>	<i>2.4</i>	<i>5.2</i>	<i>7.2 - 7.8</i>
<i>Industrial</i>	<i>2</i>	<i>1</i>	<i>3.1</i>	<i>5.5</i>	<i>7</i>	<i>4.1 - 4.8</i>
<i>Institutional &amp; Others</i>	<i>3.1</i>	<i>1.5</i>	<i>1.9</i>	<i>1.7</i>	<i>1.9</i>	<i>3.6 - 4.0</i>
Civil Engineering Work	1.3	2.8	1.7	1.9	3	4.0 - 6.2
<b>Public Sector</b>	<b>5.4</b>	<b>4.6</b>	<b>4</b>	<b>3.7</b>	<b>5.7</b>	<b>10.5 - 13.5</b>
Building Work	4.2	2.6	3	2.6	3.6	7.3 - 8.2
<i>Residential</i>	<i>1.1</i>	<i>1.3</i>	<i>1.1</i>	<i>1.2</i>	<i>1.8</i>	<i>3.0 - 3.4</i>
<i>Commercial</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.1</i>	<i>0.2 - 0.2</i>
<i>Industrial</i>	<i>0.6</i>	<i>0.1</i>	<i>0.4</i>	<i>0.1</i>	<i>0.2</i>	<i>1.1 - 1.4</i>
<i>Institutional &amp; Others</i>	<i>2.4</i>	<i>1.1</i>	<i>1.4</i>	<i>1.2</i>	<i>1.5</i>	<i>3.0 - 3.2</i>
Civil Engineering Work	1.2	2	1	1.1	2.1	3.2 - 5.3
<b>Private Sector</b>	<b>4.6</b>	<b>5.7</b>	<b>7.5</b>	<b>13.1</b>	<b>18.8</b>	<b>16.5 - 18.5</b>
Building Work	4.5	4.9	6.8	12.3	17.9	15.7 - 17.6
<i>Residential</i>	<i>1.9</i>	<i>2.6</i>	<i>2.6</i>	<i>4.1</i>	<i>5.6</i>	<i>5.1 - 5.8</i>
<i>Commercial</i>	<i>0.4</i>	<i>1</i>	<i>0.9</i>	<i>2.3</i>	<i>5.1</i>	<i>7.1 - 7.7</i>
<i>Industrial</i>	<i>1.4</i>	<i>1</i>	<i>2.7</i>	<i>5.4</i>	<i>6.8</i>	<i>2.9 - 3.4</i>
<i>Institutional &amp; Others</i>	<i>0.7</i>	<i>0.3</i>	<i>0.5</i>	<i>0.5</i>	<i>0.4</i>	<i>0.6 - 0.8</i>
Civil Engineering Work	0.2	0.8	0.7	0.8	0.9	0.8 - 0.9

\*Measured by total value of construction orders or contracts awarded, and excluding reclamation contracts

Source: Building and Construction Authority

Table 3.1b: List of Major Projects in the Pipeline

Name of project	Brief description of project	Period	Estimated Value of project (S\$)
<b>Residential</b>			
Public Housing	590 blocks in 58 Housing Board sites islandwide are slated for Home Improvement Programme (HIP) and Neighbourhood Renewal Programme (NRP)	To complete in 5 years	NA
Public Housing	Retrofitting of HDB blocks to enable lifts stopping at every floor under Lift Upgrading Programme	To complete by 2014	NA
<b>Commercial</b>			
South Beach	Erection of a block of 45-storey and a block of 42-storey towers comprising hotels, offices, apartments and restoration of 4 conservation buildings	2009-2012	NA
Marina View (North Tower & South Tower)	Erection of 2 blocks of commercial tower with a 20-metre tall podium at land parcels A&B, Marina View	2009-2012	NA
Marina Bay Financial Centre Phase 2	Erection of a 47-storey office building with 6-storey retail & 3 levels basement	To complete by 2011	NA
Integrated Resorts	Development of two Integrated Resorts at Marina Bay and Sentosa (Remaining Contracts)	2008-2010	\$2.6 billion
<b>Industrial</b>			
Liquefied Natural Gas (LNG) Terminal	Construction of the liquefied natural gas receiving terminal at Jurong Island	2009-2012	\$1 billion
Jurong Rock Cavern	Design & Construction of Underground Caverns and Associated Facilities for Phase 1 Jurong Rock Cavern	2008-2014	\$700 million
<b>Other Building</b>			
Sports Hub	Erection of Sports Hub at Kallang	To complete by 2012	\$1.2 billion
National Arts Gallery	Conversion of former Supreme Court/City Hall to the National Arts Gallery at St. Andrew's Road	2010-2013	\$320 million
Jurong General Hospital	Erection of a 550-bed Jurong General Hospital and a 220-bed community hospital at Jurong East Street 21/ Boon Lay Avenue	2010-2015	NA

3 <sup>rd</sup> ITE Regional Campus	Development of 3 <sup>rd</sup> Regional Campus for Institute of Technical Education	2010-2012	NA
Gardens By The Bay (Marina South)	Development of Conservatories, Supertrees, Energy Centres, Support Facilities for Gardens By The Bay at Marina South	2008-2010	NA
Student Hostels	Erection of two student hostel developments at Middle Road and former Selegie Primary School site for Singapore Management University	2009-2011	NA
<b>Infrastructure</b>			
Marina Coastal Expressway	Development of a 5 km long Marina Coastal Expressway (MCE). The route comprises a 3.6 km long underground tunnel and a 1.5 km above ground/depressed road structure.	2008-2013	\$2.5 billion.
Downtown Line (3 Stages) (MRT)	Construction of Downtown Line with 40 stations. The Downtown Line (DTL) will be built in three stages.	Stage 1 (2008-2013) Stage 2 (2009-2015) Stage 3 (To complete by 2016)	\$12 billion
MRT Eastern Region Line (MRT)	The 21km Eastern Region Line with 12 Stations will serve the residential estates of Tanjong Rhu, Marine Parade, Siglap, Bedok South and Upper East Coast and link them to Changi in the east.	To complete by 2020	NA
Thomson Line (MRT)	The 27km Thomson Line with 18 stations will travel northwards, through the Central Business District and up through Ang Mo Kio all the way to Woodlands connecting estates such as Sin Ming, Kebun Baru, Thomson and Kim Seng which do not now have a direct MRT link.	To complete by 2018	NA
Extension to East-West Line (MRT)	The 14km Tuas extension with 5 stations will bring the East-West line right into the heart of Tuas.	To complete by 2015	NA
Extension to North-South Line (MRT)	The 1km North-South line extension with 1 station will improve accessibility to Marina Bay area.	To complete by 2015	NA
North South Expressway	Construction of a 21-km North South Expressway	To complete by 2020	About \$8 billion

Source: *Building and Construction Authority*

NA: Information unavailable

### 3.2 Construction Companies

The total number of companies registered under BCA Contractors Registry has been on an uptrend and reached 6,819 firms by end August 2008. Of these, 59 firms are A1 contractors with unlimited tendering limit for public sector projects.

**Table 3.2: Trend of Registered Contractor**

Year (calendar)	2003	2004	2005	2006	2007	2008*
No. of registered contractors	4739	5167	5621	5942	6346	6819

Note: Firm with multiple workheads registered is considered as a single registered entity.

\*No. of registered contractors as at 31 August 2008

### 3.3 Construction Manpower

Construction employment has continued to grow strongly as the level of construction activities increases. According to the employment statistics released by the Ministry of Manpower, construction employment grew by 40,400 in 2007 and another 36,900 in the first half of 2008. This brings total employment in the construction sector to 332,800 persons as of June 2008, and accounted for 11.6% of total national employment.

The heightened construction activities over the next one to two years will continue to underpin job creation in the construction sector. The anticipated strong construction manpower demand at all levels, coupled with the continued tightness in overall employment market as a result of buoyant job opportunities in other sectors, will likely lead to more intense pressure in the sourcing of manpower, in particular professional and supervisory staff.

### 3.4 Productivity

In tandem with the buoyant construction activities, the labour productivity of the construction sector (in terms of value-added per employee) increased by 7.6% in 2007. Likewise, overall construction site productivity has also improved from 2.62 manday per square metre in FY2003 to 2.55 manday per square metre in FY2006 and FY2007.

**Table 3.4.1: % Change in Value-Added Per Employee**

	2003	2004	2005	2006	2007
Construction Sector	1.4	-0.6	-0.1	-2.6	7.6

Source: Singapore Department of Statistics

**Table 3.4.2: Average Manpower Usage, Manday per Sqm**

Type of Project	FY2003	FY2004	FY2005	FY2006	FY2007
Public Residential	1.68	1.72	1.68	1.60	1.59
Private Residential (landed)	6.10	5.50	5.38	5.33	5.32
Private Residential (non-landed)	3.43	3.34	3.34	3.13	3.15
Commercial	3.15	3.05	3.04	2.73	2.74
Industrial	2.11	2.16	2.04	2.02	2.00
Institutional	2.35	2.20	2.22	2.10	2.11
Overall Average	2.62	2.58	2.56	2.55	2.55

Source: Building and Construction Authority

### 3.5 Construction Cost

#### 3.5.1 Tender Price Index

The strong construction demand coupled with escalating costs for construction resources, fuel and transportation has led to strong cost pressures. BCA's Building Works Tender Price Index (TPI)<sup>3</sup>, increased by about 19% in 2007 compared to a year ago. The increase was also partly on account of the cost impact of sand and granite supply disruptions occurred during the first quarter of 2007. However, if costs of sub-structure works and M&E works were factored in, the leading quantity surveyor firms and general industry feedback estimated an overall construction costs increase of 20% to 30% in 2007 compared to a year ago.

The high cement, steel and some other global construction materials prices due to potential supply constraints, surging costs on raw materials, ocean freight and fuel as well as increasing labour costs have continued to impact on the construction costs in 2008. BCA's Building Works TPI increased by another 7% by first half of 2008 compared to end 2007.

#### 3.5.2 Average Construction Material Prices

##### Concrete

In tandem with the rising volume of construction activities, the demand for ready-mixed concrete in 2007 increased by 5% compared to 2006 (Table 3.5.2). The demand for cement in 2007 rose by 16%, mainly driven by importers stocking up in anticipation of impending increase in cement prices in 2008.

<sup>3</sup> BCA's TPI excludes piling works, sub-structure works and M&E works. Based on industry feedback, these items have experienced the greatest increase in costs.

The market price for ready-mixed concrete<sup>4</sup> has stabilised in the region of \$125 to \$130 per cubic metre since end December 2007. In contrast, cement<sup>5</sup> (bulk) price remained on a firm uptrend at \$115 per tonne as of December 2007, and increased further to \$125 per tonne in July 2008 due to higher international cement prices.

Riding on the projected high construction output level in 2008, the estimated demands for cement and ready-mixed concrete are expected to increase by 26% and 35% respectively this year.

### **Reinforcement Bars (Rebars)**

In tandem with the global trend and the rising local construction activities, demand for rebar in 2007 rose by 14% to 0.8 million tonnes. For 2008, demand for rebars is expected to increase to about 1 million tonnes in anticipation of more construction activities.

Average market price for rebar<sup>6</sup> increased to about \$1,055 per tonne in December 2007 as a result of the strengthened global demand and soaring raw material costs. Prices had been on an uptrend since then and reached \$1,714 per tonne in July 2008 due to factors such as the Chinese Government's further restriction on steel exports due to domestic demand pressure, further price hikes of iron ore and coking coal, higher freight prices arising from port congestion and tightness in capacity as well as escalating fuel prices.

### **3.5.3 Construction Industry Salaries and Wages**

With the higher demand for construction manpower, construction professionals such as engineers and associate professionals and technicians enjoyed higher wage increases in 2007 (Table 3.5.3a). Compared to most other economic sectors, the average monthly earnings per employee in the construction industry was still relatively lower (Table 3.5.3b).

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<sup>4</sup> The price (inclusive of both delivery & GST) refers to Grade 35 pump ready-mixed concrete.

<sup>5</sup> The price (inclusive of both delivery & GST) refers to Ordinary Portland cement.

<sup>6</sup> The price (inclusive of both delivery & GST) refers to 20mm High Tensile rebar.

Table 3.5.2: Basic Construction Materials

Demand						
Year	Cement (Mil tonnes)	% Change	Ready-Mixed Concrete (Mil m <sup>3</sup> )	% Change	Steel Bars (Mil tonnes)	% Change
2006	3.12		7.09		0.69	
2007 (P)	3.60	16%	7.45	5%	0.79	14%
2008 (F)	4.50	26%	10.10	35%	1.07	36%
Current Market Prices						
Year	Cement (\$ per tonne)	% Change	Ready-Mixed Concrete (Grade 35 Pump) (\$ per m <sup>3</sup> )	% Change	Steel Bars (\$ per tonne)	% Change
Dec 2006	\$89		\$77*		\$744	
Dec 2007	\$115	30%	\$127	65%	\$1,055	42%
Jul 2008 (P)	\$125	8.7%	\$129	1.7%	\$1,714	62%

\*Grade 30 Normal

P: Preliminary figures

F: Forecast

Table 3.5.3a: Mean Monthly Gross Wages in Construction

Category	2005	2006	2007
Professionals (\$/month)	3,155	3,237	3,400
Associate Professionals and Technicians (\$/month)	2,565	2,646	2,736

Source: Report on Wages in Singapore, various years, Ministry of Manpower

Table 3.5.3b: Average Monthly Earnings Per Employee (\$ per month)

Industry	2005	2006	2007
Average	3,444	3,554	3,773
Manufacturing	3,495	3,618	3,764
<b>Construction</b>	<b>2,513</b>	<b>2,517</b>	<b>2,646</b>
Wholesale and Retail Trade	3,017	3,101	3,262
Transport and Storage	3,507	3,525	3,797
Hotels & Restaurants	1,360	1,381	1,442
Information & Communications	4,553	4,745	5,018
Financial Services	5,949	6,291	6,768
Retail Estate and Leasing Services	2,732	3,053	3,355
Community, Social & Personal Services	3,704	3,831	4,074

Source: Yearbook of Statistics Singapore, 2008.

### 3.6 Import and Export of Construction Services

#### 3.6.1 Import of Construction Services

Singapore has one of the most open construction markets in the world, with no special restrictions applied to foreign construction firms, for instance, the BCA's Contractors' Registry applies to all contractors, regardless of local or foreign firms. Foreign construction firms from countries such as Japan, South Korea and China have been undertaking many significant projects in Singapore.

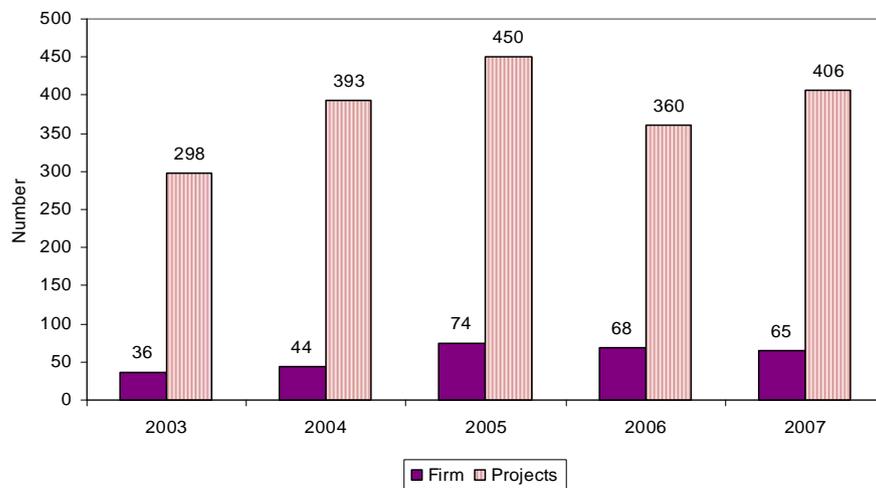
#### 3.6.2 Export of Construction Services

##### Construction Consultancy Services

Singapore consultants have been expanding their presence abroad since the early 2000s in response to the limited domestic construction market and increasing business opportunities overseas. By 2005, the number<sup>7</sup> of overseas consultancy projects clinched by Singapore firms rose to a record high of 450, from 298 in 2003. Following the upturn of the Singapore construction industry in 2006, the number of overseas consultancy projects clinched by Singapore firms fell 20% due to increase in job opportunities domestically.

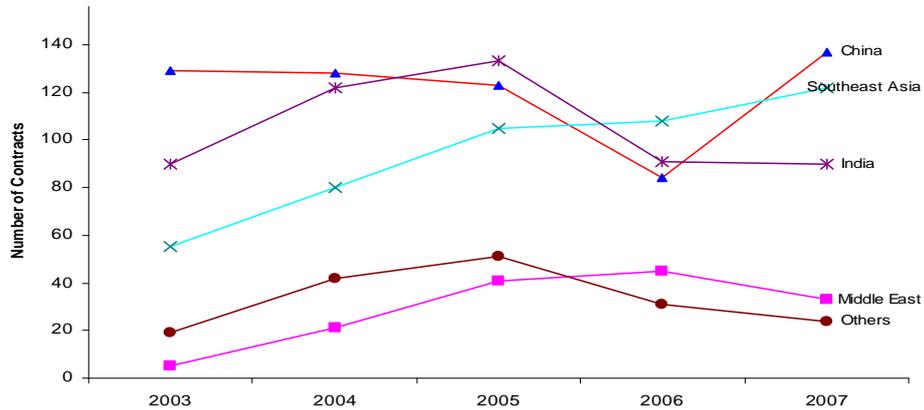
In 2007, however, Singapore consultants were active overseas despite the booming domestic market and had secured a total of 406 projects in 27 countries, a 13% year-on-year increase compared to 2006.

**Chart 3.6.2a: Number of Consultancy Firms and Projects, 2003 - 2007**



<sup>7</sup> Consultancy exports were reported in terms of number of contracts clinched instead of consultancy fees received due to sensitivity of the information.

Chart 3.6.2b: Trend of Overseas Consultancy Projects, 2003 - 2007



**Construction Services**

Singapore construction and engineering firms clinched \$2.7 billion worth of overseas contracts in 2007. Despite the overall good performance, the annual overseas contract values clinched by Singapore firms for general construction works<sup>8</sup> in the last three years were lower than that of 2004. The lack of growth could be due to the turnaround of the domestic construction industry which has been offering construction firms with numerous job opportunities.

Singapore firms<sup>9</sup> continued to perform well in securing environmental projects overseas, and environmental projects constituted nearly half of the total construction exports in 2007. It was noted that there had been an average 11% year-on-year increase during 2003-2007, fuelled by the rapid industrialisation in Middle East.

<sup>8</sup> Refers to construction of new buildings, additions and alterations to existing buildings and non-building construction such as roads, bridges, tunnels and the like.

<sup>9</sup> Singapore firms which secure overseas environment projects are generally non-construction firms which specialise in the building, operating and maintenance of water treatment/desalination plants.

Chart 3.6.2c: Value of Construction Exports by Singapore Firms, 2007

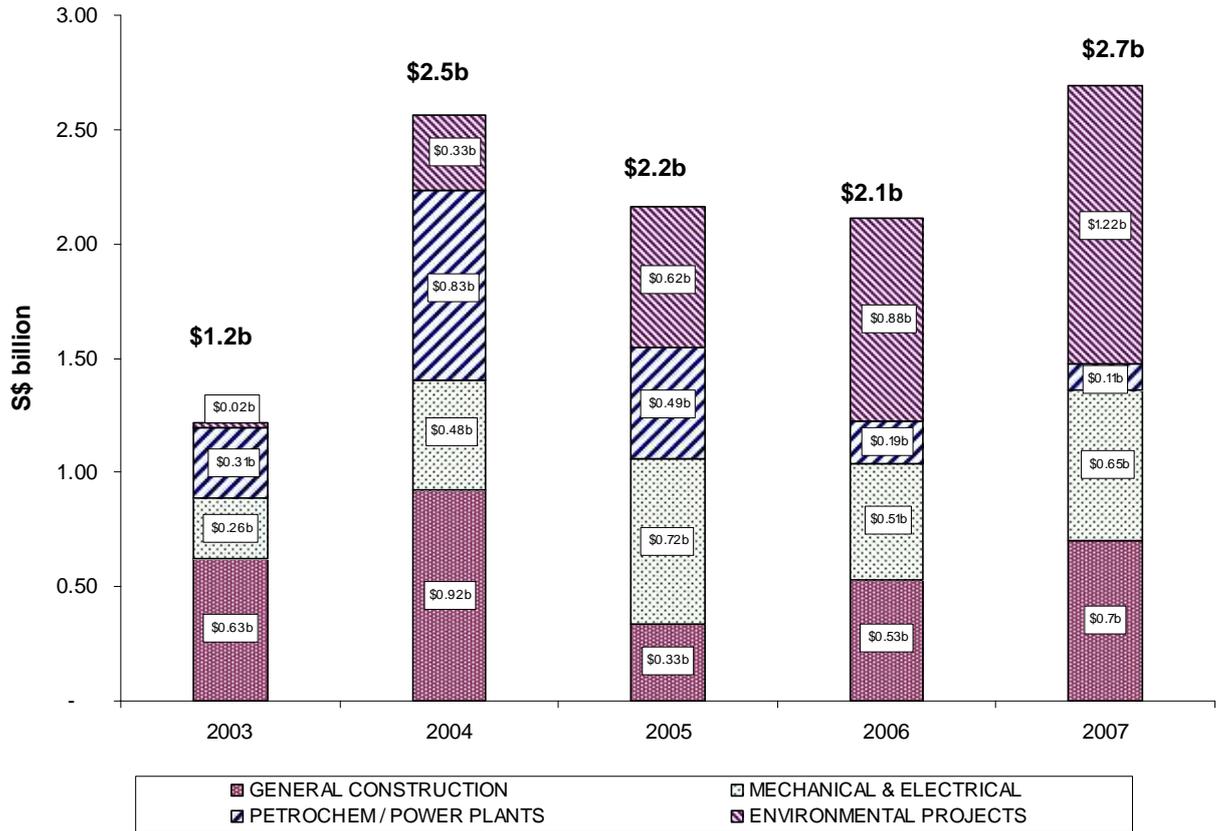


Table 3.6.2: Top Five Countries for Construction Exports in 2007

Position 2007	Country	Value (S\$mil)
1	Qatar	1,058
2	Bahrain	265
3	China	214
4	Libya	195
5	United Arab Emirates	184

Source: Building and Construction Authority

**THE 14<sup>TH</sup> ASIACONSTRUCT CONFERENCE**  
**SINGAPORE THEME PAPER:**  
**IMPROVEMENT OF THE PRODUCTIVITY OF THE CONSTRUCTION INDUSTRY**  
**THE BUILDING AND CONSTRUCTION INDUSTRY**  
**SECURITY OF PAYMENT ACT**

Prepared by

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**EXECUTIVE SUMMARY**

During the prolonged downturn in the early 2000s, subcontractors and suppliers faced delayed or non-payments for work done or materials supplied and had to take prolonged and expensive legal means to recover payment. The Security of Payment (SOP) Act was introduced to protect the weaker party in the payment chain and facilitate cash-flow by helping to speed up payment in the construction industry so as not to disrupt timely delivery of construction projects.

The SOP regime is characterised by three core pillars: statutory entitlement to payment for parties carrying out work or supplying goods or services for construction projects, low-cost and fast dispute resolution procedure via adjudication for disputed response or non-payment and rights to suspend work if not paid after adjudication. Following the Act's implementation, new standard forms for subcontract have been published, taking cue from the amendments of main contracts both in the public and private sectors. The introduction of the dispute settlement period under the SOP Act serves to promote amicable settlement among the parties, preserving the working relationship.

## **INTRODUCTION**

The productivity of the construction industry in timely delivery projects is in a way influenced by the promptness of payments for work done and services or goods supplied. However, payment problems are not uncommon in the construction industry worldwide. These problems are exacerbated by an industry downturn and highly inequitable and, in some cases, oppressive industry practices. Like its predecessors in the United Kingdom, Australia and New Zealand, Singapore turned to statutory enactments to protect the interests of the industry stakeholders, in particular the subcontractors and suppliers. It has been more than three years since the Building and Construction Industry Security of Payment Act (in short, the SOP Act) came into operation.

### ***Payment Disruption***

During the prolonged period of downturn in the early 2000s, many contractors were cash-strapped and some became insolvent. This amounted to “bottom up financing” by the subcontractors and suppliers funding through the entire works. Subcontractors and suppliers who worked and supplied for main contractors experienced delayed or non-payments for work done or materials supplied and had to take prolonged and expensive means such as arbitration or litigation to recover their money. The failure in the smooth and timely payments down the value chain could trigger a collapse of a part or the whole of that chain and more importantly, a severe delay in the progress of the project.

### ***Need for Legislative Intervention***

Payment problems, while not unique to the construction industry, are often seen to be worse in this industry than in others. This is because of its multi-tier pyramidal structure of the parties involved, the long construction periods, and the common law position on contractual conditions which lock in those further down the value chain such as payments that often depend on payments further upstream (conditional payment or ‘pay when paid’) and prohibitions on work stoppages or suspensions. The position of subcontractors and suppliers is further weakened by contractual terms which tend to favour those higher up the chain.

A need for legislative intervention is, therefore, necessary to protect the weaker party, in particular the subcontractors and suppliers, and to modify the effects of common law, and codify areas of law as well as to regulate the dispute resolution method by providing a fast and low cost dispute resolution mechanism that is binding in nature. The SOP Act and Regulations came into operation on 1 April 2005.

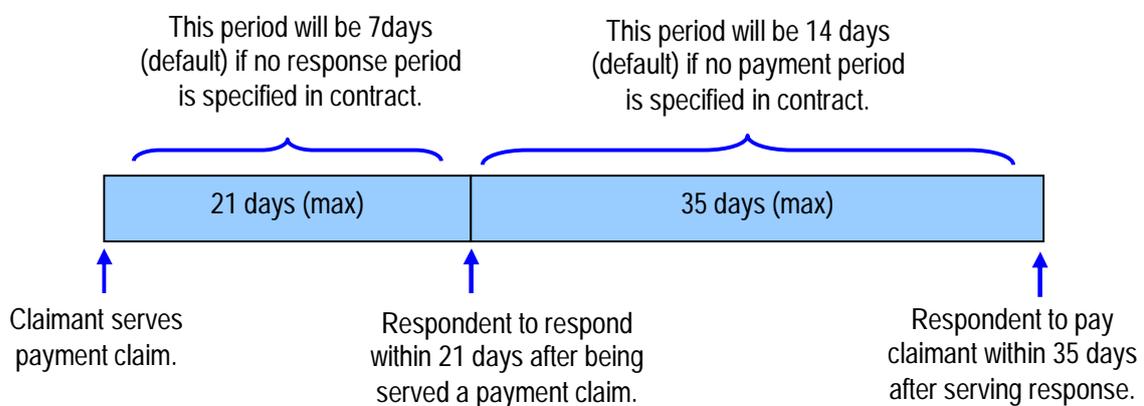
## KEY FEATURES OF THE LEGISLATION

The legislation covers two types of contracts: construction contracts (which includes consultancy services) and supply contracts whereby the construction work or related goods and services must be carried out or supplied for a project or site located in Singapore. The Act applies only to written contracts or the written portion of the contract for the construction work or the construction-related services or goods. The SOP regime is characterised by three core pillars: statutory entitlement to payment, low-cost and fast dispute resolution procedure via adjudication and rights to suspend work if not paid.

### *Statutory Entitlement to Payment*

First, it is the statutory entitlement of a party in a written contract who has carried out construction work or supplied related goods or services to progress payments. Contracting parties can agree on terms of payment including when payments are due under the contract. However, the Act will provide for default payment periods if there are no contractual provisions, as well as maximum number of days for payment response and payment due under a contract. In the absence of contractual provision, the default response due date shall be 7 days after a payment claim is served and the payment due date shall be 14 days after a payment response is served. The Act also caps the payment response time to a maximum of 21 days after a payment claim is served and a maximum payment due date to 35 days after the date of payment response is provided.

Figure 1: Payment Timeline for Construction Contracts



Most of the major standard forms of construction contracts do expressly provide for a date on which a progress payment becomes due and payable. However, it was observed that “experiences in other countries have shown that parties with greater bargaining power are likely to impose longer

payment periods on the other parties to circumvent the rights to payment in the SOP Act". To prevent this, the Singapore SOP Act caps the payment period to override unreasonable contractual payment terms and to prevent such exploitation of the freedom of contract which runs contrary to the intent of the legislation. At the same time, this cap is also cleverly introduced to serve a means to keep the overall payment period in check so as to appease the industry's concern over an extended response and payment period.

The Act also seeks to stamp out "pay when paid" contractual provision which makes downstream payments dependent on upstream payments over which they have no control, especially in subcontracts and sub-subcontracts. The Act states that "pay when paid" including various derivatives of such provisions are unenforceable and of no effect in relation to progress payments. If the respondent is withholding any amount from the payment claim, he must provide reasons in his payment response.

This entitlement to payment is further reinforced by the all encompassing statement of policy intent that provisions of the SOP Act cannot be contracted out and, in particular, any provision which purports to exclude, modify, restrict or in any way prejudice (or has such effect on) the operation of the Act or any part thereof is to be rendered void. This includes a provision that may reasonably be construed as an attempt to deter a person from taking action under the Act.

### ***Low-cost and Fast Adjudication***

The second core pillar is a low-cost and fast-track dispute resolution proceeding via adjudication with interim binding determination capable of being enforced readily, upholding the statutory entitlement to payment. This process aims to expedite resolution of disputes between parties and hence, a step in the right direction towards enhancing the operating environment of the construction industry by improving cash-flow condition of stakeholders in the construction industry.

Only the claimant has the right to apply for adjudication through the Authorised Nominating Body (ANB) if he does not receive any payment response or full payment or disputes the response amount by the respondent after a seven-day dispute resolution period provided for under the Act. The procedures, including the timelines and the adjudication fees, are prescribed by the legislation.

The ANB shall appoint an adjudicator who must make a determination within 14 days after commencement of the adjudication or any longer time requested by the adjudicator and agreed to by both the claimant and respondent. The determination is binding and the adjudicated amount is payable by the due date unless and until the dispute is determined by a court or tribunal or at any other dispute resolution proceeding, or settled by agreement of the parties. The respondent may apply for the review of the adjudication determination if he is dissatisfied with the determination, provided the disputed amount is above the prescribed amount under the Regulations.

The Act allows for adjudication even if the dispute is the subject of a court proceeding or arbitration, or of any other dispute resolution procedure. Similarly, the Act does not limit any other contractual entitlement the party may have for remedies under any such other dispute resolution procedures. Submission to other dispute resolution procedures, including application to court, also does not end or affect the adjudication. However, an adjudicator must terminate the adjudication proceedings if the dispute is resolved by such other dispute resolution procedure.

### ***Rights to Suspend Work (and Other Resources)***

The right to suspend work or supply in order to enforce payment aims to provide a legitimate temporary exit route particularly for subcontractors if not paid in full or not paid at all. Without this, the risk of non-payments would still be there and the subcontractors would still be subject to the imbalance of power. They would be obliged to continue to work albeit at a slower pace and in the process bleed to collapse. If those further down the pyramid are entitled to suspend work for non-payment, it might not prevent the collapse of the main contractor, but it would likely bring down fewer parties and cause considerably less losses to those downstream.

On rights to suspend work or supply, Singapore's cautious approach could be attributed to its small but extremely fast-paced economy whereby any financial impact as a result of suspension of projects would be magnified. Hence, it cannot afford to allow "unnecessary" delay of project which would result in increase in project cost. In addition, several safeguards are also incorporated to prevent abuse of the right to suspend work or supply (for example, the claimant having to serve a prior seven-day notice of such intention to suspend work/supply on the respondent / project owner).

The Act also includes other recourses to the claimant such as the right to exercise lien on goods and enforcement of an adjudication determination as a judgment debt. The principal who is the

respondent's immediate client can also make direct payment to the claimant when the respondent fails to pay the adjudicated amount and recover it from the respondent.

## **POST-IMPLEMENTATION OBSERVATIONS**

### *Conditions of Contract*

Following the implementation of the SOP Act, two of the major standard forms most commonly used in Singapore, the Public Sector Standard Conditions of Contract (PSSCOC) and the Singapore Institute of Architects Standard Form of Building Contract (SIA Contract), have undergone some amendments in an attempt to be in line with the SOP regime.

One of the amendments is the change to payment response provisions. The PSSCOC expressly provides for two types of payment response: the deemed payment response which is effectively a payment certificate issued by the superintending officer and the employer's payment response which will take precedence if it complies with the requirements of the Act or a "merged system". The SIA Contract, however, differs from the approach taken by the PSSCOC. It maintains the independence of the interim certificate to be issued by the architect separate from the payment response to be provided by the employer who is given at least seven days after the issuance of the interim certificate to provide his response. It is also noticed that some subcontracts have also mirrored closely either of the above standard forms on the provisions for payment response.

From the adjudication cases determined so far, it is found that the supposed "payment response" as asserted by the respondents appeared in various forms, in particular the initial cases. In an adjudication case, the respondent's purported payment response by way of letter was served within the prescribed timeline of the Act. However, the letter which was served during the dispute settlement period, in form and substance, must still comply with the requirements of section 11(3) of the Act and Regulation 6 of the Regulations, including the need to state the response amount and reasons for any differences between the claimed amount and response amount. This aims to deter and weed out the unscrupulous practice of delaying or withholding payment without valid reasons.

Similarly, arising from the implementation of the SOP Act, standard forms for domestic subcontract including the supply of goods have been published<sup>10</sup>, taking cue from the amendments of the standard forms of main contracts both in the public and private sectors. In order not to be caught by the shorter default provisions for payment response and payment due date under the Act, the subcontracts expressly state such provisions in compliance with the SOP Act. This is one major step forward in the reform of contractual practices and payment behaviour in the industry instilling definitive responsibilities of each party to facilitate cash-flow by expediting payment.

### ***Dispute Resolution***

Under section 12(5) of the Act, “dispute settlement period”, in relation to a payment claim, means seven days after the date on which or the period within which the payment response is required to be provided under section 11(1). Section 12(4) of the Act provides that, during the dispute settlement period, either the claimant or the respondent may seek clarification from the other party on any matter relating to the relevant payment claim and that the respondent may provide the claimant with a payment response where he has previously failed to do so or vary the payment response. It is only where the dispute is not settled or the respondent does not provide the payment response at the end of this seven-day period that the claimant may proceed to make an adjudication application.

The provision of such a period, which is in line with a multi-tiered dispute resolution clause in contract, serves to encourage parties to come to an amicable settlement and by avoiding the need for the dispute to be determined in adjudication, any further expenses incurred and time spent could be obviated. In Asian cultures, there is a profound preference for agreed and harmonious solutions rather than one which may damage the parties’ relationship<sup>11</sup>. As seen in several adjudication cases, the existence of the period itself allows genuine parties to seek clarification or attempt to settle issues and disputes outside adjudication albeit it may not always be successful.

The high level of confidence the courts have on the adjudication machinery under the SOP regime as an interim binding dispute resolution procedure to resolve payment disputes can be seen from a recent case *Lian Teck Construction Pte Ltd v Woh Hup (Pte) Ltd and Others*<sup>12</sup> where Justice

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<sup>10</sup> Singapore Contractors Association Ltd (SCAL) Conditions of Sub-Contract for Domestic Sub-Contracts as well as the Conditions of Sub-Contract Supply of Goods.

<sup>11</sup> John Burkett, *Disputes without tears: Alternative Methods of Dispute Resolution*, 2000, RIBA Publications, at p37.

<sup>12</sup> [2006] SGHC 118, 4 SLR 1.

Andrew Ang highlighted adjudication under the SOP Act as a faster alternative which the appellant could apply while pending court's hearing on the stay application and summary judgment:

It was argued that to delay the hearing of an application for interim payment until after the stay application had been finally disposed of would cause hardship to a deserving plaintiff. As a partial answer to that, it should be noted that adjudication under s 12(1) of the Building and Construction Industry Security of Payment Act as an alternative means of obtaining interim payment is available *unless* the contract was entered into on or after 1 April 2005. *[With due respect, the learned judge could have meant "if" instead of "unless".]*

### ***Adjudication Statistics (April 2005 to April 2008)***

During this period, there were a total of 90 adjudication applications lodged. The main dispute was that most of the respondents did not provide payment response to their claimants. Of these, 58 valid cases were determined, 19 cases were withdrawn by the claimant's own accord and the remaining were either determined invalid or in the progress of adjudication (at the point of reporting). The majority of the adjudicator's fee was within the range of \$2,000 to less than \$6,000 per case.

All the 58 valid cases were determined within the timeline allowed under the SOP Act. The bulk of about 62% were filed by subcontractors against main contractors and another 22% were filed by sub-subcontractors against subcontractors. The rest were cases filed by main contractors or consultants against their clients. 56 determinations were made in favour of the claimants (with close to half of them having obtained adjudicated amount that is more than 90% of their respective claimed amount) and only 2 were determined in favour of the respondents. The maximum and minimum adjudicated amount determined were \$5,632,512.72 and \$11,522.00 respectively.

### **CONCLUSION**

In the Introduction, it is highlighted that the need for a legislative intervention by introducing the SOP legislation in Singapore to protect the weaker party in the payment chain is no different from the other countries who have introduced similar legislation.

While it is recognised that the SOP legislation is not a panacea for all payment issues in the construction industry, it upholds the rights of any party in the industry to seek payment for work done or goods supplied and the speedy and low cost adjudication process will expedite the

resolution of genuine payment disputes so that cash flow will not be disrupted and productivity of the industry will not be adversely affected.

With the core pillars in mind, this Act has been drafted with the understanding on how contractual and dispute settlement are normally handled in the Singapore construction industry, abolishing some undesirable ones yet retaining others which either are in line with or at least does not violate the overall policy intent in providing a more equitable operating environment for all parties of the value-chain in the construction industry as well as reforming the industry payment behaviour.

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