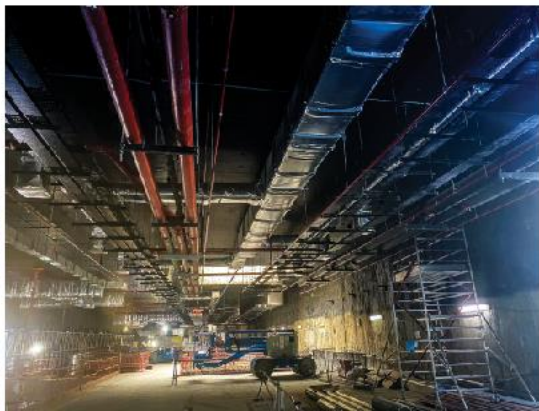
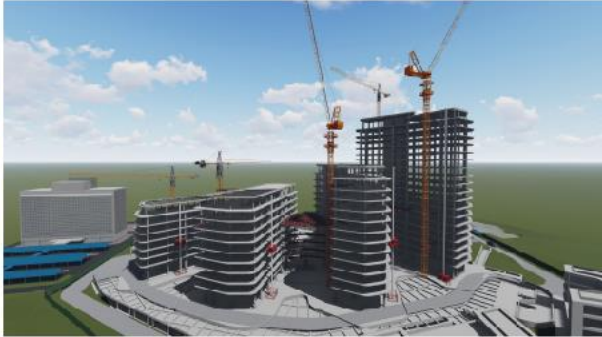


# Corporate Presentation

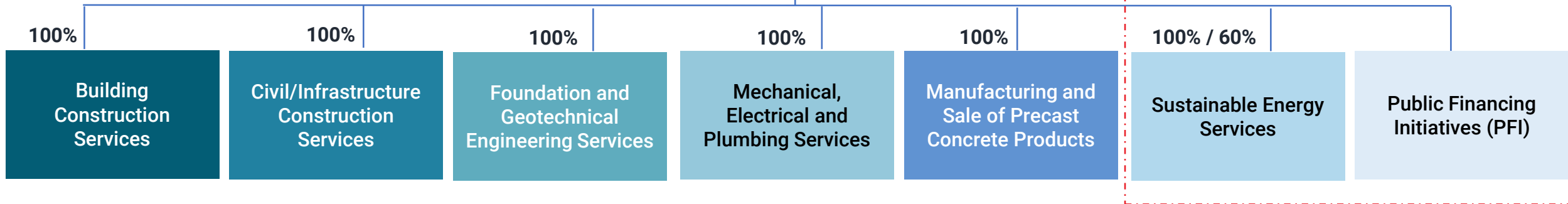
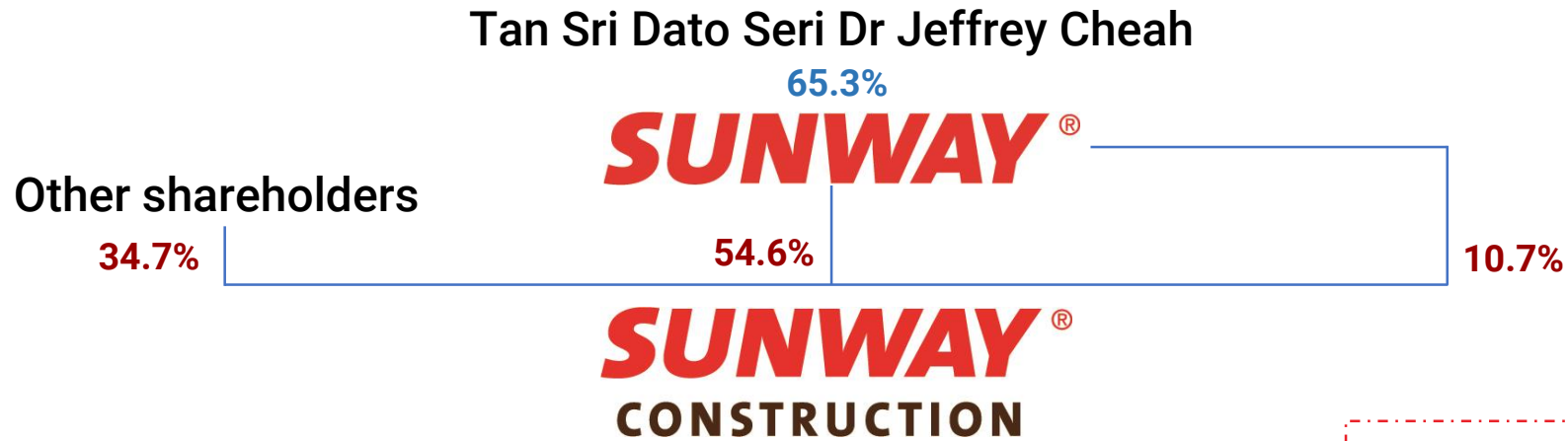
Mar 2022



- Incorporated in 1976 & commenced business in 1981
- First listing in year 1997 & delisted in year 2004
- Relisting under the construction sector of the Main Market of Bursa Malaysia on 28<sup>th</sup> July 2015
- Cumulative revenue since inception of more than RM40bil
- Market capitalization: Around RM2.2bil  
(Mar 2022 :1.88% Foreigner; 45.20% Non Bumi and 52.92% Bumi)
- Top external shareholders (EPF 9.2%, Amanah Saham 6.7%, Great Eastern 4.2%, KWAP 1.3%, AIA 1.1%, PNB 1.0%)

**MSCI**  
ESG RATINGS

CCC B BB **BBB** A AA AAA





**Building Construction Services**

- Design and construction service provider specializing in Building Information Modeling System (BIM /VDC)
- International portfolio includes projects in Singapore, UAE and Trinidad and Tobago
- Special Purpose Building Projects include Kuala Lumpur Convention Centre, Pinewood Studio, Sunway Medical Centre, Monash University Campus M'sia; Sunway Shopping Mall; Putrajaya Govt Agency Offices; International School of Kuala Lumpur



**Civil/Infrastructure Construction Services**

- Roads, highways, airports, bridges and rail transportation infrastructure projects over the last 30 years
- Local Projects include Ipoh Airport, SILK, Maju Expressway, SKVE, MRT, LRT and BRT
- Overseas Projects include 7 completed highways and bridges in India and 2 new HAM project secured in FYE 2020



**Foundation and Geotechnical Engineering Services**

- Core services include piling solutions and earth retaining systems
- Services cover all types of buildings such as residential, commercial, institutional, purpose-built or specialty buildings, and civil/infrastructure construction projects.



**Mechanical, Electrical and Plumbing Services**

- Main services are categorised into mechanical, electrical, plumbing and specialised engineering solutions
- Services offered to both internal and external clients as part of integrated services and on stand alone basis



**Sustainable Energy Services**

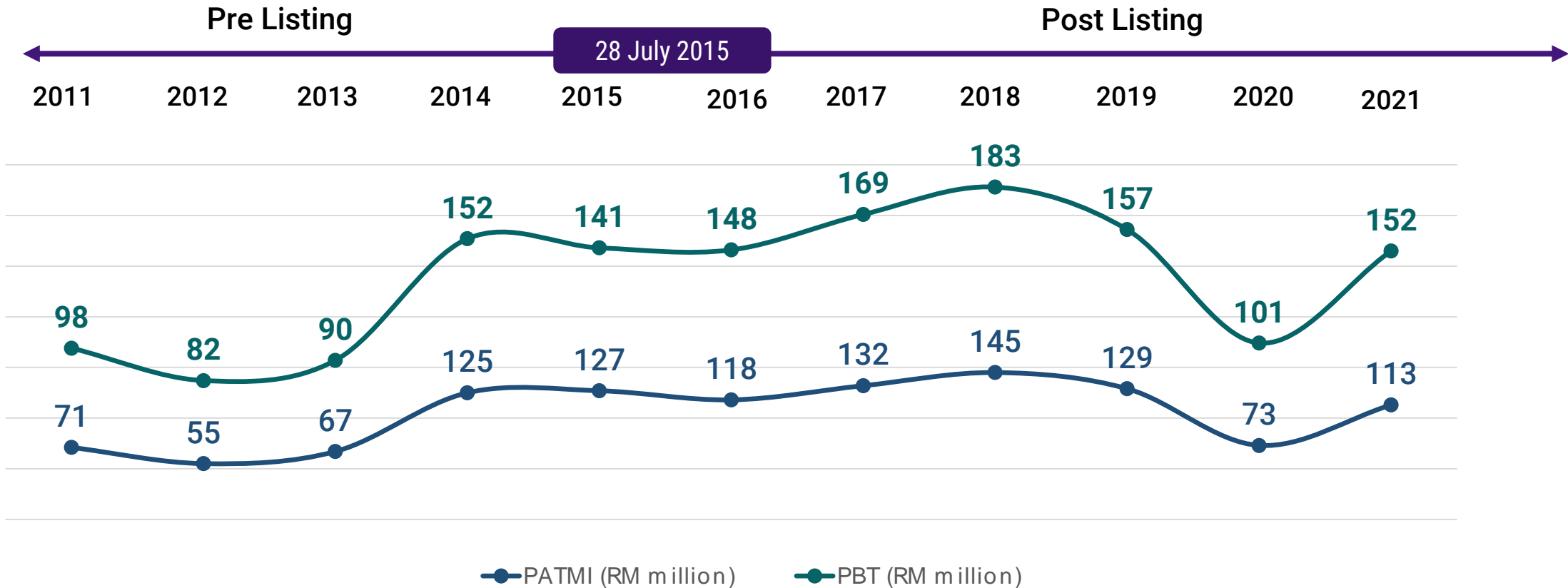
- Solar : Rooftop (Sunway projects) and large scale
- Gas District Cooling System (Putrajaya)
- Biomass system (BioExcel in Johor)
- LSS4 (EPC 2 x 50MW)
- MOU with ENGIE – GDC in M'sia/India



**Manufacturing and Sale of Precast Concrete Products**

- Develops, designs, manufactures and supplies precast concrete products with manufacturing plants located in Iskandar and Senai, Johor, Malaysia
- Precast concrete products manufactured, include Industrialised Building System ("IBS") components, for residential, commercial and infrastructure development projects

	IPO (28.7.15)	29.12.17	31.12.18	31.12.19	31.3.20	30.6.20	30.9.20	31.12.20	31.3.21	30.6.21	30.9.21	31.12.21	31.03.22
Price (RM)	1.20	2.51	1.33	1.91	1.51	1.88	1.84	1.88	1.80	1.66	1.63	1.56	1.72
Market Cap	1.55b	>3.0b	1.72b	2.5b	2b	2.4b	2.4b	2.4b	2.3b	2.2b	2.1b	2.0b	2.2b



2011 to 2014 figures as per prospectus and circular and 2016 to 2019 have been restated for MFRS 9

	2016	2017	2018	2019	2020	2021	1Q2022
	Restated RM mil	Restated RM mil	Restated RM mil	Audited RM'mil	Audited RM'mil	Audited RM'mil	Unaudited RM'mil
Revenue	1,788.8	2,076.3	2,256.8	1,768.7	1,552.6	1,729	624.7
PBT	148.0	168.7	182.7	157.4	101.5	152.2	47.2
PBT %	8.3%	8.1%	8.1%	8.9%	6.5%	8.8%	7.6%
PBT % - Con	6.0%	7.3%	8.6%	9.6%	6.8%	9.3%	7.9%
PBT % - Precast	20.3%	19.0%	0.8%	1.9%	2.8%	2.8%	2.7%
PATMI	117.8	132.3	144.7	129.3	72.8	112.6	34.5
ROE (%)	26%	26%	26%	21%	12%	17%	N/A

*Management's commitment is 35% of full year PATMI*  
*Dividend for 2015 : 4 cents or > 40% of full year PATMI*  
*Dividend for 2016 : 5 cents or > 55% of full year restated PATMI*  
*Dividend for 2017 : 7 cents or > 68% of full year restated PATMI*  
*Dividend for 2018 : 7 cents or > 62% of full year PATMI*  
*Dividend for 2019 : 7 cents or 70% of full year PATMI*  
*Dividend for 2020 : 4 cents or > 70% for full year PATMI*  
*Dividend for 2021 : 5.25 cents > 60% for full year PATMI*

	2014	2015	2016	2017	2018	2019	2020	2021
<b>Quality</b>								
QLASSIC - Construction	79%	75.3%	73.3%	77.2%	73.6%	75.0%	N/A	83%
CONQUAS - Precast	100%	100%	100%	100%	99.2%	N/A	N/A	N/A
Customer Satisfaction	75.6%	76.5%	74.3%	75.7%	77.6%	77.7%	96.1%	92.2%
<b>ESH</b>								
Work Man-Hours	16,376,137	14,676,640	16,918,924	18,790,437	20,242,286	16,611,284	14,723,472	17,869,038
Fatal Accident	2	2	2	-	-	1	2	-
<b>Employees</b>								
% Woman	15%	16%	15%	16%	14%	14%	16%	19%
Ratio Men: Women pay	0.97:1	0.97:1	0.98:1	0.97:1	0.96:1	1:0.93	0.99:1	1:0.91
Man day training/staff	3.23	3.6	2.7	1.2	2.8	3.4	2.0	2.23
Attrition	17%	14%	13%	13%	13%	11%	13%	14.6%



## A Turnkey Contractor with a Full Range of Integrated Services & Products



Building Construction Services

Civil / Infrastructure Construction Services

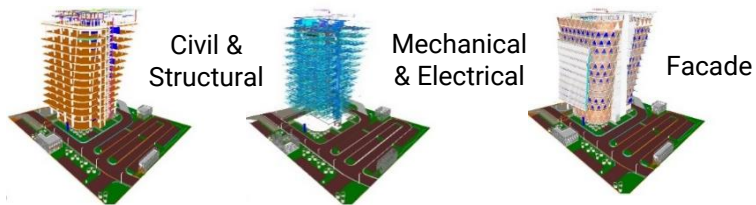
Foundation & Geotechnical Engineering Services

Mechanical, Electrical and Plumbing Services

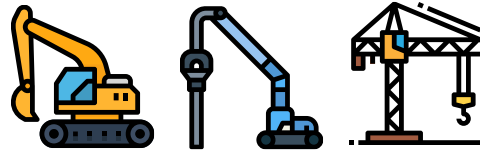
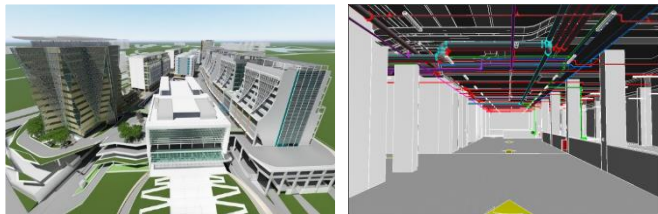
Sustainable Energy Services

Manufacturing and Sale of Precast Concrete Products

### Range of Services Supported by Building Information Modelling, Large Asset Base & Best Practices

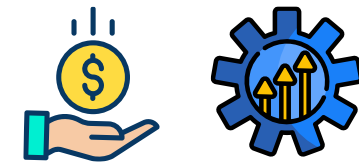


**Building Information Modelling = Improved visualization for clash analysis**



**Large Asset Base Allows Us to Maximize Economies of Scale**

- **26** Boring Rigs
- **25** Excavator
- **18** Tower Cranes
- **12** Backhoe
- **17** Mobile Cranes
- **10** Crawler Cranes
- **7** Skylift
- **45,000 m<sup>2</sup>** System Formworks

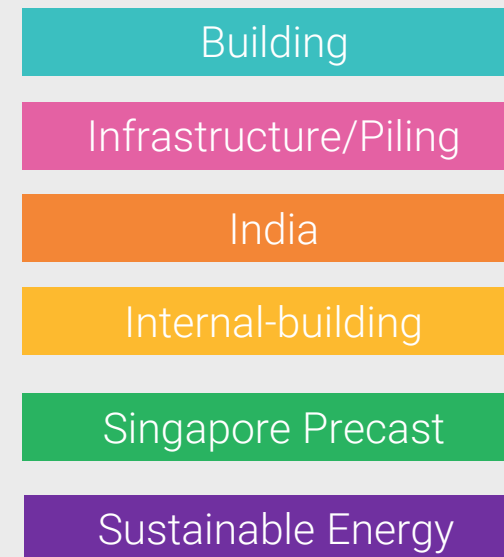
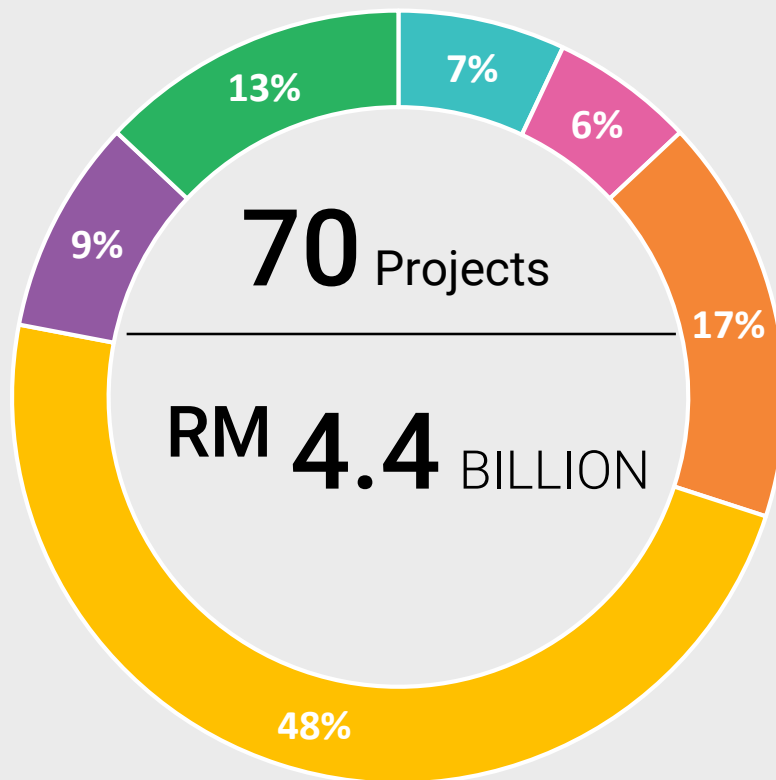


**Maximizing Cost Savings and Improved Operating Efficiencies = Enhanced Profitability**

- Quality Control
- Rationalising Functions
- Consolidating Management Functions
- Maximise Economies of Scale

**Well Positioned to Bid for and Undertake Large and Complex Projects Both Domestically & Internationally to Diversify Risk and Ensure Sustainable Development**





Target NEW order book → FYE 2022 : RM2b

	2021	2020	2019	2018	2017	2016	2015	2014	2013	2012
New Order	1.5b	2.3b	1.8b	1.6b	4.0b	2.7b	2.6b	0.8b	2.9b	1.9b
Outstanding Order Book	4.8b	5.1b	5.2b	5.2b	6.6b	4.8b	3.8b	3.0b	3.2b	4.2b

# INVESTMENT HIGHLIGHTS : 02 SOLID DIVERSIFIED ORDER BOOK

AS AT MAR-22 (RM MIL)	COMPLETION	CONTRACT SUM	O/S ORDERBOOK	
<b>BUILDING</b>			<b>304</b>	7%
PUTRAJAYA PARCEL F	Maintenance	1,610	11	
TNB HQ CAMPUS (PH 2)	3Q 2022	781	197	
PETRONAS LEADERSHIP CENTRE (PLC)	Completed	305	28	
IOI MALL (MEP)	2Q 2022	68	8	
OXLEY TOWER (MEP)	4Q 2024	68	52	
PNB118 PKG A&B (MEP)	3Q 2022	8	7	
<b>INFRASTRUCTURE/PILING</b>			<b>284</b>	6%
LRT 3 : PACKAGE GS07-08	4Q 2022	1,295	137	
SENTUL WEST MRTUG ST. (MEP)	2Q 2022	57	4	
CHAN SOW LIN MRTUG ST. (MEP)	2Q 2022	54	6	
JALAN TAMBUN, IPOH	4Q 2022	14	11	
BANGSAR RISING - PILING	3Q 2022	5	5	
TASCO	3Q 2022	9	8	
RTS LINK PACKAGE P2A	2Q 2025	112	112	
LRT: GS06	2Q 2022	1	1	
<b>INDIA</b>			<b>755</b>	17%
THORAPALLI - JITTANDAHALLI (TJ)	4Q 2023	508	488	
MEENSURUTTI - CHIDAMBARAN (MC)	3Q 2023	315	266	
<b>SUSTAINABLE ENERGY</b>			<b>406</b>	9%
SOLAR - EXTERNAL	Various	414	397	
SOLAR - INTERNAL	Various	4	1	
NEW ORDER 2022 - INTERNAL	Various	8	8	
<b>SINGAPORE</b>			<b>555</b>	12%
PRECAST	Various	584	427	
NEW ORDER 2022 - EXTERNAL	Various	128	128	

AS AT MAR-22 (RM MIL)	COMPLETION	CONTRACT SUM	O/S ORDERBOOK	
<b>INTERNAL - SUNWAY GROUP</b>			<b>2,137</b>	48%
SMC 4 + VO	3Q 2023	612	265	
SUNWAY SERENE	4Q 2022	413	61	
SUNWAY BELFIELD	4Q 2024	403	346	
SUNWAY VELOCITY 2	4Q 2022	352	80	
SOUTH QUAY CP2 - SUPERSTRUCTURE	4Q 2023	557	555	
SUNWAY CARNIVAL MALL EXT.	2Q 2022	286	28	
SUNWAY VELOCITY 2B	4Q 2023	253	213	
SMC DAMANSARA	1Q 2023	240	222	
SMC SEBERANG JAYA	2Q 2022	196	44	
SMC IPOH	1Q 2024	150	142	
SW INTERNATIONAL SCHOOL (SIS)	4Q 2022	140	51	
SOUTH QUAY CP2 - PILING	2Q 2022	198	45	
SUNWAY VELOCITY 3C4	3Q 2022	100	30	
SUNWAY HOTEL RENOVATION	3Q 2022	81	24	
BIG BOX OFFICE	3Q 2022	51	28	
BUTTERWORTH-KULIM EXPRESSWAY	2Q 2022	4	2	
DRAINAGE WORKS	4Q 2022	1	1	
WELLNESS ROAD & DRAIN	2Q 2022	1	1	
<b>GRAND TOTAL @ MAR 2022</b>		<b>10,384</b>	<b>4,441</b>	
<b>RED : SECURED IN 2022</b>		<b>266</b>	<b>265</b>	

# SOLID DIVERSIFIED ORDER BOOK – DETAILED

Projects (2022 new awards)	Client	Duration	Contract Sum (RM'mil)
Hougang N1C14 - PPSC project (390DU)	Chang Hua Construction Pte Ltd	Feb 23-April 24	80.7
Fit-out works for Menara Merdeka 118 (Electrical) - Pkg A	Black Point Associates (M) Sdn Bhd	Dec21-Aug22	3.8
Fit-out works for Menara Merdeka 118 (Electrical) - Pkg B	D'Yakin Creation Sdn Bhd	Dec21-Aug22	3.8
TASCO (Piling)	Kajima (Malaysia) Sdn Bhd	Jan22-May22	8.7
Roof top Solar	Sunway Property & Facility Mgmt & Sunway Lagoon	Oct-22	7.8
RTS Link Package P2A (ICQ Complex) - Piling	Adil Permata Sdn Bhd	Jan 22-June 25	111.5
LRT3 GS06 (piling)	RKR Bina Sdn Bhd	31-Mar-22	1.2
Yishun N3C27 - PPVC	LBD Engineering Pte Ltd	Dec 22 - Dec 24	47.1
Wellness Road & Drain	Sunway Resort Hotel & Spa	Mar 22 - Jun22	0.9
<b>Secured in 1Q 2022</b>			<b>265.6</b>
<b>TOTAL AS AT 1Q 2022</b>			<b>265.6</b>

Target NEW order book → FYE 2022 : RM2b

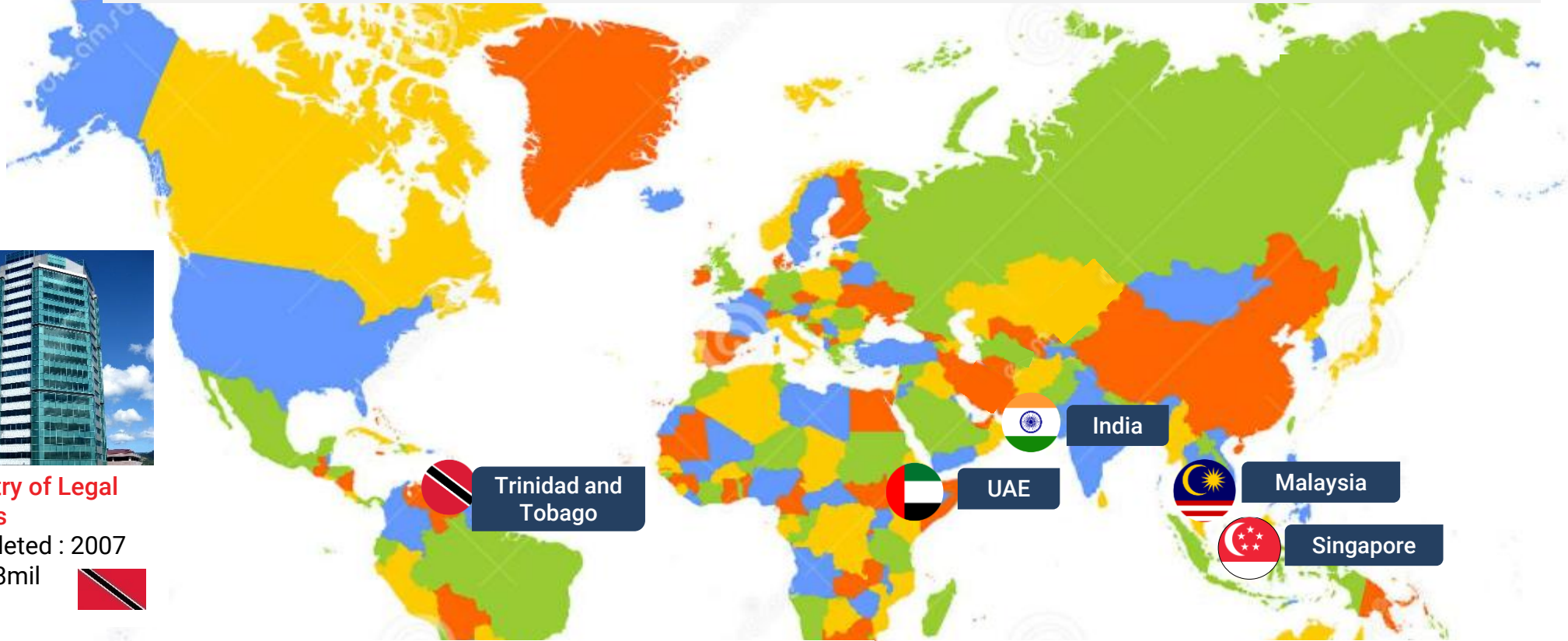
## New order

2021: 1.5b; 2020 : 2.3b; 2019 : 1.8b; 2018 : 1.6b, 2017 : 4.0b, 2016 : 2.7b, 2015 : 2.6b, 2014 : 0.8b, 2013 : 2.9b, 2012 : 1.9b

## Outstanding Order book

2021: 4.8b; 2020 : 5.1b 2019 : 5.2b; 2018 : 5.2b, 2017 : 6.6b, 2016 : 4.8b, 2015 : 3.8b, 2014 : 3.0b, 2013 : 3.2b, 2012 : 4.1b

## Successfully Secured & Executed Major Projects both Domestically & Internationally



**Parcel F, Putrajaya**  
Completed : 2019  
RM1,610mil



**MRT Package V4, Klang Valley**  
Completed : 2016  
RM1,172mil



**Ministry of Legal Affairs**  
Completed : 2007  
USD58mil



**Al-Reem Island Phase 1, Plot 1**  
Completed : 2009  
USD362mil



**Rihan Heights Phase 1A**  
Completed : 2010  
USD510mil



**HDB - Bukit Merah**  
Completed : 2016  
SGD31mil



**East-West Corridor Uttar Pradesh**  
Completed : 2008  
US67mil



**LRT Package B**  
Completed : 2015  
RM569mil



**Kuala Lumpur Convention Centre**  
Completed : 2005  
RM549mil



Proven Capabilities

Which Led to an Established Multi-Award Winning Brand

Proven Operating Success

40 Years Heritage

Excellent Reputation

Leverage on the **SUNWAY**® brand

## 2020

- 19 Feb : Leadership Area –Based Demarcation (LeAD) Programme by Petronas – **“Best Area Champion (Onshore Construction)**
- 6 Mar : 5<sup>th</sup> Asia Best Sustainability Reporting Awards (ASRA) Singapore – **Asia’s Best Sustainability Report within Annual Report - “Bronze”**
- 30 Sept : MSWG-ASEAN Corporate Governance Award 2019 – **Industry Excellence Award**
- 14 Dec : The Edge Billion Ringgit Club award – **Construction Sector : Highest return on ROE**
- 17 Dec : The ASSETS ESG Award – **Gold Award**
- 22 Dec : NACRA (National Annual Corp Report Award) – **Platinum for market capitalisation < 2b**

## 2021

- 9 April - Mechanical & Electrical Contractors award from MBAM
- 12 April – MSOSH 2019 OSH Award (**Gold 1 – PNLC**) (**Gold 2 – TNB Campus**)
- 12 Aug - MSWG ASEAN Corporate Governance 2020 Award (**Industry Excellence**)
- 12 Aug – ARC Awards International 2021 – Annual Report (Industry) Bronze
- 8 Nov - The Edge Billion Ringgit best ROE



SG50 Prestige Enterprise Award 2015 / 2016



Singapore Successful Brand 2015



MCIEA Builder of The Year Award 2018, 2013, 2005 & 2003



MCIEA International Achievement Award 2012



Industry Excellence Awards 2010 – Export Excellence Award

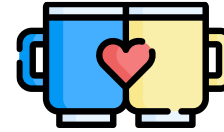


MCIEA Project Award: Building-Major Scale – KL Convention Centre 2006

## Sunway Group Strategic Relationship



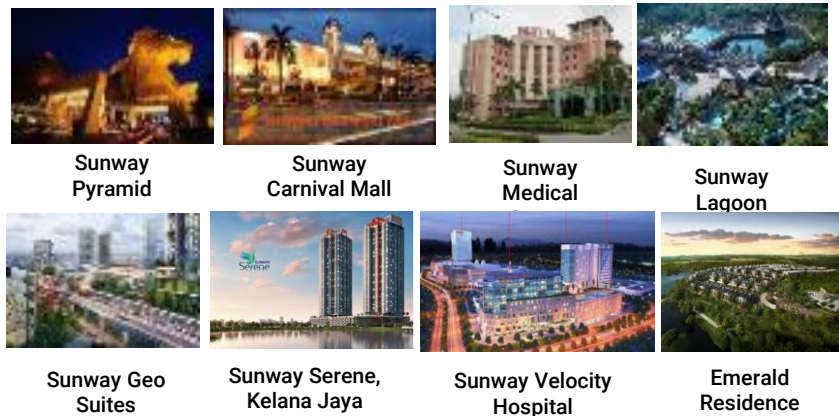
- ✓ Major property developer in Malaysia. Revenue = 2021 : 0.6b (2020 : 0.5b; 2019 : 0.6b; 2018 : 0.6b 2017:0.9b, 2016:RM1.2b) from its property development divisions
- ✓ Total gross development value of remaining landbank (3,334 acres) Johor 49%, Klang Valley 27%, Penang 6%, Singapore 14%, Others 4% – RM59 bil (15 years)
- ✓ 2022 Launch Target : RM2.3b (2021 : 3.2b; 2020:1.9b; 2019 : 1.2b, 2018 : 2.1b, 2017 : 1.1b, 2016:0.65b, 2015: 1.4 bil)
- ✓ Sales target 2022 : RM2.2b (2021 : 2.6b; 2020 : 1.3b; 2019 : 1.55b; 2018 : 1.7b; : RM2017 : 1.2b; 2016 : 1.2b, 2015 : 1.2b)
- ✓ At least 51% stake in Suncon Group post IPO



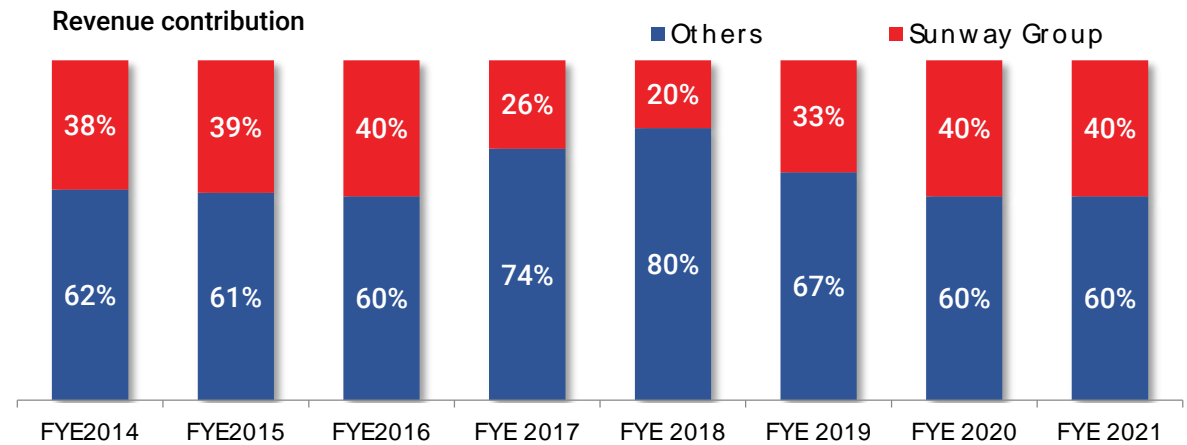
Bed rock orders even during a decline in the construction sector

- ✓ Competitive advantage in property development – design optimization, assurance on quality & timeliness
- ✓ Portfolio of diversified services across the construction sub-sector

### Our Key Developments with Sunway Group



### Sunway Group's Continued Support



**Symbiotic Relationship with Sunway Group Provides Stability During Periods of Downturn**



## CHUNG SOO KIONG

### Designation

Group Managing Director  
(Resigned w.e.f. 01.04.2022)

**Years in SunCon Group :** >20 years

**Construction Industry Experience :**  
Over 20 years



## LIEW KOK WING

### Designation

Group Managing Director  
(Appointed w.e.f. 01.04.2022)

**Years in SunCon Group :** >20 years

**Construction Industry Experience**  
Over 20 years



## RICHARD WONG

### Designation

Group Deputy Managing Director  
(Appointed w.e.f. 01.04.2022)

**Years in SunCon Group :** > 20 years

**Construction Industry Experience**  
Over 30 years



## EVAN CHEAH

### Designation

Non-Independent Non-Executive  
Director

**Years in SunCon Group :** 20 years

**Construction Industry Experience**  
Over 15 years



## ERIC TAN CHEE HIN

### Designation

Group Deputy Managing Director  
(Appointed w.e.f. 01.04.2022)

**Years in SunCon Group :** >20 years

**Construction Industry Experience**  
Over 20 years



## YIP LAI HUN

### Designation

Director Supply Chain &  
Contracts Mgmt

**Years in SunCon Group :** >25 years

**Construction Industry Experience**  
Over 30 years



## NG BEE LIEN

### Designation

Chief Financial Officer

**Years in SunCon Group :** 16 years

**Construction Industry Experience**  
Over 20 years



## KWONG TZYY EN

### Designation

Director Precast Division

**Years in SunCon Group :** > 20 years

**Construction Industry Experience**  
Over 20 years



## THOMAS SAMUEL

### Designation

Director Piling Division

**Years in SunCon Group :** Since 2015

**Construction Industry Experience**  
Over 30 years

Extensive Industry Expertise and Strong Execution Capability with  
an Average of Over 23 Years of Experience in the Construction Industry

### Fully integrated Construction Company

- Integrated business model providing end-to-end design and construction solutions
- VDC enabled
- Focused on sustainability and renewable energy.
- Well supported by investment in capex and assets previously

### Solid Order Book

- Strong order book & tender book with diversified construction capabilities across various sub – segments of the construction sector
- Proven Track Record in the Local & International Stage
- History of repeat order from reputable clients with high credit worthiness

### Positioned for Growth

- The largest pure play listed construction company in Malaysia
- Top 3 construction group by turnover and profit
- Overseas venture to India (secured 2 HAM projects in FYE 2020)
- **12MP (2021 – 2025) Development Expenditure of 400b (11MP : 248.5b)**
- Construction sector growth in 2022(F) : 11.5%; 2021(E) : 9.2%; 2020 : -19.4%; 2019: 0.1% 2018 : 4.2%; 2017 : 6.7%; 2016 : 7.4% ; 2015 : 8.2%
- Singapore Precast : Construction on ICPH plant is on-going (operational 2H 2022)

### Continuing Support from Sunway Group

- At least 51% stake in Suncon Group post IPO
- Bed rock orders even during a decline in the construction sector (past years 40% revenue)
- Treasury support from Sunway Bhd

### Financial

- High Return on Equity (2021 : 17%) – Best ROE for 3 consecutive years under construction sector awarded by The Edge Billion Ringgit Club
- Sound balance sheet with net cash position (after offsetting wholesale funds disclosed under investment in associate)
- 35% dividend policy ( 2018 : 60%, 2019 : 70% : 2020 : 71%; 2021 : 60%)



## TNB HQ Campus Phase 2, Bangsar

- Contract Value : RM781 million (13.6 acres)
- Client : Tenaga Nasional Berhad
- Completion : 3Q 2022



## Belfield Residence, Sunway

- Contract Value : RM403 million



CP2 mixed commercial, Sunway

- Contract Value : RM756 million



## Sunway Serene, Petaling Jaya

- Contract Value : RM342 million



## Sunway Velocity 2 – Plot B

Contract Sum : RM253 million



## Sunway Medical 4 - Extension

VO: RM162 million



### Proposed Construction of:-

- Phase 2A – 2-Storey Retail, 8-Storey Podium Carpark & 1-Storey Basement Carpark
- Phase 2B & 2C – 2 Blocks of 39-Storey Serviced Apartments

### Main Building Works:-

- Tower D – Hospital Suites 180 new Outpatient Specialist Consultation Suites across the 3 blocks and 474 units of Senior Living residences
- Tower E – Hospital Block - dedicated Women's Tower
- Tower F – Hospital Block - dedicated Children's Tower



## ◀ Sunway Carnival Mall Extension

- Gross floor area to 1.45 million sq ft from the current 780,000 sq ft
- Net lettable area (NLA) from around 500,000 sq ft to 830,000 sq ft.

Opening 4Q 2021

## Sunway Medical, Seberang Jaya ▶

- 180-bed hospital with a six-bed intensive care unit

Opening 4Q 2021



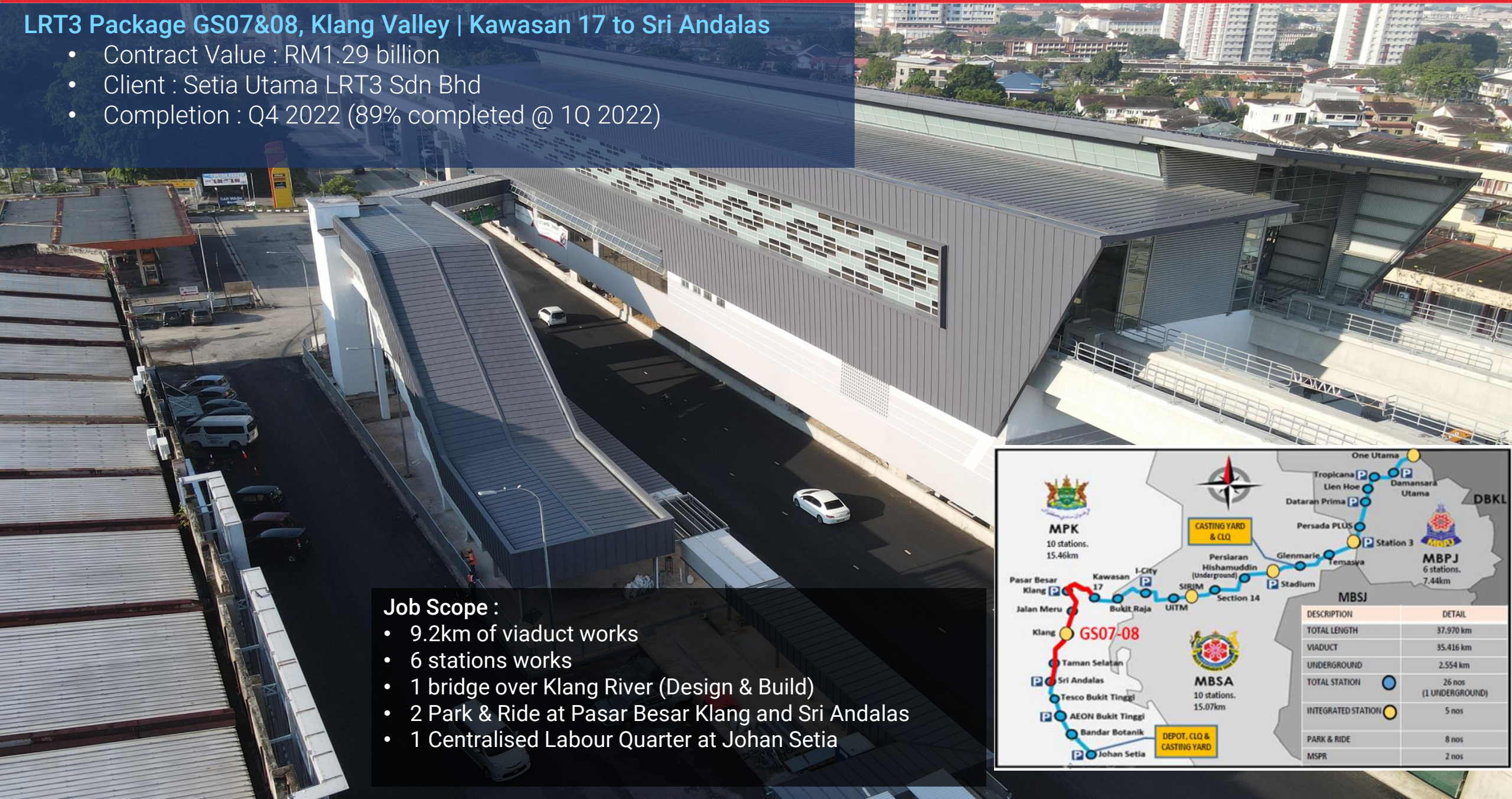
# Sunway Valley City (Phase 1)



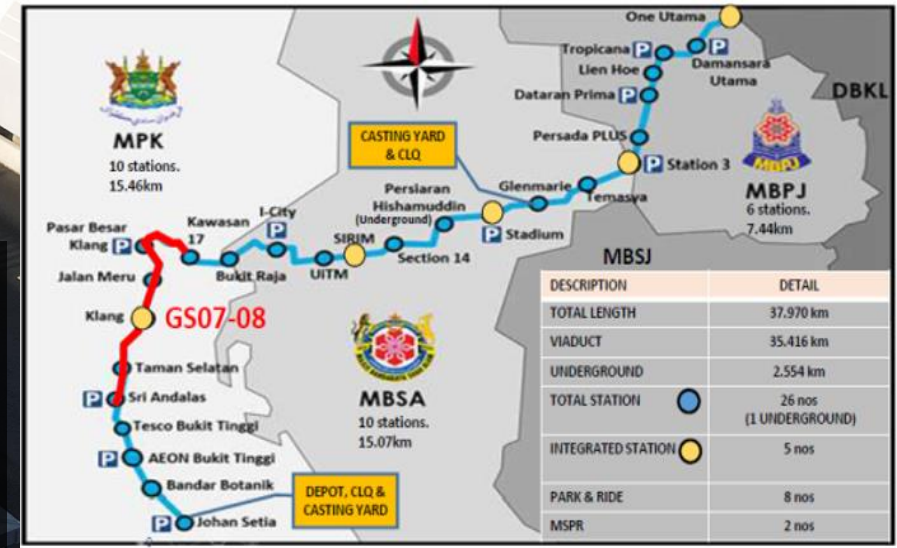
# On-Going Projects : Infrastructure

## LRT3 Package GS07&08, Klang Valley | Kawasan 17 to Sri Andalas

- Contract Value : RM1.29 billion
- Client : Setia Utama LRT3 Sdn Bhd
- Completion : Q4 2022 (89% completed @ 1Q 2022)



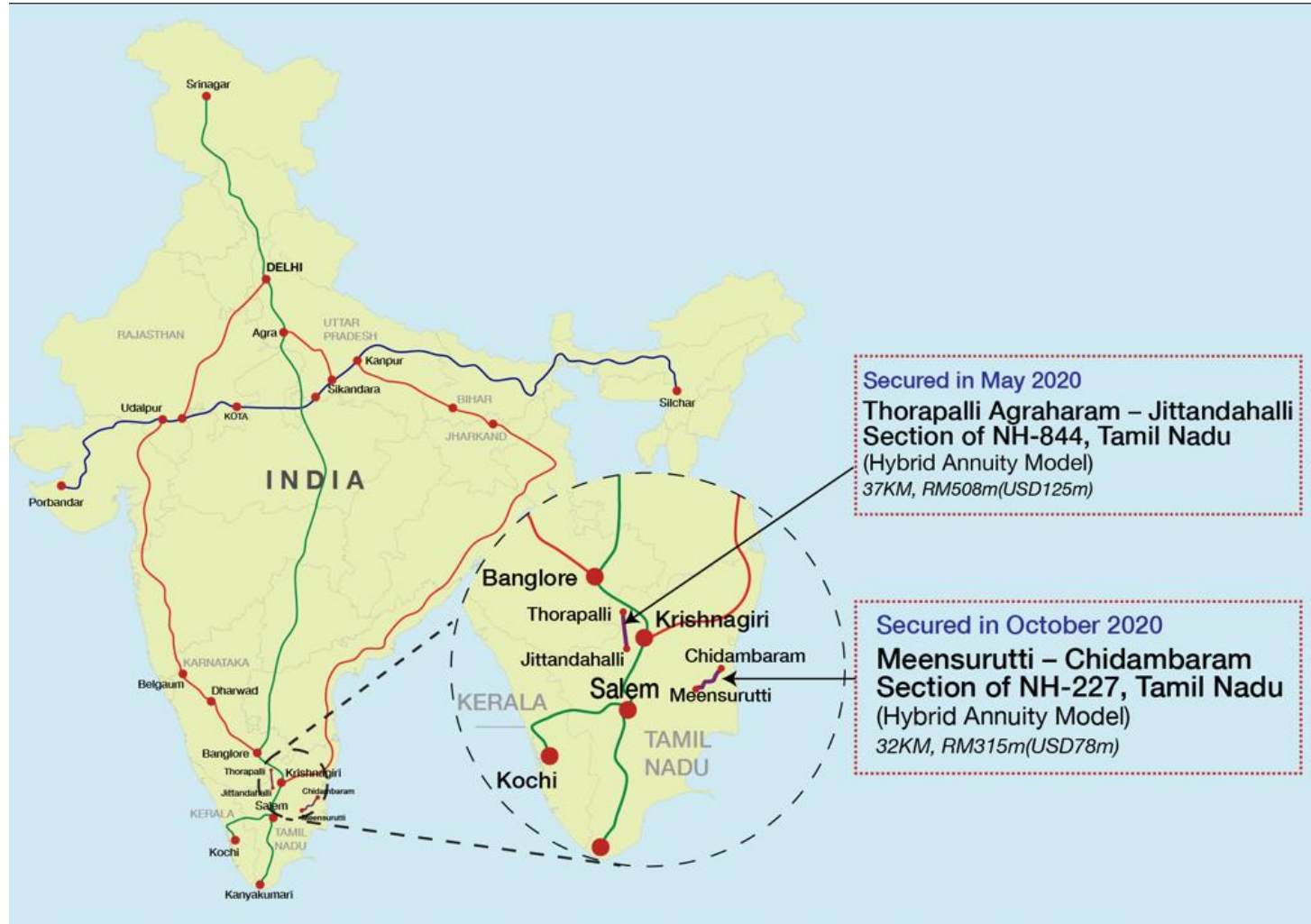
- Job Scope :**
- 9.2km of viaduct works
  - 6 stations works
  - 1 bridge over Klang River (Design & Build)
  - 2 Park & Ride at Pasar Besar Klang and Sri Andalas
  - 1 Centralised Labour Quarter at Johan Setia





## 2 India Hybrid Annuity Model project secured in March & Oct 2020

	Thoropalli Jittandahalli	Meensurutti Chidambaram (Achieved Financial Close on 10 May 2021)
Contract Sum	864.5 crores	553.8 crores
Maintenance per year (15 years)	7.08 crores	1.5 crores
Construction years	2 years	2 years
SunCon's portion	60%	60%
Payment terms	40% during construction and 60% over 15 annuity years. NHA will pay us interest on 60% at RBI rate + 3%	
Length	36.75 (4 lane)	31.53km (2 lane)
State	Tamilnadu	Tamilnadu
Start Date	7 Dec 2021	8 Aug 2021
<b>Financial Close @ May 2021</b>		





**Pile Foundation Works**



**Earth Retaining System**



**Ground Treatment**



**Offshore Piling**



Pinewood Movie Studio



Central Utilities Facilities



KLIA Chilled Water



Gas District Cooling Plant - Putrajaya



Roof Top Solar – Sunway Iskandar



**Parapet Wall**



**Façade Window**



**Water Tank**



**Lift Core Wall**



**Column**



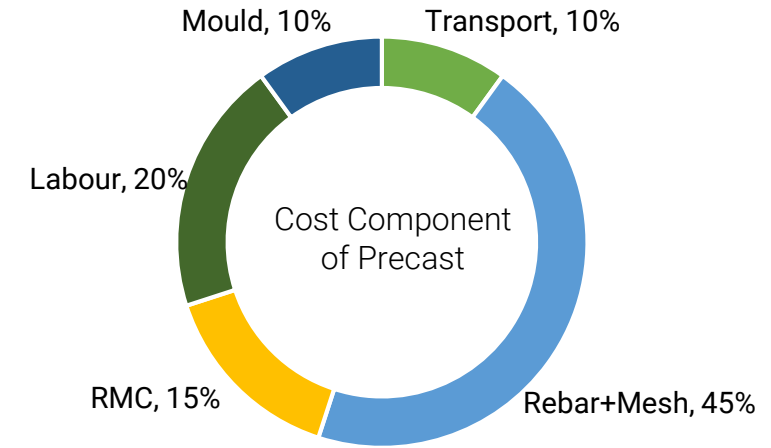
**Staircase**



**Hollow Core Slab**



**Prefabricated Toilet**



Plant	Area (sq. ft.)	Max Annual Capacity (m <sup>3</sup> )	Utilisation 2021 (%)	Utilisation 2020 (%)	Utilisation 2019 (%)	No. of lines
Senai Plant (own)	Built up area : 262,231 Land area : 475,409	54,000	48%	47%	46%	6+3 (half) lines
Iskandar Plant (rented)	Land area : 9 hectares	72,000	41%	48%	72%	9 lines

HDB BTO Launch → 2022(F) = 23,000; (2021 = 17,109; 2019 : 14,591; 2018 : 15,811 2017 : 17,593; 2016 17,891; 2015 : 15,100 ; 2014 : 22,455)

Capacity building → ICPH (Integrated Construction Precast Hub) in Pulau Punggol Barat costing SGD80m during the 3 years construction period for a 30 years lease for a fully automated robotic precast plant (Tentative commissioning of plant : 3Q 2022)

SINGAPORE: By 2019, 35 per cent of newly launched housing board projects will be built using a method in which 3D modular units are manufactured and finished in factories, announced the Housing and Developing Board (HDB) in a news release on Wednesday (Sep 6).

The method, known as Prefabricated Prefinished Volumetric Construction (PPVC), is being piloted in Valley Spring @ Yishun. Construction for the 824 Build-to-Order (BTO) units began in March, and HDB said such technology will improve productivity and ensure greater quality control.

“Volumetric construction in a factory environment offers more uniform and better quality workmanship. The incidence of wet construction joints is also reduced, thereby improving the water tightness of wet areas,” said HDB.

It added that with the finishes done in factories, there will be less noise and dust at the construction site. Fewer workers are also required on-site.

Apart from the PPVC method, HDB also announced that by 2019, all BTO flats will be fitted with bathroom units that are pre-assembled off-site, with finishes like copper piping, partial tiling, window frames and a waterproofing system.

The PPVC method will be 8 per cent costlier than conventional building methods, where workers hoist raw materials onto elevated blocks being built.

“These costs are expected to come down as the technology matures and the industry capacities and capabilities build up over time.

“The use of pre-fabricated bathroom units and PPVC methods will also translate to savings in terms of manpower,” said the HDB.



LIFTING  
CRANE

TRAILER  
DELIVERY

## Singapore to spend \$139m promoting modular and digital construction

6 March 2020 | By Rod Sweet | 0 Comments



**Singapore announced a range of measures this week to keep boosting construction productivity, including a S\$120m (US\$86.4m) fund to push modular techniques in new public-sector buildings, and S\$19m (US\$13.7m) to get SMEs using digital technologies.**

The city state will also start cutting the number of foreign construction professionals firms can hire from next year, in order to boost home-grown talent.

Minister for National Development and Manpower, Zaqy Mohamad, told this year's Committee of Supply Debate that Singapore was on track to reach its 2020 target of 40% take-up of "design for manufacture and assembly" techniques, or DfMA, but wanted to reach 70% by 2025.

"This is an ambitious target but I think that we can achieve this by working together with the industry. We aim to make DfMA our default way of building," Mohamad said.

The S\$120m will be disbursed through Singapore's Public Sector Construction Productivity Fund (PSCPF), set up last year to promote DfMA techniques including prefabricated prefinished volumetric construction (PPVC), mass engineered timber, structural steel systems, and advanced precast concrete systems.

Singapore zeroed in on DfMA as a route to higher productivity in 2014, pouring S\$55m into a productivity fund, and commissioning a series of "integrated construction and precast hubs", which are highly-automated, multi-storey factories for producing precast concrete building elements and volumetric modules.

### Digital push

This week Mohamad told his audience that Singapore's construction productivity had risen by more than 17% in the last decade.

The government sees digitalisation as an important way to make the industry more productive.



THE BUSINESS TIMES REAL ESTATE

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HOME REAL ESTATE

## Prefabricated bathrooms, units for all Singapore new flats by 2019

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This would drive HDB's construction productivity on a larger scale, setting it on track to achieve a productivity improvement of 25 per cent by 2020, compared with 2010. PHOTO: HDB

THE Housing Development Board (HDB) says it will improve construction productivity through a greater use of prefabricated units that are assembled off-site but that can be installed on-site.

This would drive HDB's construction productivity on a larger scale, setting it on track to achieve a productivity improvement of 25 per cent by 2020, compared with 2010.

One of the initiatives is to expand the use of prefabricated bathroom units (PBU).

The HDB on Wednesday said that it would implement PBUs in 60 per cent of the flats launched in 2017, before extending this to all projects launched by 2019.

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# HDB construction productivity to improve 25 per cent by 2020

HDB to use prefabricated building methods in 35% of all its projects by 2019

**Linette Heng**  
Reporter  
Sep 07, 2017 06:00 am

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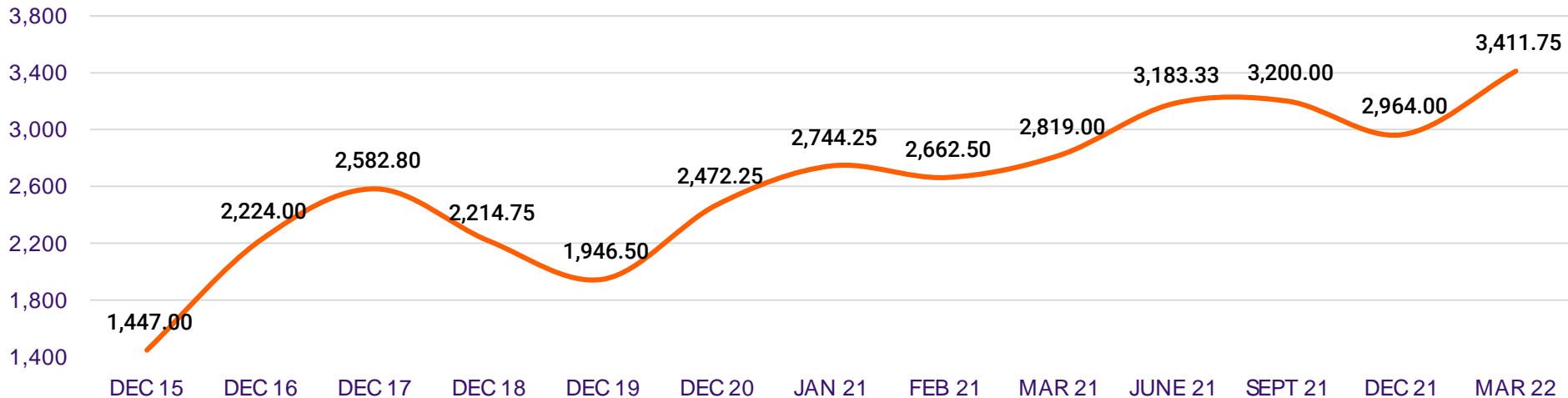
**Prefabricated bathroom units (PBUs) of better workmanship quality will be a feature of all newly launched Housing Board flats by 2019.**

The Prefabricated Prefinished Volumetric Construction (PPVC) method - which involves constructing and assembling 3D modular units with finishes in a factory before it is transported to a construction site for installation - will also be used in 35 per cent of all HDB projects by that time.



Potential Risk	Potential Impact	Controls to Mitigate Risk
Fluctuation of material price	<p><u>Steel bar price</u>                      Dec 2019 : RM1,947                      Dec 2020 : RM2,520                      Dec 2021 : RM2,964</p> <p><u>Bulk cement price</u>                      Dec 2018 : RM206/m<sup>3</sup>; Dec 2019 : RM222                      Dec 2020 : RM214                      Dec 2021 : RM275</p> <p><u>Copper</u>                      Dec'19 : USD6,000; Dec'20 : USD7,800; Dec'21 : USD9,551</p>	<ul style="list-style-type: none"> <li>Bulk locked-in steel rebar in advanced at lower prices or when price is favorable.</li> <li>Forward-looking steel rebar requirement (approximately 6 months in advanced).</li> <li>Managed to lock in at old price for most existing projects till completion.</li> </ul>
Foreign currency fluctuation	Importation of solar panels, inverters, special lightings, furnishing & façade components	<ul style="list-style-type: none"> <li>FOREX hedging in advance once design and bill of quantity is confirmed.</li> <li>FOREX rates are fixed upfront at the contractual level.</li> </ul>

MONTHLY AVERAGE FOR STEEL BAR (RM/MT)



**THANK YOU**

**SUNWAY SOUTH QUAY**

