ARCADIS

Design & Consultancy for natural and built assets

Construction Cost Handbook

VIETNAM 2020

Arcadis Vietnam Co., Ltd

Handbook Cover Photos:

1. The MarQ, Ho Chi Minh City
2. The Metropole Thu Thiem, Ho Chi Minh City
3. Midori Park, Binh Duong Province
4. Thanh Long Bay, Binh Thuan Province

ARCADIS VIETNAM CO., LTD

Copyright Statement and information caveat

Thirteen Edition 2020

© Arcadis Vietnam Co., Ltd

All rights reserved. No part of this publication may be produced, copied, stored or transmitted in any form without prior written permission from Arcadis Vietnam Co., Ltd.

The information contained herein should be regarded as indicative and for general guidance only. Arcadis Vietnam Co., Ltd. makes no representation, expressed or implied, with regard to the accuracy of the information herein and cannot accept any responsibility or liability for any errors or omissions that may be made.

Unless otherwise stated, costs reflected in this handbook are current as at **4th Quarter 2019.**

TABLE OF CONTENTS

	Page No.
Table of Contents	4
Calendars	6
Introduction	7

1. CONSTRUCTION COST DATA

Construction Market 2020 Outlook	13
Major Rates for Selected Asian Cities	18
Construction Cost Specification	24
Construction Costs for Selected Asian Cities	28
M&E Costs for Selected Asian Cities	34
Utility Costs for Selected Asian Cities	40

2. GENERAL CONSTRUCTION DATA

Material Price Indices	46
Import Duties	48
Progress Payments	49
Estimating Rules of Thumb and Design Norms	50

3. PROPERTY INVESTMENT

Building Control and Procedures	56
Project Closed Out Procedures	60
Typical Submission Flowchart	61
Key Planning Parameter	62
Contractor Selection Strategies	67
Building Areas Definitions	72
Procurement Strategies	77
Property Overview	80

Page No.

4. VIETNAM BUSINESS ENVIRONMENT

Language	114
Accounting System	114
Banks	115
Government Administration	117
Taxation	118
Insurance	123
Workforce	132

5. OTHER INFORMATION

Vietnam Map	136
Domestic Routes	137
Vietnam Key Data	138
Some Interesting Facts	142
Relevant Websites	144
Public Holidays	146
Prime Rates	152
Financial Formulae	153
IDD Codes and Time Differences	154
Conversion Factors	156
Arcadis Asia Leadership Team	158
Arcadis Asia Sectors	160
Arcadis Asia Services	164
Directory of offices	166
Acknowledgement	179

2020

JANUARY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

FEBRUARY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29

MARCH

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

APRIL

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

MAY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

JUNE

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

JULY

S	M	T	W	T	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

AUGUST

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24/31	25	26	27	28	29

SEPTEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

OCTOBER

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

NOVEMBER

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

DECEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

2021

JANUARY

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

FEBRUARY

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28						

MARCH

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

APRIL

S	M	T	W	T	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	

MAY

S	M	T	W	T	F	S
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23/30	24/31	25	26	27	28	29

JUNE

S	M	T	W	T	F	S
	1	2	3	4	5	
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30			

JULY

S	M	T	W	T	F	S
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

AUGUST

S	M	T	W	T	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

SEPTEMBER

S	M	T	W	T	F	S
		1	2	3	4	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

OCTOBER

S	M	T	W	T	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24/31	25	26	27	28	29	30

NOVEMBER

S	M	T	W	T	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30				

DECEMBER

S	M	T	W	T	F	S
		1	2	3	4	
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	

ARCADIS VIETNAM CO., LTD

This version of Arcadis Handbook – Vietnam 2020, as other future annually published handbooks, focuses on the construction cost profile of Vietnam and those of the major cities in Asia.

The handbook is structured to serve as a general reference guide on construction cost indicators in Asia.

The information contained in this handbook has been compiled by Arcadis Vietnam Co., Ltd. Any further information and/or if advice relating to particular projects in specific region is required, please contact any of the regional offices listed under the Directory of Arcadis Offices at the end of this handbook.

Arcadis Vietnam Co., Ltd.

OUR CORE VALUES

People First

We care for each other and create a safe and respectful working environment where our people can grow, perform, and succeed.

Integrity

We always work to the highest professional and ethical standards and establish trust by being open, honest and responsible.

Client Success

We are passionate about our clients' success and bring insights, agility, and innovation to co-create value.

Collaboration

We value the power of diversity and our global capabilities and deliver excellence by working as One Arcadis.

Sustainability

We base our actions for clients and communities on environmental responsibility and social and economic advancement.

CONSTRUCTION COST DATA 1

Construction Market 2020 Outlook

Major Rates for Selected Asian Cities

Construction Cost Specification

Construction Costs for Selected Asian Cities

M&E Costs for Selected Asian Cities

Utility Costs for Selected Asian Cities

ARCADIS VIETNAM CO., LTD

CONSTRUCTION MARKET 2019 AND 2020 OUTLOOK

2019 witnessed an increase in construction activity in HCMC, Hanoi and coastal areas such as Camranh, Nhatrang and Danang especially Phu Quoc Island.

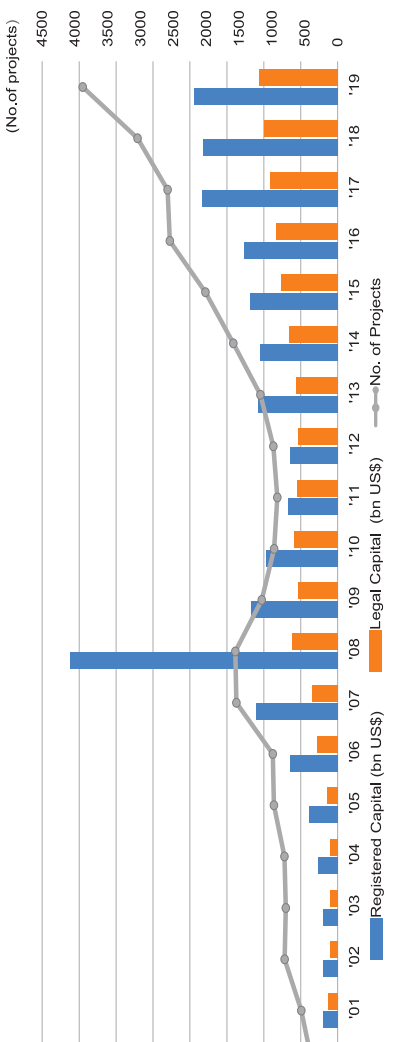
We continued to aim to focus on the business of commercial development and expand our business in Industrial real estate as seeing an increase in Foreign Direct Investment.

Due to Covid-19 pandemic implications in 1Q 2020, construction output is slowing down and still possible remaining at a low level in 2Q 2020 notably in the Hospitality along the coastal regions, Retail and Residential sectors in big cities. However, the Industrial Real Estate is still on the brighter side due to several key drivers of application of Multiple free-trade agreements, lower labour cost, affordable land price and sea freight, stable government, fast growth rate and improving.

Major infrastructure projects are generally still funded through the Asia Development and Multilateral Development Banks. Several segments of North – South Express Way have been announced to find the source of investment probably in PPP first then State Fund after. HCMC expects the opening of the first MTR Line 1 in 2021.

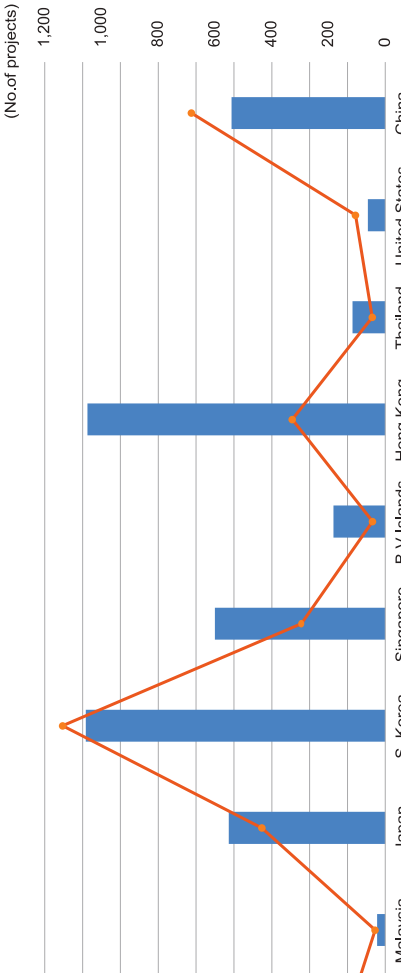
Vietnam will still expand orientated growth economy in 2020 and GDP expected growth this year will be at circa 3.0-4.0%.

ANNUAL FOREIGN INVESTMENT



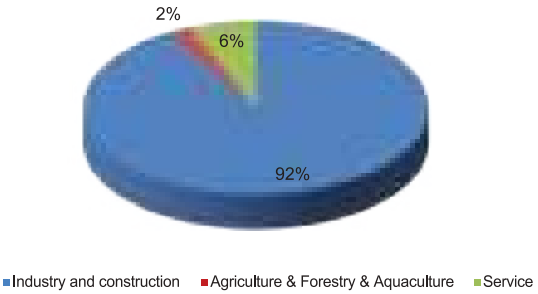
Year	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19
Registered Capital	2.84	3.14	3.00	3.19	4.55	6.84	12.00	21.30	71.73	22.63	18.60	12.70	12.18	20.82	20.23	22.76	24.37	35.88	35.47	38.02
Legal Capital	1.31	1.71	1.27	1.14	1.22	1.97	4.67	6.04	11.50	10.00	11.00	10.05	10.00	10.55	12.35	14.50	15.80	17.50	19.10	20.38
No. of Projects	391	555	808	791	811	970	987	1544	1557	1155	969	919	980	1175	1588	2013	2556	2591	3046	3883

FDI BY COUNTRIES



Country	Taiwan	Malaysia	Japan	S.Korea	Singapore	B.V.Islands	Hong Kong	Thailand	United States	China
Registered Capital	1,006.54	364.80	7,991.95	6,885.29	4,162.81	1,843.41	1,727.69	739.97	487.28	1,810.26
No. of Projects	116.00	37.00	385.00	953.00	199.00	39.00	137.00	34.00	74.00	335.00

FDI BY SECTORS

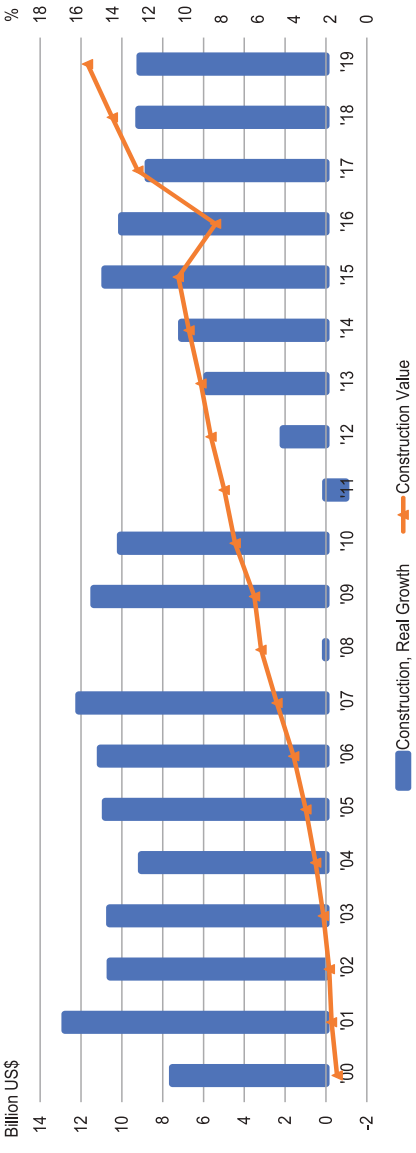


	Sector	No. of projects	Registered Capital (mn US$)
1	**Industry and construction**	**3,104**	**34,325**
	Manufacturing	1,314	24,562
	Property	123	3,876
	Accommodation	103	489
	Construction	134	979
	Mining	2	36
	Electricity, gas and water production and distribution	15	1,010
	Information and Communication	302	537
	Wholesale & Retail; Repair	1,105	2,588
	Water supply & Waste treatment	6	249
2	**Agriculture & Forestry & Aquaculture**	**16**	**99**
3	**Service**	**763**	**3,594**
	Art & Entertainment	6	63
	Logistics	100	346
	Finance, Banking & Insurance	12	1,172
	Health care & Social welfare	6	211
	Science & Technology	493	1,567
	Education and Training	71	65
	Administration & Supporting services	63	124
	Others	12	47.50
4	**Total**	**3,883**	**38,019**

(Source: Vietnam Investment Review)

ARCADIS VIETNAM CO., LTD

CONSTRUCTION VALUE



Year	'00	'01	'02	'03	'04	'05	'06	'07	'08	'09	'10	'11	'12	'13	'14	'15	'16	'17	'18	'19
Construction, Real Growth	7.51	12.78	10.57	10.59	9.03	10.80	11.05	12.10	0.02	11.36	10.06	(0.97)	2.09	5.83	7.07	10.82	10.00	8.70	9.16	9.10
Construction Value	1.63	1.94	2.07	2.39	2.82	3.36	4.03	4.95	5.83	6.19	7.26	7.86	8.59	9.14	9.80	10.39	8.33	12.62	14.03	15.39

MAJOR RATES FOR SELECTED ASIAN CITIES

ARCADIS VIETNAM CO., LTD

DESCRIPTION	UNIT	HO CHI MINH #	MANILA	INDIA[6]	BANGKOK[œ]
		VND	PHP	INR	BAHT
1. Excavating basement ≤ 2.00m deep	m^3	92,400	270	197	120 - 140
2. Excavating for footings ≤ 1.50m deep	m^3	92,400	538	223	120 - 140
3. Remove excavated materials off site	m^3	84,700	350	N/A	120 - 150
4. Hardcore bed blinded with fine materials	m^3	280,900	1,400 - 1,600	4,570	650 - 750
5. Mass concrete grade 15	m^3	1,696,400	4,400	6,180	2,300 - 2,500
6. Reinforced concrete grade 30	m^3	1,912,291	4,899	7,735	2,800 - 3,200
7. Mild steel rod reinforcement	kg	19,764	51 - 55	70	25 - 28
8. High tensile rod reinforcement	kg	19,908	52 - 55	71	24 - 27
9. Sawn formwork to soffits of suspended slabs	m^2	225,750	950 - 1,200	700	450 - 500
10. Sawn formwork to columns and walls	m^2	257,250	1,200	753	450 - 500
11. 112.5mm thick brick walls	m^2	312,780	N/A	1,140	650 - 750
12. "Kliplok Colorbond" 0.64mm profi led steel sheeting	m^2	401,110 - 597,600	1,500	1,765	1,200

13. Aluminium casement windows, single glazed	m^2	6,315,000	12,500 Ω	6,230	7,000
14. Structural steelwork - beams, stanchions and the like	kg	52,650	180	125	60 - 75
15. Steelwork - angles, channels, flats and the like	kg	52,650	160	125	60 - 75
16. 25mm cement and sand (1:3) paving	m^2	94,000	650	493	200 - 240
17. 20mm cement and sand (1:4) plaster to walls	m^2	144,000	500 - 700	405	220 - 260
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	674,180	1,800	1,765	1,200
19. 12mm fibrous plasterboard ceiling lining	m^2	245,700	1,400 - 1,645	1,400	750 - 850
20. Two coats of emulsion paint to plastered surfaces	m^2	88,900	500 - 800	250	140 - 180
Average expected preliminaries	%	8 - 12	12 - 18	9 - 13	12 - 18

The above costs are at **4th Quarter 2019** levels and are based on lump sum fixed price contract rates exclusive of preliminaries and contingencies.

Ω Rate for aluminium with anodized finish; 6mm thick.

₵ All rates above are Supply and Fix, based on projects in Bangalore and are nett of GST. Mumbai costs are generally 8% higher.

Rate for 9mm gypsum board.

oe Rates are nett of VAT.

ARCADIS | Design & Consultancy for natural and built assets

MAJOR RATES FOR SELECTED ASIAN CITIES

ARCADIS VIETNAM CO., LTD

DESCRIPTION	UNIT	SHANGHAI	BEIJING	GUANGZHOU/ SHENZHEN	CHONGQING/ CHENGDU
		RMB	RMB	RMB	RMB
1. Excavating basement ≤ 2.00m deep	m^3	30	30	30	30
2. Excavating for footings ≤ 1.50m deep	m^3	30	33	30	30
3. Remove excavated materials off site	m^3	135	100	110	65
4. Hardcore bed blinded with fine materials	m^3	190	180	190	180
5. Mass concrete grade 15	m^3	740	595	740	550
6. Reinforced concrete grade 30	m^3	780	615	805	580
7. Mild steel rod reinforcement	kg	5.6	5.6	6	6.1
8. High tensile rod reinforcement	kg	5.6	5.6	6	6.1
9. Sawn formwork to soffits of suspended slabs	m^2	95	90	90	65
10. Sawn formwork to columns and walls	m^2	90	85	85	60
11. 112.5mm thick brick walls	m^2	90	80	80	80
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m^2	N/A	N/A	N/A	N/A

13. Aluminium casement windows, single glazed	m^2	700	815*	700	670*
14. Structural steelwork - beams, stanchions and the like	kg	10	11	12.5	11.5
15. Steelwork - angles, channels, flats and the like	kg	8.5	9.5	11.5	10
16. 25mm cement and sand (1:3) paving	m^2	35	32	35	30
17. 20mm cement and sand (1:4) plaster to walls	m^2	35	32	30	28
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	160	145	155	140
19. 12mm fibrous plasterboard ceiling lining	m^2	160	162	190	150
20. Two coats of emulsion paint to plastered surfaces	m^2	40	32	35	35
Average expected preliminaries	%	6 - 12	7 - 12	7 - 10	6 - 12

The above costs are at **4th Quarter 2019** levels and are based on lump sum fixed price contract rates exclusive of preliminaries and contingencies.

* Rates for double glazed window.

(Cont'd)

ARCADIS Design & Consultancy for natural and built assets

MAJOR RATES FOR SELECTED ASIAN CITIES

DESCRIPTION	UNIT	HONG KONG	MACAU	SINGAPORE ♣	KUALA LUMPUR
		HK$	MOP	S$	RM
1. Excavating basement ≤ 2.00m deep	m^3	220	150	20	15 - 25
2. Excavating for footings ≤ 1.50m deep	m^3	200	180	20	15 - 25
3. Remove excavated materials off site	m^3	300δ	150	15 - 20	18 - 30
4. Hardcore bed blinded with fine materials	m^3	950	1,300	50	72 - 100
5. Mass concrete grade 15	m^3	1,100	1,500	177 - 187♣♣	220 - 295
6. Reinforced concrete grade 30	m^3	1,200	1,400	117 - 122	240 - 300
7. Mild steel rod reinforcement	kg	9.7	9	1.25 - 1.35	3.25 - 3.7
8. High tensile rod reinforcement	kg	9.7	9	1.25 - 1.35	3.25 - 3.7
9. Sawn formwork to soffi ts of suspended slabs	m^2	410	280	40	36 - 46
10. Sawn formwork to columns and walls	m^2	410	280	40	36 - 46
11. 112.5mm thick brick walls	m^2	400	450	35 - 40	42 - 50
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m^2	1,000	N/A	43	70 - 85

13. Aluminium casement windows, single glazed	m^2	3,800	4,000	290	380 - 600
14. Structural steelwork - beams, stanchions and the like	kg	35	35	4 - 4.5	6 - 9
15. Steelwork - angles, channels, flats and the like	kg	42	40	4 - 4.5	6 - 9
16. 25mm cement and sand (1:3) paving	m^2	155	120	21	17 - 26
17. 20mm cement and sand (1:4) plaster to walls	m^2	160	150	22	18 - 26
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	400	450	74	50 - 57
19. 12mm fibrous plasterboard ceiling lining	m^2	580	650	30	35 - 45
20. Two coats of emulsion paint to plastered surfaces	m^2	90	200	3.5 - 4	3.4 - 5.0
Average expected preliminaries	%	10 - 15	10	12 - 15	6 - 15

The above costs are at **4th Quarter 2019** levels and are based on lump sum fixed price contract rates exclusive of preliminaries and contingencies.

♣ Rates are nett of GST.

δ Rates including dumping charges.

♣♣ Rate for lean concrete blinding.

(Cont'd)

ARCADIS | Design & Consultancy for natural and built assets

BUILDING TYPE	OUTLINE SPECIFICATION
DOMESTIC	
Apartments, high rise, average standard	Apartment units with fit-out, including air-conditioning, kitchen cabinets and home appliances, but **excluding** decorative light fittings and loose furniture
Apartments, high rise, high end	Apartment units with good quality fit-out, including air-conditioning, kitchen cabinets and home appliances, but **excluding** decorative light fittings and loose furniture
Terraced houses, average standard	Houses with fit-out, including air-conditioning, kitchen cabinets and home appliances, but **excluding** decorative light fittings, loose furniture, garden and parking
Detached houses, high end	Houses with good quality fit-out, including air-conditioning, kitchen cabinets and home appliances, but **excluding** decorative light fittings, loose furniture, garden and parking
OFFICE / COMMERCIAL	
Medium/high rise offices, average standard	RC structure, curtain wall, including public area fit-out, tenant area with raised floor/ carpet, painted wall and false ceiling
High rise offices, prestige quality	

Out-of-town shopping centre, average standard	Including public area fit-out and M&E, but **excluding** shop fit-out
Retail malls, high end	
HOTELS	
Budget hotels - 3-star, mid market	1) Interior decoration 2) Furniture (fixed and movable) 3) Special light fittings (chandeliers, etc.) 4) Operating Supplies and Equipment (OS&E) **excluded.**
Business hotels - 4/5-star	
Luxury hotels - 5-star	
INDUSTRIAL	
Industrial units, shell only (Conventional single storey framed units)	RC structure with steel roof and M&E to main distribution, but **excluding** A/c, heating and lighting
Owner operated factories, low rise, light weight industry	RC structure, including small office with simple fit-out and M&E, but **excluding** A/c and heating

(Cont'd)

ARCADIS | Design & Consultancy for natural and built assets

BUILDING TYPE	OUTLINE SPECIFICATION
OTHERS	
Underground/basement car parks (<3 levels)	RC structure
Multi storey car parks, above ground (<4 levels)	RC structure, natural ventilaion, no facade enclosure
Schools (primary and secondary)	Including fit-out and a/c, but **excluding** educational equipmen
Students' residences	Including fit-out, loose furniture and a/c
Sports clubs, multi purpose sports/leisure centres (dry sports)	Dry sports (no swimming pool) and are for 'leisure centre' type schemes including main sports hall, ancillary sports facilities, changing and showers, restaurant / cafe, bar, etc. Costs include a/c, Furniture, Fittings and Equipment (FF&E).
General hospitals - public sector	Excluding medical and operating equipment

Notes:

1. The costs for the respective categories given above are averages based on fixed price competitive tenders. It must be understood that the actual cost of a building will depend upon the design and many other factors and may vary from the figures shown.

2. The costs per square metre are based on Construction Floor Areas (CFA) measured to the outside face of the external walls / external perimeter including lift shafts, stairwells, balconies, plant rooms, water tanks and the like.

3. All bulidings are assumed to have no basements (except otherwise stated) and are built on flat ground, with normal soil and site condition. The cost excludes site formation works, external works, land cost, professional fees, finance and legal expenses.

4. The standard for each category of building varies from region to region and do not necessary follow that of each other.

5. All costs are in US$/m2 CFA. Fluctuation in exchange rates may lead to changes in construction costs expressed in U.S. dollars.

ARCADIS | Design & Consultancy for natural and built assets

ARCADIS VIETNAM CO., LTD

BUILDING TYPE	US$/m² CFA			
	HO CHI MINH &	MANILA Ω	INDIA ₹	BANGKOK ∞
DOMESTIC				
Apartments, high rise, average standard	643 - 798	968 - 1,197	570 - 653	801 - 951
Apartments, high rise, high end	818 - 938	1,287 - 2,276	860 - 1,035	1,068 - 1,319
Terraced houses, average standard	433 - 509	942 - 1,153	394 - 414	501 - 618
Detached houses, high end	495 - 604	1,830 - 3,103	520 - 544	868 - 1,052
OFFICE / COMMERCIAL				
Medium/high rise offices, average standard	752 - 871	958 - 1,152	430 - 465	801 - 951
High rise offices, prestige quality	868 - 1,182	1,287 - 1,616	538 - 570	1,002 - 1,285
Out-of-town shopping centre, average standard	N/A	814 - 1,014	420 - 455	684 - 885
Retail malls, high end	703 - 920	1,112 - 1,558	585 - 632	918 - 968
HOTELS				
Budget hotels - 3-star, mid market	1,395 - 1,707	1,216 - 1,356	808 - 895	1,252 - 1,385
Business hotels - 4/5-star	N/A	1,371 - 2,290	1,258 - 1,491	1,602 - 1,836
Luxury hotels - 5-star	1,761 - 2,115	1,884 - 3,158	1,590 - 1,740	1,869 - 2,170

INDUSTRIAL				
Industrial units, shell only (Conventional single storey framed units).	309 - 389	519 - 584	336 - 394	534 - 668
Owner operated factories, low rise, light weight industry	349 - 460	697 - 872	357 - 420	N/A
OTHERS				
Underground/basement car parks (<3 levels)	638 - 762	502 - 750	285 - 305	601 - 801
Multi storey car parks, above ground (<4 levels)	411 - 450	483 - 683	227 - 249	200 - 327
Schools (primary and secondary)	539 - 589	713 - 984	282 - 320	N/A
Students' residences	539 - 693	755 -968	305 - 335	N/A
Sports clubs, multi purpose sports/leisure centres (dry sports)	798 - 853	1,207 - 1,756	595 - 620	N/A
General hospitals - public sector	N/A	1,450 - 1,665	653 - 715	N/A
Exchange Rate Used : US$1 =	VND 23,300	PHP 51.05	INR 71.11	BAHT 29.96

The above costs are at **4th Quarter 2019** levels, inclusive of preliminaries but exclusive of contingencies.

Ω Rates include 12% VAT.

₵ Rates are based on projects in Bangalore and are nett of GST. Mumbai costs are generally 8% higher.

& Rates are nett of VAT and contigencies.

œ Rates exclude VAT.

ARCADIS VIETNAM CO., LTD

BUILDING TYPE	US$/m2 CFA			
	SHANGHAI+	BEIJING+	GUANGZHOU/ SHENZHEN+	CHONGQING/ CHENGDU+
DOMESTIC				
Apartments, high rise, average standard	691 - 762	609 - 669	546 - 601	571 - 679
Apartments, high rise, high end	1,561 - 1,701	1,474 - 1,679	879 - 962	923 - 1,163
Terraced houses, average standard	473 - 504	871 - 944	410 - 450	465 - 560
Detached houses, high end	689 - 762	1,674 - 1,747	1,571 - 1,785	610 - 700
OFFICE / COMMERCIAL				
Medium/high rise offices, average standard	878 - 1,161	851 - 1,146	763 - 850	905 - 1,047
High rise offices, prestige quality	1,139 - 1,421	1,146 - 1,883	1,115 - 1,345	1,143 - 1,538
Out-of-town shopping centre, average standard	N/A	649 - 867	735 - 807	731 - 935
Retail malls, high end	1,208 - 1,558	1,173 - 1,615	1,068 - 1,493	1,089 - 1,523
HOTELS				
Budget hotels - 3-star, mid market	970 - 1,183	960 - 1,183	967 - 1,064	981 - 1,210
Business hotels - 4/5-star	1,563 - 2,116	1,604 - 2,118	1,563 - 2,231	1,763 - 2,200
Luxury hotels - 5-star	2,113 - 2,527	2,043 - 2,629	2,125 - 2,342	2,171 - 2,600

INDUSTRIAL				
Industrial units, shell only (Conventional single storey framed units).	273 - 334	268 - 327	488 - 537	446 - 561
Owner operated factories, low rise, light weight industry	423 - 529	519 - 594	N/A	N/A
OTHERS				
Underground/basement car parks (<3 levels)	725 - 1,010	741 - 815	504 - 805	433 - 608
Multi storey car parks, above ground (<4 levels)	371 - 519	446 - 451	360 - 397	345 - 425
Schools (primary & secondary)	554 - 699	517 - 667	400 - 440	458 - 506
Students' residences	406 - 553	366 - 517	N/A	N/A
Sports clubs, multi purpose sports/leisure centres (dry sports)	934 - 1,147	884 - 891	N/A	N/A
General hospitals - public sector	1,427 - 1,841	1,162 - 1,455	N/A	N/A
Exchange Rate Used : US$1 =	RMB 7.00	RMB 7.00	RMB 7.00	RMB 7.00

The above costs are at **4th Quarter 2019** levels, inclusive of preliminaries but exclusive of contingencies.

+ Houses are built to shell and core standard ONLY, where all tenant or occupant areas are unfurnished.
  Schools (primary and secondary) are of public authority standard, no a/c and complete with basic external works.

(Cont'd)

ARCADIS | Design & Consultancy for natural and built assets

ARCADIS VIETNAM CO., LTD

BUILDING TYPE	US$/m² CFA			
	HONG KONG £	MACAU ₮	SINGAPORE ♣	KUALA LUMPUR
DOMESTIC				
Apartments, high rise, average standard	3,020 - 3,490	2,233 - 2,731	1,340 - 1,485	300 - 585 ►
Apartments, high rise, high end	3,910 - 4,550	3,118 - 4,765	2,065 - 3,045	700 - 1,375
Terraced houses, average standard	4,120 - 4,770	3,805 - 4,541	1,740 - 1,920	215 - 345 ▲
Detached houses, high end	6,040 up	4,641 - 6,038	2,210 - 2,900	730 - 990
OFFICE / COMMERCIAL				
Medium/high rise offices, average standard	2,950 - 3,410	2,570 - 3,318	1,740 - 1,920 ♣	570 - 750 ▼
High rise offices, prestige quality	3,550 - 4,120	3,318 - 3,630	1,955 - 2,100 ♣	855 -1,265 ▼
Out-of-town shopping centre, average standard	2,940 - 3,450	2,420 - 3,630	1,955 - 2,030	540 - 720
Retail malls, high end	3,840 - 4,580	3,805 - 4,591	2,065 - 2,245	670 - 1,005
HOTELS				
Budget hotels - 3-star, mid market	3,800 - 4,040	3,381 - 3,830	2,175 - 2,355	1,005 - 1,405
Business hotels - 4/5-star	3,940 - 4,580	4,591 - 5,488	2,790 - 3,115	1,325 - 2,190
Luxury hotels - 5-star	4,580 - 5,270	5,488 - 6,487	2,790 - 3,115	1,910 - 2,455

INDUSTRIAL				
Industrial units, shell only (Conventional single storey framed units).	N/A	N/A	760 - 930	315 - 435
Owner operated factories, low rise, light weight industry	2,290 - 2,880	N/A	N/A	425 - 525
OTHERS				
Underground/basement car parks (<3 levels)	3,200 - 3,840	2,008 - 2,944	940 - 1,255	310 - 535
Multi storey car parks, above ground (<4 levels)	1,920 - 2,280	1,110 - 1,460	650 - 930 ▼	215 - 345
Schools (primary and secondary)	2,490 - 2,690	2,220 - 2,570	N/A	245 - 310 ◄
Students' residences	2,860 - 3,250	1,759 - 2,046	1,595 - 1,705	295 - 365 ♦
Sports clubs, multi purpose sports/leisure centres (dry sports)	3,750 - 4,320	N/A	1,995 - 2,100	585 -735
General hospitals - public sector	4,800 - 5,350	N/A	2,790 - 2,900	840 -1,160
Exchange Rate Used : US$1 =	HK$ 7.82	MOP 8.06	S$ 1.38	RM 4.15

The above costs are at **4th Quarter 2019** levels, inclusive of preliminaries but exclusive of contingencies.

£ Offices of average standard are built to the following provisions:
(i) Curtain wall/window wall facade
(ii) Tenant areas include screeded floor, painted wall and Ceiling
schools (primary and secondary) are of public authority standard, no a/c and complete with basic external works.

Ƀ Rates are exclusive of any management contract fee.

♣ Rates are nett of GST.

♠ Includes raised floor and ceiling to tenanted areas but excludes office carpets (normally under tenant's fit-out).

♥ Open on all sides with parapet.

► 6 - 12 units per floor, 46m² - 83m² per unit, exclude air-conditioning equipment, kitchen cabinets and home appliances.

▲ Terraced houses exclude air-conditioning.

▼ Offices are average standard and exclude tenant fitout.

◄ Schools (primary and secondary) are standard governement provisions.

♦ Studenthostels to university standard.

ARCADIS | Design & Consultancy for natural and built assets

ARCADIS VIETNAM CO., LTD

BUILDING TYPE	HO CHI MINH	MANILA Ω	INDIA ₹	BANGKOK ฿
	VND/m² CFA	PHP/m² CFA	INR/m² CFA	BAHT/m² CFA
MECHANICAL SERVICES				
Offices	2,090,000 - 2,975,000	4,000 - 6,800	4,750 - 6,730	4,400 - 4,800
Industrial *	N/A	800 - 1,600	2,185 - 3,880	1,550 - 1,600
Hotels	N/A	3,500 - 11,190	5,815 - 6,350	4,600 - 5,200
Shopping Centres	N/A	2,890 - 7,070	4,535 - 5,940	4,600 - 4,800
Apartment	1,570,000 - 2,150,000	1,360 - 4,450	2,590 - 3,210	4,300 - 4,500
ELECTRICAL SERVICES				
Offices	2,320,000 - 2,780,000	3,500 - 7,200	4,200 - 5,775	3,400 - 3,800
Industrial **	N/A	2,000 - 3,500	2,470 - 4,105	1,950 - 2,200
Hotels	N/A	4,900 - 10,200	4,660 - 6,355	3,800 - 4,500
Shopping Centres	N/A	3,060 - 6,600	4,005 - 5,360	2,800 - 3,200
Apartment	2,040,000 - 2,572,000	3,600 - 6,300	2,120 - 2,775	2,800 - 3,350
HYDRAULIC SERVICES				
Offices	340,000 - 630,000	1,230 - 2,200	730 - 1,120	780 - 900
Industrial	N/A	800 - 1,400	505 - 880	750 - 790
Hotels	N/A	2,250 - 6,820	3,825 - 5,760	1,400 - 1,650

Shopping Centres	N/A	1,220 - 1,650	1,090 - 1,970	790 - 950
Apartment	660,000 - 770,000	2,250 - 4,100	1,725 - 2,385	1,200 - 1,400
FIRE SERVICES				
Offices	720,000 - 1,185,000	980 - 1,560	1,170 - 1,530	780 - 850
Industrial	N/A	1,000 - 2,500	535 - 735	730 - 750
Hotels	N/A	1,100 - 2,030	1,360 - 1,740	780 - 890
Shopping Centres	N/A	1,090 - 1,730	1,120 - 1,295	780 - 820
Apartment	490,000 - 615,000	980 - 1,350	625 - 745	750 - 850
LIFTS / ESCALATORS				
Offices	680,000 - 1,300,000	1,800 - 4,930	975 - 1,240	1,100 - 1,400
Industrial	N/A	0 - 590	638 - 815	N/A
Hotels	N/A	1,800 - 3,500	1,415 - 2,060	1,100 - 1,400
Shopping Centres	1,390,000 - 1,960,000	1,600 - 3,010	1,655 - 2,120	350 - 450
Apartment	770,000 - 1,120,000	850 - 3,440	880 - 1,140	600 - 800

The above costs are at **4th Quarter 2019** levels, exclusive of contingencies.

* Generally without A/C.

** Excludes special power supply.

Ω Transformer, included in Electrical Services.

₵ Rates are based on projects in Bangalore and are nett of GST. Mumbai costs are generally 8% higher.

φ Based upon nett enclosed area and nett of VAT.

(Cont'd)

ARCADIS | Design & Consultancy for natural and built assets

ARCADIS VIETNAM CO., LTD

BUILDING TYPE	SHANGHAI	BEIJING	GUANGZHOU/ SHENZHEN	CHONGQING/ CHENGDU
	RMB/m² CFA	RMB/m² CFA	RMB/m² CFA	RMB/m² CFA
MECHANICAL SERVICES				
Offices	814 - 1,035	775 - 1,200	775 - 1,150	750 - 1,020
Industrial *	181 - 304	170 - 280	155 - 285	145 - 240
Hotels	1,040 - 1,356	950 - 1,224	1,080 - 1,350	960 - 1,320
Shopping Centres	1,102 - 1,160	806 - 970	715 - 910	920 - 1,040
Apartment	330 - 436	143 - 459	152 - 410	155 - 310
ELECTRICAL SERVICES				
Offices	639 - 721	470 - 850	540 - 795	465 - 680
Industrial **	320 - 453	326 - 459	320 - 459	270 - 370
Hotels	697 - 890	719 - 962	715 - 980	600 - 855
Shopping Centres	556 - 697	490 - 690	500 - 690	525 - 680
Apartment	270 - 395	258 - 406	280 - 500	235 - 350
HYDRAULIC SERVICES				
Offices	115 - 171	97 - 143	128 - 184	88 - 125
Industrial	92 - 35	97 - 143	89 - 124	88 - 125
Hotels	386 - 613	377 - 490	390 - 500	340 - 465

Shopping Centres	144 - 194	143 - 204	114 - 168	105 - 155
Apartment	176 - 238	173 - 234	150 - 280	105 - 185
FIRE SERVICES				
Offices	239 - 335	184 - 270	230 - 350	248 - 300
Industrial	165 - 276	153 - 230	143 - 272	135 - 240
Hotels	303 - 408	224 - 383	285 - 425	260 - 360
Shopping Centres	271 - 403	224 - 383	248 - 383	260 - 380
Apartment	58 - 108	71 - 138	72 - 152	60 - 115
LIFTS / ESCALATORS				
Offices	294 - 578	294 - 577	295 - 517	310 - 570
Industrial	142 - 410	145 - 400	150 - 440	155 - 360
Hotels	230 - 520	232 - 520	250 - 480	288 - 445
Shopping Centres	342 - 520	327 - 520	325 - 470	300 - 455
Apartment	173 - 306	175 - 289	130 - 500	145 - 250

The above costs are at **4th Quarter 2019** levels, exclusive of contingencies.

* Generally without A/C.

** Excludes special power supply.

(Cont'd)

M&E COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	HONG KONG	MACAU	SINGAPORE *	KUALA LUMPUR
	HK$/m² CFA	MOP/m² CFA	S$/m² CFA	RM/m² CFA
MECHANICAL SERVICES				
Offices	1,880 - 2,650	N/A	153 - 249	320 - 490
Industrial *	160 - 260	N/A	34 - 117	85 - 190
Hotels	2,100 - 2,550	2,590 - 2,990	215 - 278	300 - 590
Shopping Centres	2,100 - 2,650	2,350 - 2,940	147 - 246	300 - 475
Apartment	850 - 2,000 up	900 - 1,200	90 - 170	120 - 210
ELECTRICAL SERVICES				
Offices	1,720 - 2,400	N/A	158 - 258	290 - 460
Industrial **	620 - 860	N/A	55 - 136	145 - 190
Hotels	1,900 - 2,500	2,590 - 3,090	277 - 367	295 - 550
Shopping Centres	1,750 - 2,400	2,590 - 2,940	160 - 304	295 - 460
Apartment	1,050 - 2,100 up	1,000 - 1,290	109 - 236	105 - 210
HYDRAULIC SERVICES				
Offices	700 - 850	N/A	26 - 55	35 - 65
Industrial	480 - 650	N/A	18 - 36	40 - 50
Hotels	1,800 - 2,800	1,790 - 2,190	122 - 172	175 - 270

Shopping Centres	700 - 900	600 - 790	46 - 80	30 - 35
Apartment	1,350 - 2,100	1,490 - 1,990	79 - 143	50 - 100
FIRE SERVICES				
Offices	550 - 700	N/A	33 - 56	60 - 80
Industrial	400 - 500	N/A	23 - 51	45 - 65
Hotels	600 - 850	910 - 1,120	28 - 55	65 - 90
Shopping Centres	550 - 700	610 - 810	37 - 56	55 - 80
Apartment	100 - 600	250 - 300	25 - 51	15 - 30
LIFTS / ESCALATORS				
Offices	700 - 1,150	N/A	63 - 162	125 - 350
Industrial	550 - 750	N/A	41 - 104	55 - 180
Hotels	550 - 850	610 - 810	49 - 82	100 - 285
Shopping Centres	850 - 1,000	460 - 710	56 - 90	95 - 120
Apartment	450 - 850	460 - 610	41 - 113	65 - 110

The above costs are at **4th Quarter 2019** levels, exclusive of contingencies.

* Generally without A/C.

** Excludes special power supply.

♣ Rates are nett of GST and excluding BAS.

(Cont'd)

ARCADIS | Design & Consultancy for natural and built assets

UTILITY COSTS FOR SELECTED ASIAN CITIES

CITY	EXCHANGE RATE	ELECTRICITY	
		DOMESTIC	COMMERCIAL/ INDUSTRIAL
	US$1=	US$/kWh	US$/kWh
Ho Chi Minh	VND 23,300	0.13	0.12/0.07
Hong Kong	HK$ 7.82	0.11	0.13
Macau	MOP8.06	0.17	0.17
Shanghai	RMB 7.00	0.888(peak)/ 0.044(normal)	4.860(Basic Tariff) / 0.084(Summer) / 0.080(Non-Summer)
Beijing	RMB 7.00	0.070 - 0.113	0.195 - 0.197(peak) / 0.121 - 0.123 (normal)
Guangzhou	RMB 7.00	0.085 - 0.128	0.089 - 0.124
Chongqing	RMB 7.00	0.074 - 0.081	0.113 - 0.121

The above costs are at **4th Quarter 2019** levels.

Basis of Charges in Ho Chi Minh, Vietnam (All rates are VAT inclusive)

Basis of Charges in Hong Kong, China

- **Electricity** *(Based on tariff scheme of CLP Holdings Limited)*

  Domestic (*bi-monthly consumption)* :

  0 - 400kWh = US$ 0.11/kWh; 400 - 1,000kWh = US$ 0.12/kWh;
  1,000 - 1,800kWh = US$ 0.14/kWh; 1,800 - 2,600kWh = US$ 0.18/kWh;
  2,600 - 3,400kWh = US$ 0.21/kWh; 3,400 - 4,200kWh = US$ 0.23/kWh;
  Above 4,200kWh = US$ 0.23/kWh

- **Water -** Domestic :

  0 - 12m^3 = Free of charge; 12 - 43m^3 = US$ 0.54/m^3;
  43 - 62m^3 = US$ 0.83/m^3; Above 62m^3 = US$ 1.17/m^3

Basis of Charges in Macau, China

- **Electricity**

  Electricity tariffs are a composition of demand charges, consumption charges, fuel clause adjustment and government tax.

- **Water -** Domestic :

  Consumption charge = US$ 0.56/m^3 for 28m^3 or below; US$0.64/m^3 for 29m^3 to 60m^3; US$0.75/m^3 for 61m^3 to 79m^3 and US$0.90/m^3 for 80m^3 or above.
  Other charges (Depending on meter size 15mm - 200mm) :
  Meter rental = US$0.34 - 57.64/month

- **Water -** Commercial/Industrial :

  Charges for ordinary users (e.g. Business, government buildings, schools, associations, hospitals and others) only. Special users (e.g. gaming industries, hotels, saunas, golf courses, construction, public infrastructure and other temporary consumption) are excluded.

Basis of Charges in Chongging, China

- **Unleaded Fuel** 90# = US$0.798/litre; 97# = US$0.893/litre

WATER		FUEL		
DOMESTIC	COMMERCIAL/ INDUSTRIAL	DIESEL	LEADED	UNLEADED
US$/m³	US$/m³	US$/litre	US$/litre	US$/litre
0.26	0.87/0.48	0.79	N/A	0.93
0.83	0.59	1.83	N/A	2.21
0.56 - 0.90	0.75	1.8	N/A	1.64
0.493 - 0.833	0.68	0.90	N/A	1.013
0.714 - 1.286	1.286 - 1.357	0.91	N/A	1.02
0.285 - 0.571	0.54	0.92	N/A	1.02
0.500 - 0.843	0.65	0.778	N/A	0.837

Basis of Charges in Shanghai, China

- **Electricity -** Domestic *(Charge on yearly consumption)* :
  0 - 3,120kWh = US$ 0.088/kWh (peak) / US$ 0.044/kWh (normal);
  3,120 - 4,800kWh = US$ 0.097/kWh (peak) / US$ 0.048/kWh (normal);
  Above 4,800kWh = US$ 0.140/kWh (peak) / US$ 0.070/kWh (normal)
- **Electricity -** Commercial/Industrial *(Charge on yearly consumption)* :
  In dual tariff system; and in rate of 10KVA
- **Water -** Domestic :
  0 - 220m³ = US$ 0.493/m³; 220 - 300m³ = US$ 0.690/m³;
  Above 300m³ = US$ 0.833/m³
- **Unleaded Fuel** = Unleaded fuel rate is for Unleaded 95#

Basis of Charges in Beijing, China

- **Electricity -** Domestic:
  1 - 240kWh = US$0.070/kWh; 241 - 400 kWh = US$0.077/kWh;
  Above 400kWh = US$0.113 / kWh
- **Electricity -** Commercial/Industrial :
  Central Districts: US$0.197/kWh(peak); US$0.123/kWh(normal)
  Other Districts= US$0.195/kWh(peak); US$0.121/kWh(normal)
- **Water -** Domestic: *(Charge on yearly consumption)* :
  1 - 180m3 = US$0.714/m³; 181 - 260m3 = US$1.000/kWh
  Above 261m3 = US$1.286/m³
- **Water -** Commercial/Industrial :
  Central Districts: US$1.357/m³; Other Districts= US$1.286/m³
- **Unleaded Fuel** = Unleaded fuel rate is for Unleaded gasoline 97#

Basis of Charges in Guangzhou, China

- **Unleaded Fuel** = Unleaded fuel rate is for Unleaded gasoline 97#

(Cont'd)

UTILITY COSTS FOR SELECTED ASIAN CITIES

CITY	EXCHANGE RATE	ELECTRICITY	
		DOMESTIC	COMMERCIAL/ INDUSTRIAL
	US$1=	US$/kWh	US$/kWh
Singapore	S$ 1.38	0.17	0.17
Kuala Lumpur	RM 4.15	0.053 - 0.138	0.092 - 0.123
Bangkok	BAHT 29.96	0.078 - 0.148	0.104 - 0.106
Manila	PHP 51.05	0.18	0.16
Bangalore	INR 71.11	0.071 - 0.102	0.088 - 0.129
New Delhi	INR 71.11	0.020 - 0.1125	0.102

The above costs are at **4th Quarter 2019** levels.

Basis of Charges in Singapore *(All rates are nett of GST)*

- Electricity tariff is based on low tension power supply.
- [a]Domestic water tarrif effective from 1 July 2018. Rate includes water conservation tax, water-borne fee, sanitary appliance fee and is an average for the 1st 40m3
- [b]Domestic water tariff effective from 1 July 2018. Rate includes water conservation tax, water borne fee, sanitary appliance fee and is an average for the usage after the 1st 40m3
- Non-domestic water tariff effective from 1 July 2018. Rate includes water conservation tax, water-borne fee,and sanitary appliance fee
- Diesel fuel = as at 17 October 2019.
- Unleaded Fuel = 98 Unleaded petrol as at 17 October 2019.

Basis of Charges in Kuala Lumpur, Malaysia

- Unleaded petrol Ron 95.
- Electricity (Commercial/Industrial): Tariff A & Tariff D (low voltage)

Basis of Charges in Bangkok, Thailand

- Unleaded Fuel = Gasohol 95
- For normal tariff with consumption not exceeding 150 kwh per month

WATER		FUEL		
DOMESTIC	COMMERCIAL/ INDUSTRIAL	DIESEL	LEADED	UNLEADED
US$/m³	US$/m³	US$/litre	US$/litre	US$/litre
1.99[m]/2.67[a]	1 .99	1.38	N/A	1.96
0.137 - 0.482	0.499 - 0.549	0.525	N/A	0.501
0.284 - 0.482	0.317 - 0.528	0.868	N/A	0.900
0.39 - 0.49	1.82	0.875	N/A	1.108
0.562 - 0.703	1.41	0.965	N/A	1.067
0.35 - 1.06	1.405 - 2.467	0.931	N/A	1.033

Basis of Charges in Manila, Philippines

- **Electricity**
  Domestic : 190kWh - 2,099kWh
  Commercial/Industrial : 185,404kWh
- **Water**
  Domestic : 24m³ - 101m³/month
  Commercial/Industrial : 3,750m³/month

GENERAL CONSTRUCTION DATA 2

Material Price Indices

Import Duties

Progress Payments

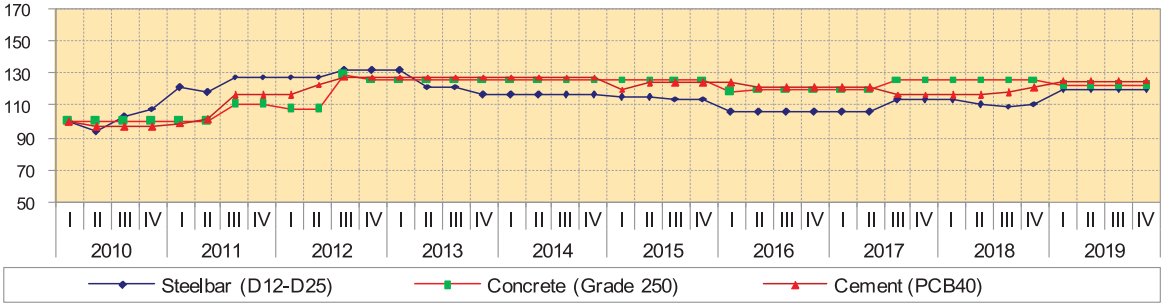
Estimating Rules of Thumb

MATERIAL PRICE INDICES

ARCADIS VIETNAM CO., LTD

Year	Quarter	Steelbar (D12-D25)			Concrete (Grade 250)			Cement (PCB40)		
		VND/T	Index (Base QI/2010)	Inflation	VND/m³	Index (Base QI/2010)	Inflation	VND/kg	Index (Base QI/2010)	Inflation
2010	I	12,452,500	100.00	0.00%	879,819	100.00	0.00%	1,255	100.00	0.00%
	II	11,590,000	93.07	-6.93%	879,819	100.00	0.00%	1,218	97.05	-2.95%
	III	12,830,000	103.03	10.70%	879,819	100.00	0.00%	1,209	96.33	-0.74%
	IV	13,440,000	107.93	4.75%	879,819	100.00	0.00%	1,209	96.33	0.00%
2011	I	15,030,000	120.70	11.83%	879,819	100.00	0.00%	1,241	98.88	2.65%
	II	14,730,000	118.29	-2.00%	879,819	100.00	0.00%	1,263	100.64	1.77%
	III	15,925,000	127.89	8.11%	970,000	110.25	10.25%	1,459	116.25	15.52%
	IV	15,925,000	127.89	0.00%	970,000	110.25	0.00%	1,459	116.25	0.00%
2012	I	15,925,000	127.89	0.00%	945,000	107.41	-2.58%	1,459	116.25	0.00%
	II	15,925,000	127.89	0.00%	945,000	107.41	0.00%	1,546	123.19	5.96%
	III	16,320,000	131.06	2.48%	1,127,272	128.13	19.29%	1,600	127.49	3.49%
	IV	16,320,000	131.06	0.00%	1,109,000	126.05	-1.62%	1,600	127.49	0.00%
2013	I	16,320,000	131.06	0.00%	1,109,090	126.06	0.01%	1,600	127.49	0.00%
	II	15,170,000	121.82	-7.05%	1,109,090	126.06	0.00%	1,600	127.49	0.00%
	III	15,170,000	121.82	0.00%	1,109,090	126.06	0.00%	1,600	127.49	0.00%
	IV	14,470,000	116.20	-4.61%	1,109,090	126.06	0.00%	1,600	127.49	0.00%
2014	I	14,470,000	116.20	0.00%	1,109,090	126.06	0.00%	1,600	127.49	0.00%
	II	14,470,000	116.20	0.00%	1,109,090	126.06	0.00%	1,600	127.49	0.00%
	III	14,470,000	116.20	0.00%	1,109,090	126.06	0.00%	1,600	127.49	0.00%
	IV	14,470,000	116.20	0.00%	1,109,090	126.06	0.00%	1,600	127.49	0.00%
2015	I	14,350,000	115.24	-0.83%	1,109,090	126.06	0.00%	1,504	119.84	-6.00%
	II	14,350,000	115.24	0.00%	1,109,090	126.06	0.00%	1,550	123.51	3.06%
	III	14,200,000	114.03	-1.05%	1,109,090	126.06	0.00%	1,550	123.51	0.00%
	IV	14,200,000	114.03	0.00%	1,109,090	126.06	0.00%	1,550	123.51	0.00%
2016	I	13,100,000	105.20	-7.75%	1,036,000	117.75	-6.59%	1,550	123.51	0.00%
	II	13,100,000	105.20	0.00%	1,055,000	119.91	1.83%	1,523	121.35	-1.74%
	III	13,100,000	105.20	0.00%	1,055,000	119.91	0.00%	1,523	121.35	0.00%
	IV	13,100,000	105.20	0.00%	1,055,000	119.91	0.00%	1,523	121.35	0.00%

2017	I	13,100,000	105.20	0.00%	1,054,545	119.86	-0.04%	1,523	121.35	0.00%
	II	13,100,000	105.20	0.00%	1,054,545	119.86	0.00%	1,523	121.35	0.00%
	III	14,100,000	113.23	7.63%	1,109,091	126.06	5.17%	1,468	116.97	-3.61%
	IV	14,100,000	113.23	0.00%	1,109,091	126.06	0.00%	1,468	116.97	0.00%
2018	I	14,150,000	113.63	0.35%	1,109,091	126.06	0.00%	1,460	116.33	-0.54%
	II	13,700,000	110.02	-3.18%	1,109,091	126.06	0.00%	1,460	116.33	0.00%
	III	13,650,000	109.62	-0.36%	1,109,091	126.06	0.00%	1,476	117.61	1.10%
	IV	13,800,000	110.82	1.10%	1,109,091	126.06	0.00%	1,512	120.48	2.44%
2019	I	14,950,000	120.06	8.33%	1,081,818	122.96	-2.46%	1,580	125.90	4.50%
	II	14,950,000	120.06	0.00%	1,081,818	122.96	0.00%	1,580	125.90	0.00%
	III	14,950,000	120.06	0.00%	1,081,818	122.96	0.00%	1,580	125.90	0.00%
	IV	14,950,000	120.06	0.00%	1,081,818	122.96	0.00%	1,580	125.90	0.00%



IMPORT DUTIES

DESCRIPTION (all figures)	Unit	MFN/WTO	Special Tariff												VAT Tariff
			ATIGA	VCFTA	ACFTA	Non-ACFTA	AKFTA	Non-AKFTA	VKFTA	AJCEP	VJEPA	AANZFTA	AIFTA	VN-EAEUFTA	
Marble	kg/m3	12	0	8	0	(1)	0	(2)	0	8	8	0	0	0	10
Granite	kg/m3	12	0	8	0	(3)	0	(2)	0	8	8	0	0	0	10
Carpentry of Wood	kg	3	0	5	0	-	0	-	0	0	0	0	0	0	10
Porland cement	kg	32	0	13	5	-	*	-	35	*	*	0	*	15,9	10
Ceramic building bricks, flooring blocks	kg/m2/1000 unit	35	0	13	5	-	0	-	0	12,5	12,5	0	10	15,9	10
Ceramic roofing tiles	kg/m2/1000 unit	45	0	46	5	-	0	-	0	16	16	0	12,5	20,5	10
Ceramic floor, hearth, wall, tiles	m2	45	0	48	50	-	0	(4)	0	16	16	0	12,5	20,5	10
Ceramic sanitary fixtures of porcelain	Unit	35	0	25	15	(5)	0	(4)	0	18	18	0	12,5	0	10
Multiple-walled insulating units of glass	kg/m2/unit	25	0	9	0	-	20	-	20	30	30	0	*	0	10
Glass mirror (unframed)	kg / unit	25	0	14	50	-	20	-	20	30	30	0	*	0	10
Concrete steel	kg	15	0	*	15	(6)	*	-	0	0	0	10	*	6,8	10
U,I or H section of steel (height under 80mm)	kg	15	0	37	15	-	*	-	10	0	0	*	*	4,5	10
Alluminium doors, windows, frames and thresholds	m2	15	0	6	0	-	0	-	0	0	0	0	9	0	10
Air conditioner (window or wall mounted) not exceeding 26,38 kW	unit	30	0	13	15	(7)	*	-	12	9	9	0	24,5	0	10
Passenger lifts	unit	10	0	4	0	(8)	0	(8)	0	0	0	0	0	0	10
Water pump	unit	20	0	9	0	-	20	-	20	6	7,5	0	24,5	9,1	10
Electric genset	unit	20	0	9	5	(1)	20	-	20	30	30	0	*	*	10

MFN/WTO : Most-Favored-Nation/World Trade Organisation
: Normal Tax Rate = Favoured Tax Rate x 150%
ATIGA : ASEAN Trade In Goods Agreement/ ASEAN free trade area
VCFTA : Vietnam-Chile Free Trade Agreement
ACFTA : ASEAN-China Free Trade Agreement
AKFTA : ASEAN-Korea Free Trade Agreement
VKFTA : Viet Nam-Korea Free Trade Agreement
AJCEP : ASEAN-Japan Comprehensive Economic Partnership
VJEPA : Vietnam-Japan Economic Partnership Agreement
AANZFTA : Australia-ASEAN-New Zealand Free Trade Agreement
AIFTA : ASEAN-India Free Trade Agreement
VN-EAEUFTA : Vietnam-Eurasian Economic Union Free Trade Agreement

(1): Cambodia, Thailand
(2): Thailand
(3): Cambodia, Indonesia, Thailand
(4): Myanmar
(5): Cambodia, Indonesia, Malaysia
(6): Cambodia, Lao, Malaysia, Thailand
(7): Brunei, Cambodia, Philippines, Thailand
(8): Malaysia, Thailand

(*) When the MFN duty rate of a goods item specified in the preferential import table of rates is lower than the particularly preferential tax rate specified in Vietnam's particularly preferential import table of rates applicable to each trade agreement promulgated under the Finance Minister's decision, the import duty rate applicable to this goods item is the MFN tax rate.
(*) Symbol in AKFTA column: Goods made in Khai Thanh Industrial Zone of North Korea (GIC Items).
(*) Imported goods are not received special preferential tariffs at the corresponding time.

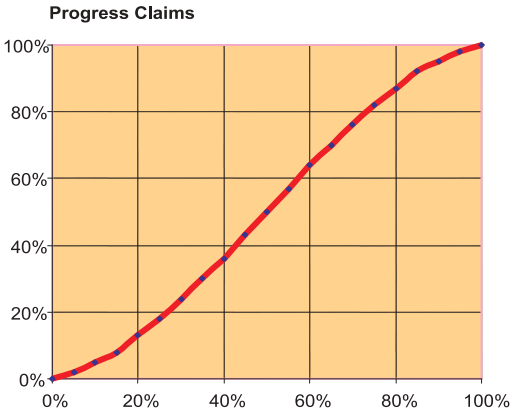
ARCADIS VIETNAM CO., LTD

PROGRESS PAYMENTS

The following graph and table are an indication of the rate of expenditure for construction projects.

The rate of expenditure is an average rate and will vary from project to project when specific project circumstances are taken into account.

No account has been made for retention.



Project Period

CONTRACT	CUMMULATIVE PROGRESS CLAIMS	CONTRACT PERIOD	CUMMULATIVE PROGRESS CLAIMS
5%	2%	55%	57%
10%	5%	60%	64%
15%	8%	65%	70%
20%	13%	70%	76%
25%	18%	75%	82%
30%	24%	80%	87%
35%	30%	85%	92%
40%	36%	90%	95%
45%	43%	95%	98%
50%	50%	100%	100%

ESTIMATING RULES OF THUMB

Structural Design - Concrete Ratios

The following is a range of concrete ratios for building superstructure design in Viet Nam.

Concrete/floor area	0.4 m^3/m^2	to	0.5 m^3/m^2
Formwork/floor area	2.2 m^2/m^2	to	3.0 m^2/m^2
Reinforcement	160 kg/m^3	to	250 kg/m^3

Average External Wall/Floor Ratio

Residential Apartments	1.0 m^2/m^2
Office	0.4 m^2/m^2
Hotel	0.4 m^2/m^2

Average Internal Wall/Floor Ratio

Residential Apartments	1.0 m^2/m^2
Office	0.5 m^2/m^2
Hotel	1.5 m^2/m^2

Air - Conditioning

Average	0.065	RT/m^2 of floor area

Average Lighting Level

Building Type	Lux
Residential	300
Office	500
Retail	400-500
Hotel	250-300
School	300-450

Average Power Density

Building Type	VA/m^2 CFA
Residential	80-100
Office	120-150
Retail	150-200
Hotel - Accommodation	120
Hotel - F&B Area	150
School	45-60

ARCADIS VIETNAM CO., LTD

Average Cooling Load

Building Type	m^2 Cooling Area/ RT
Residential	20-25
Office	12-15
Retail	10-15
Hotel	22-25
School	25

The above ratios are indicative and for reference purposes only. They do not account for buildings with special shapes, configurations or particularly small footprints.

Indicative Dimensions for Sports Grounds

	Length	Width
Tennis Court	40 m	20 m
Squash Court	13 m	6 m
Basketball Court	38 m	23 m
Volleyball Court	30 m	20 m
Badminton Court	20 m	10 m
Ice Rink	61 m	26 m
Soccer Pitch	110-120 m	70-80 m

The above dimensions are for a single court with appropriate clearance. No Spectator seating or support area has been allowed.

Densities of Common Materials

Concrete	2,400 kg/m^3	Water	1,000 kg/m^3
Cement	1,441 kg/m^3	Softwood	700 kg/m^3
Sand	1,600 kg/m^3	Hardwood	1,100 kg/m^3
Gravel	1,350 kg/m^3	Aluminum	2,750 kg/m^3
Steel	7,850 kg/m^3	Soil (compact)	2,100 kg/m^3

(Cont'd)

ESTIMATING RULES OF THUMB

Concrete Strength (in accordance with TCVN 3118 - 1993)

CYLINDER 15cm x 30cm		CUBIC 15cm x 15cm	CYLINDER 15cm x 30cm		CUBIC 15cm x 15cm
Psi	Mpa	Mpa	Mpa	Psi	Mpa
8,000	55	66	60	8,700	50
7,000	48	58	50	7,300	42
6,000	41	49	40	5,800	33
5,000	34	41	35	5,000	29
4,000	28	34	30	4,400	25
3,000	21	25	25	3,600	21
8,000	55	66	20	2,900	17
			15	2,200	13

1.00 MPa = 145.04 Psi

1.00 MPa (Cylinder 15cmx30cm) - 1.20 MPa (Cubic 15cmx30cm)

Reinforcement

Bar Dia. (mm)	Weight/m (kg/m)	Perimeter (m/m)	Area (mm^2)
6	0.222	18.85	28.27
8	0.395	25.13	50.26
10	0.161	31.42	78.54
12	0.888	37.70	113.10
16	1.579	50.27	201.06
20	2.466	62.83	314.16
25	3.854	78.54	490.88
32	6.313	100.53	804.25
40	9.864	125.66	1,256.64

Composition of Concrete (per m3)

Mix	Cement	Sand	Aggregate
1:3:6	216 kg	0.45 m^3	0.90 m^3
1:2:4	308 kg	0.43 m^3	0.86 m^3
1:1:2	540 kg	0.38 m^3	0.75 m^3

ARCADIS VIETNAM CO., LTD

Average Loads	**Volume**
Lorry (24 ton)	10.0 m^3
Concrete truck (24 ton)	5.5 m^3
Barge	200 - 1,450 m^3

Dimensions for Standard Parking Space, Loading / Unloading Bays and Lay - bys

	Length	Width	Minimum Headroom
Private Cars, Taxis and Light Vans	5 m	2.5 m	2.4 m
Coaches and Buses	12 m	3.0 m	3.8 m
Lorries	11 m	3.5 m	4.1 m
Container Vehicles	16 m	3.5 m	3.5 m

Minimum headroom means the clearance between the floor and the lower most projection from the ceiling including any lighting units, ventilation ducts, conduits or similar.

PROPERTY INVESTMENT 3

Building Control and Procedures

Project Closed Out Procedures

Typical Submission Flowchart

Key Planning Parameter

Contractor Selection Strategies

Building Areas Definitions

Procurement Strategies

Property Overview

BUILDING CONTROL AND PROCEDURES

Project Classification

Projects are categorized based on the scale, nature and source of fund in accordance with Appendix 01 of the Decree 59/2015/NDCP dated 18 June 2015. Special projects under the jurisdiction of the Prime Minister's Office encompass the most national important project and or top security project. Projects classified as Group A under the jurisdiction of the Ministers of Ministries encompass infrastructure and ports (sea-ports and airports), oil and gas, cultural and sensitive projects to national defense and all projects over VND 2,300 billion, or equivalent to approx. USD 100 million. Group B projects encompass all other projects and fall under the jurisdiction of Provincial People's Committees and require registration only for investment licenses and applies to projects with a manufacturing and export earnings component. A full assessment for investment licenses is required for all other projects.

Project Investment Appraisal

Developers must carry out the project investment report (feasibility study report) and the basic design for project investment appraisal including the Planning Certificate applied to the People's Committee of the relevant province. The information of basic design to be included encompasses address and description of land plot, function of land plot, red-line boundary and exit and connection with the existing transportation and infrastructure including power, water, storm water drainage , waste water treatment, overall dimension and existing level, construction boundary, construction density, plot ratio, schedule of land use area and schedule of floor area, maximum floor height and building height, parking lot ratios, principle of architectural, structure and infrastructure design, environmental impact plan, fire protection plan, design standards and building codes. The project investment appraisal is in accordance with the Circulation 03/2009/TT-BXD dated 26 March 2009.

ARCADIS VIETNAM CO., LTD

Technical Design and Detailed Design

Developers using foreign design consultancies must ensure their projects undergo a Design Evaluation Assessment to the Ministry of Construction or the Chairman of the Peoples Committee of relevant province who will delegate to the Ministry of Construction or provincial Construction Department. The Technical Design and Detailed Design must be in line with the previous approved basic design including the compliance of design standards and building codes, the integrity of project, the well protection of environment and the safety in the event of fire circumstances. The appraisal and approval of technical and detailed design are in accordance with the Decree 15/2013/NDCP dated 6 February 2013 and Circulation 13/2013/TT-BXD dated 15 August 2013.

Construction Permit

Under the Law on Construction investors must first obtain a construction permit issued by the Provincial People's Committee Construction Department prior to construction can commence.

The investor of residential development projects shall submit an application dossier of all the mentioned inclusion plus the certificate of EIA (Environment Impact Assessment) and Fire Protection, which are issued by the Provincial Department of National Resources and Environment and Provincial Fire Police Department respectively. An application dossier shall contain design implementation drawings and land-use right certificates and land rental contracts. The basic inclusions are mandatory and they are location and description of works, storey height and height above sea-level, site boundary demarcation, overall site plan, major cross sections, main elevations, structural framing plans and foundation designs, environmental and safety technical

(Cont'd)

BUILDING CONTROL AND PROCEDURES

details, principle of materials, schematic line diagrams of infrastructure connection of power, telecommunication, water supply, storm and waste water drainage system, and quantities for key components. Construction Permit applications will be checked against various compliances in respect of boundaries and interference with neighboring properties and approved planning (site coverage, plot ratio and car-parking). The issuing body should provide timely notice to the investor of any non-compliance for their remedy and resubmission to allow the implementation stage to commence. The content of application, procedures of construction permit are in accordance with the Decree 64/2012/NDCP dated 4 September 2012 and Circulation 10/2012/TT-BXD dated 20 December 2012.

Site Clearance

A plan for site clearance and/or resettlement shall be submitted at the same time as the application for the investment license and resettlement carried out prior to site clearance taking place for construction. The time limit for site clearance should comply with the project implementation schedule. Resettlement is based on the principle of providing similar or better conditions and governmental regulations on principles, methods and a price framework shall be adopted by the People's Committee for determination of compensation levels. This is a matter for great uncertainty and foreign investors are advised to seek vacant possession prior to transfer of land use right to the joint venture.

Supervision of Construction

Independent Supervision of construction works by a competent and registered firm is a mandatory requirement. The supervisory role encompasses quality control and compliance checking, schedule control, quantification control, safety and environmental

ARCADIS VIETNAM CO., LTD

hygiene control during construction. The safety and environment control are conducted regularly and continuously during the implementation phase. The Supervisor is also responsible for arranging independent inspections witnessing of testing and commissioning data and assistance in compilation of the dossier for putting the building into operation and receipt of the Occupation Permit.

Commencement of Construction

Construction of works may only commence after satisfying the following conditions: the site area being ready to be handed over, either in whole or in section and free of encumbrances; a construction permit; approved design drawings for execution of building; a construction contract; sufficient capital funds to ensure the building schedule in accordance with the approved building schedule in the investment license; measures to ensure safety and minimum environmental impact during the construction process. Construction All Risks and Third Party Liability Insurances as well as all required insurances in accordance with conditions of contract are recommended to be effected prior to commencement of any physical construction works on Site.

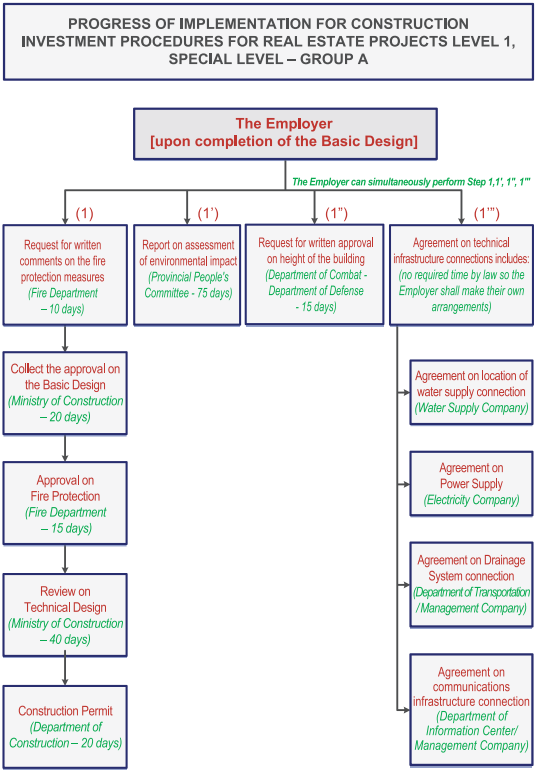
PROJECT CLOSED OUT PROCEDURES

Before an investor can receive rental income and occupy the premises for its intended use, the receipt of approval must be received by the provincial Construction Department or the Ministry of Construction depending on the category and size of the project.

The Construction Department will receive a dossier complete with independent testing and commissioning data (prepared by an independent party not the original designer) for piling, structure, electricity and earthing, environmental impact with regard to water and waste disposal, final checking and approval of fire protection requirement. The dossier needs to have Minutes to put the Building into Operation signed by the Investor, Testing Body, Contractor and Designer including the Project or Construction Manager if appointed. The project close out procedure is in accordance with Decree 46/2015 – NDCP dated 12 May 2015.

ARCADIS VIETNAM CO., LTD

TYPICAL SUBMISSION FLOWCHART



Note:

1. "Date" as above mentioned is considered as working days from the date of receipt of sufficient and valid documents.
2. The Employer can implement procedures for collecting of the agreements on technical infrastructure connections after receipt of approval on the basic design. However, if after the basic design approved by the Ministry of Construction that the technical infrastructure management agency does not agree with the Employer's plan, then the Employer must change the plan for technical infrastructure connections, leading to change in the basic design and to request the Ministry of Construction to approve again on the basis design dossier. Therefore, the Ministry of Construction recommends that the Employer should have in advance the written agreement on the provision of electricity, water and drainage connections, transportation system connection for the project, infrastructure communication connection before submitting documents to the Ministry of Construction for approval on the basic design.

KEY PLANNING PARAMETER

MAXIMUM SITE COVERAGE

Maximum site coverage of linked houses and villa houses

Land plot area (m^2/house)	≤50	75	100	200	300	500	≤1,000
Maximum site coverage (%)	100	90	80	70	60	50	40

Maximum site coverage of condominium buildings

Building height measured from ground level (m)	Maximum site coverage (%) according to land plot area			
	≤3,000 m^2	10,000 m^2	18,000 m^2	≥35,000 m^2
≤16	75	65	63	60
19	75	60	58	55
22	75	57	55	52
25	75	53	51	48
28	75	50	48	45
31	75	48	46	43
34	75	46	44	41
37	75	44	42	39
40	75	43	41	38
43	75	42	40	37
46	75	41	39	36
>46	75	40	38	35

The maximum site coverage of urban public building such as educational, healthcare, cultural buildings, sport centres and market in the new urban development area is 40%.

For the other types of urban public buildings and mixed-use buildings built on a land plot of area ≥3.000m2, depending on its location in urban areas and specific planning solution for land plot, the maximum site coverage can be as specified in the table below as long as the requirement of the minimum distance between buildings, the set-back areas and parking lot must be complied with the current regulation.

ARCADIS VIETNAM CO., LTD

Building height measured from ground level (m)	Maximum site coverage (%) according to land plot area			
	3,000 m^2	10,000 m^2	18,000 m^2	≥35,000 m^2
≤16	80	70	68	65
19	80	65	63	60
22	80	62	60	57
25	80	58	56	53
28	80	55	53	50
31	80	53	51	48
34	80	51	49	46
37	80	49	47	44
40	80	48	46	43
43	80	47	45	42
46	80	46	44	41
>46	80	45	43	40

For those built on a land plot of area <3.000m2, the site coverage of the remaining land lot after building set-back area can be 100% but the requirement of the minimum distance between buildings, the set-back areas and parking lot must be complied with the current regulation.

MINIMUM LANDSCAPING RATIO FOR CONSTRUCTION LAND LOTS

Type of building	Minimum of ratio for landscape (%)
1. Dwelling House	
- Detached house (garden house, villa)	20
- Condominium	20
2. Public building	
- Kindergarten, School	30
- Hospital	30
- Culture house	30
3. Factory	
- Scattered construction	20
- Combined block	20

(Cont'd)

KEY PLANNING PARAMETER

MINIMUM OF CAR PARKING LOT

Type of building	Minimum car parking lot
- Hotel from 3 star standard upward	4 bedrooms / 1 lot
- High-grade office, foreign affairs offices	100m^2 floor area / 1 lot
- Super market, shopping mall, conference centre, exhibition, show room and display center	100m^2 floor area / 1 lot
- High-grade/luxury condominium	1 apartment / 1.5 lot

MINIMUM OF PARKING SPACE

Type of vehicle	Minimum area of parking space
- Car parking space	25 m2
- Motorcycle parking space	3 m2
- Bicycle parking space	0.9 m2
- Bus parking space	40 m2
- Truck parking space	30 m2

For the hotel grade of below three-star, public administration office and public service buildings, the numbers of parking lot must be at least 50% of the parking lots specified in the table above.

ROAD FOR FIRE PROTECTION

Width of road > 3.5 (m)

Clearance height > 4.25 (m)

Area for making U-turn > 15x5 (m)

ARCADIS VIETNAM CO., LTD

Table A - Procurement Strategy

Project Criteria		Appropriateness of Contract Strategy						
Parameter	**Objectives**	**PPP**	**Traditional**	**Management Contracting**	**Construction Management**	**Design and Construct**	**Prime Contracting**	**Framework Agreements**
Timing	Early Completion	x	x	✓	✓	✓	x	✓
Cost	Pre construction price certainty	✓	✓	x	x	✓	x	✓
Quality	Design prestige	x	✓	✓	✓	x	x	x
Variations	Avoid prohibitive cost of change	x	✓	✓	✓	x	x	x
Complexity	Technically advanced or highly complex building	✓	x	✓	✓	x	✓	x
Responsibility	Single contractual link	✓	x	x	x	✓	✓	✓
Professional Responsibility	Need for design team to report to sponsor	x	✓	✓	✓	x	x	✓
Risk Avoidance	Desire to transfer complete risk	✓	x	x	x	✓	✓	✓
Damage Recovery	Facility to recover cost direct from construction	✓	✓	✓	x	✓	✓	✓
Build ability	Contractor input to economic construction	✓	x	✓	✓	x	✓	✓

Table B - Risk Allocation

Contract Strategy	INDICATIVE RISK ALLOCATION	
	Client	Contractor
Public Private Partnerships		■
Design and Construct		■
Prime Contracting		■
Traditional		■
Framework Agreements		■
Management Contracting		■
Construction Management		■

ARCADIS VIETNAM CO., LTD

CONTRACTOR SELECTION STRATEGIES

There are four tiers of contractor available for tendering foreign investment projects, these tiers are not official classifications.

Tier 1 Foreign contractor from Japan, Korea, Singapore, Hong Kong, Europe, Australia

Tier 2 Foreign contractor from China, Russia, Taiwan and Malaysia

Tier 3 Local private and Joint Stock contractors

Tier 4 State contractors

There is a considerable diversity between these tiers in terms of general expertise, technological know-how, human-resource skills and training which leads to a different risk profile for delivery of buildings to time, quality and cost targets. The lowest tiers use less modern equipment, machinery and system formwork and have much lower human resource costs. This is inevitably leading to higher tender returns. A rigorous pre-qualification procedure is recommended with weighted scoring in line with project objectives eg. lowest cost objective will have an inevitable impact on quality and time.

A typical pre-qualification assessment might cover (indicative weighting for Vietnam 1 through 10, 10 highest)
Vietnam experience (if foreign) 8
Project type experience (local and foreign) 7
Financial capacity (particularly local) 8
Plant and equipment inventory (particularly local) 7
Direct labour strength (local and foreign) 6

(Cont'd)

CONTRACTOR SELECTION STRATEGIES

Proposed joint venture / sub-contracting arrangements (local and foreign) 7
Planning and programming capability (particularly local) 8
Cognizance of international procedures, codes and specifications (local) 8

Financial capacity (local)

Local contractors now have access to bank funding but should not be expected to finance projects by punitive cash-flow arrangements. Most contracts are let with investors paying 10-15% advance payments which is re-couped from subsequent milestone or interim payments. Deductions for defective works and liquidated damages may compound problems so careful diplomacy is often more productive. Claims for additional costs due to prevailing market conditions are more common in today's climate but also for misinterpretation of contract obligations making the need for good quality contract documentation essential.

Plant and Equipment Inventory (local)

State firms tend to share or pool plant and equipment for example tower-cranes and piling rigs. It is often impossible to determine the true owner of plant and equipment on-site in the event of premature demobilization.

It is essential that the pre-qualification process determines that a contractor owns plant of sufficient size, capacity and suitable state of repair as contractors may not have full control of leased equipment suddenly required on other job-sites.

Direct labour strength (local)

The source of labour supply, also being verified as labour strength, may be "topped-up" by importing

ARCADIS VIETNAM CO., LTD

unskilled and untrained workers from remote provinces, who often are not legally resident at their working destination.

Contractors should be asked to prove their direct labour records and declare any labour only sub-contracting arrangements. The tier 1 contractors will not have any full-time dedicated labour on their payroll. Tier 2 contractors often import workers from their home country for the project duration and shall be responsible for all associated costs and taxes.

Labour is not usually permitted to reside on site. Contractors shall provide details of training curriculums for each trade discipline when tendering as well as health and safety programmes.

Proposed sub-contracting arrangements (local)

Sub-contracting is prevalent in Vietnam so it is essential to check the percentage of work subcontracted out to ensure quality control issues are minimized. It is highly unlikely that any one firm will possess the required human resource and plant and equipment to complete a project using in-house resources. Foreign contractors largely act as management function providing only project engineers, site supervisors, health and safety officers and planners. Both foreign and local contractors rarely directly employ foremen, gang-leaders or indeed skilled and unskilled operatives. These arrangements are perfectly normal and accepted but it is preferable to know in advance the exact arrangements being proposed to ensure no conflicts of interests with other projects and to understand fully the amount of "control" the appointed contractor has on the works he is engaged to undertake.

Planning and programming capability (local)

This capability needs careful verification from the lowest tier contractors. The use of first principle time

(Cont'd)

CONTRACTOR SELECTION STRATEGIES

resourced planning is rarely used. The approach adopted is often "rule of thumb" whereby planners determine critical activity durations using their knowledge of other projects. Floor/structure cycle times are often inconsistent and the lack of recording and reutilization of historical data means the planning process can be crude at best. Time or delay is a perennial problem in Vietnam sometimes due to employer delays such as site clearance or permit issues or neutral delays such as weather but contractor culpable delays should not be of any surprise. The use of critical path analysis, planned impacted analysis, window analysis and collapsed as-built are not widely known in Vietnam. This means time recovery analysis and the implementation of acceleration measures are not readily adopted and time for completion can become unpredictable. The input of experienced Project Management might be invaluable in reducing delays and formulating time recovery plans.

International experience (local)

The influx of foreign invested projects has brought with it an influx of different standards and procedures normally from the source country. It is essential to determine the degree of exposure local contractors have had to international standards, procedures and indeed expectations. The Vietnamese Codes and Standards whilst detailed need to be used concurrently with international standards such as American, Australian, British or Japanese standards and specifications as they are not comprehensive enough to "stand-alone" on an international standard project. There is no uniform and widely accepted standard or specification. The nett result is a hybrid where every project has a unique and bespoke set of standards depending on the investor and his consultant source country. The appointed design team will naturally look to use their familiar "off the shelf" specifications and tendering contractors should be asked to list the

ARCADIS VIETNAM CO., LTD

standards they have successfully built for the key trades and building elements. There is a move to produce a set of consolidated Vietnamese standards but this is some way off and the hybrid approach will continue for some time to come.

However, no international standard shall over-ride any mandatory Vietnam building code or standard. Design consultants should provide a translated bi-lingual version of their specifications and locally registered design firms shall provide “localization” of the design to obtain local approvals. The contractors should also be asked to list investments such as system formwork and their use of recent technology and list previous employers and consultants whom they have worked with.

BUILDING AREAS DEFINITIONS

The following guidelines are derived from the RICS "Code of Measuring Practice: A Guide for Surveyors and Valuers. 5th Edition' and the RICS 'Standard Form of Cost Analysis, Principles, Instructions and Definitions".

Gross External Area (GEA)

Gross External Area is the area of a building measured externally at each floor level.

Includes:

- Perimeter wall thicknesses and external projections
- Areas occupied by internal walls and partitions
- Columns, piers, chimney breasts, stairwells, liftwells, and the like
- Atria with clear height above, measured at base level only
- Internal balconies
- Structural, raked or stepped floors are to be treated as a level floor measured horizontally
- Horizontal floors, whether accessible or not, below structural, raked or stepped floors
- Mezzanine areas intended for use with permanent access
- Lift rooms, plant rooms, fuel stores, tank rooms which are housed in a covered structure of a permanent nature, whether or not above main roof level
- Outbuildings which share at least one wall with the main building
- Loading bays
- Areas with a headroom of less than 1.5m
- Pavement vaults
- Garages
- Conservatories

ARCADIS VIETNAM CO., LTD

Excludes:

- External open-sided balconies, covered ways and fire escapes
- Canopies
- Open vehicle parking areas, roof terraces, and the like
- Voids over or under structural, raked or stepped floors
- Greenhouses, garden stores, and the like in residential property

Gross Internal Area (GIA)

Gross Internal Area is the area of a building measured to the internal face of the perimeter walls at each floor level

Includes:

- Areas occupied by internal walls and partitions
- Columns, piers, chimney breasts, stairwells, lift-wells, other internal projections, vertical ducts, and the like
- Atria with clear height above, measured at base level only
- Internal open-sided balconies and the like
- Structural, raked or stepped floors are to be treated as a level floor measured
- Horizontal floors, with permanent access, below structural, raked or stepped floors
- Corridors of a permanent essential nature (e.g. fire corridors, smoke lobbies, etc.)
- Mezzanine areas intended for use with permanent access
- Lift rooms, plant rooms, fuel stores, tank rooms which are housed in a covered structure of a permanent nature, whether or not above main roof level

(Cont'd)

- Service accommodation such as toilets, toilet lobbies, bathrooms, showers, changing rooms, cleaners' rooms, and the like
- Projection rooms
- Voids over stairwells and lift shafts on upper floors
- Loading bays
- Areas with a headroom of less than 1.5m
- Pavement vaults
- Garages
- Conservatories

Excludes:

- Perimeter wall thicknesses and external projections
- External open-sided balconies, covered ways and fire escapes
- Canopies
- Voids over or under structural, raked or stepped floors
- Greenhouses, garden stores, fuel stores, and the like in residential property

Gross Floor Area (GFA)

Gross Floor Area is the total of all enclosed spaces fulfilling the functional requirements of the building measured to the internal structural face of the enclosing walls.

Includes:

- Areas occupied by partitions, columns, chimney breasts, internal structural or party walls, lift-well, and the like
- Lift, plant, tank rooms and the like above main roof slab

ARCADIS VIETNAM CO., LTD

BUILDING AREAS DEFINITIONS

Note:

- Sloping surfaces such as staircases, galleries, tiered terraces and the like should be measured flat on plan.

Excludes:

- Any spaces fulfilling the functional requirements of the building which are not enclosed spaces (e.g.open ground floors, open covered ways and the like). These should each be shown separately
- Private balconies and private verandahs which should be shown separately.

Net Internal Area (NIA)

Net Internal Area is the usable area within a building measured to the internal face of the perimeter walls at each floor level.

Includes:

- Atria with clear height above, measured at base level only
- Entrance halls
- Notional lift lobbies
- Kitchens
- Built-in units, cupboards, and the like occupying usable areas
- Ramps of lightweight construction to false floors
- Area occupied by ventilation/heating grills
- Area occupied by skirting and perimeter trunking
- Areas severed by internal non-structural walls, demountable partitions, whether or not permanent, and the like, where the purpose of the division is partition of use, not support, provided the area beyond is not used in common
- Pavement vaults.

(Cont'd)

Excludes:

- Those parts of entrance halls, atria, landings and balconies used in common
- Toilets, toilet lobbies, bathrooms, cleaners' rooms, and the like
- Lift rooms, plant rooms, tank rooms (other than those of a trade process nature), fuel stores, and the like
- Stairwells, lift-wells and permanent lift lobbies
- Corridors and other circulation areas where used in common with other occupiers or of a permanent essential nature (e.g. fire corridors, smoke lobbies, etc.)
- Areas under the control of service or other external authorities including meter cupboards and statutory service supply points
- Internal structural walls, walls enclosing excluded areas, columns, piers, chimney breasts, other projections, vertical ducts, and the like
- The space occupied by permanent and continuous air-conditioning heating or cooling apparatus, and ducting in so far as the space it occupies is rendered substantially unusable
- Areas with headroom of less than 1.5m
- Areas rendered substantially unusable by virtue having a dimension between opposite faces of less than 0.25m
- Vehicle parking areas (the number and type of spaces noted)

Building Footprint

Building Footprint' is not a term defined by the RICS, but is generally understood to mean the area of the land upon which the building sits (excluding all basements), measured to the outside face of external walls.

ARCADIS VIETNAM CO., LTD

PROCUREMENT STRATEGIES

Overview

The primary consideration in the choice of procurement strategy is the need to obtain overall value for money during the entire life of the facility and each method has a different risk profile for the employer and contractor. In Vietnam the following is currently prevalent.

Traditional Lump Sum	- high extent
Management Contracting	- low extent
Construction Management	- medium to high extent
Design and Construct	- low extent
Prime Contracting	- low extent
Framework Agreements	- rising extent
Public Private Partnership (PPP)	- new and promoted extent

Most if not all projects in Vietnam are tendered in competition. The new Law on Bidding passed in 2013 replaces the earlier legislation promulgated in 2006 and is intended primarily for state projects defined as over 30% total investment capital by a state entity and for Vietnamese Private firms. Foreign Investors do not need to follow the Bidding Law although it is advisable. The law recognizes open tendering, limited tendering and competitive tendering. For state projects tenders are normally sought using a “two-envelope system” i.e. technical and financial the former being opened first to check for compliances.

Most foreign entities short-list tendering contractors by having a robust pre-qualification procedure for checking financial and technical competencies. Tenders are usually open for 90 days.

The FIDIC suite of contracts is widely used for Vietnam construction contracts with the 1999 Red Book being the most commonly used. There are official translations of some of the FIDIC forms and the Vietnam Engineering Consultant Association (VECAS) is an official member of FIDIC. Most Official Development Aid (ODA) projects in Vietnam adopt FIDIC also.

a) Traditional Lump Sum
Most contracts are let in Vietnam on a lump sum basis using a modified FIDIC Red Book Contract which in its unamended form is a measure and value contract. This

method requires appointment of independent design consultants by the employer and a sufficiently developed design preferably "frozen" prior to tender. Bills of Quantities are usually provided for "information only" to the contractor who normally provide their own quantities with their tender for comparison purposes only and only the rates are contract rates with any "errors and omissions" not being subject to remeasurement after the lump sum is finalized. Prime costs sums for nominated subcontracts for mechanical and electrical and lift sub-contracts are widely used.

b) Construction Management
This form of procurement is often portrayed as "fast-track" as tender packages are often let successively throughout the design process with no need to wait until detail design is complete. A construction management consultant is engaged normally for a fixed percentage fee to procure and manage the individual trade contracts which are placed by the employer. This necessitates effective cost management as the total construction budget is not finalized until the final packages are let. The employer bears not an insignificant risk in terms of price certainty, delays, disruption, design and coordination problems. Clients adopting this approach need to be conversant with the local environment and have the requisite in-house skills to deal with issues as they arise. This method of procurement, combined with traditional lump sum packages, is popular with high rise buildings.

c) Framework Agreements
Framework agreements referred sometimes as "call-off" contracts between investors with a "pipe-line" of projects and contractors can result in significant savings to both parties using any of the procurement options above. The advantages are time reduced for tendering and negotiations, improved processes and knowledge transfer, bulk order costs savings, reduced confrontation and economies of scale due to continuity of workflow. All these advantages are extremely important in the Vietnam context because it is of paramount importance to maintain healthy relationships between employers and contractors as unforeseen events are prevalent during the design and procurement stages in Vietnam.

d) Public Private Partnership (PPP)
PPP is the generic term for the relationships formed

(Cont'd)

ARCADIS VIETNAM CO., LTD

PROCUREMENT STRATEGIES

between the private sector and public bodies often with the aim of introducing private sector resources and / or expertise in order to help provide and deliver public sector assets and services. The term PPP is used to describe a wide variety of working arrangement from loose, informal and strategic partnerships to design, build, finance and operate type services contract and formal points of joint venture companies. The PPP mechanisms would help attract commercial capital and other sources of capital that private investors will seek for PPP projects. In that way, investment efficiency will be improved while public debts controlled at safe levels. Investors of projects will be chosen via competitive bidding in order to maximize benefits and create equal opportunities for domestic and foreign investors. On 9 November 2010 the Prime Minister of Vietnam authorized the issue of detailed regulations covering the piloting of investment in the form of Public Private Partnerships (PPPs) in Vietnam. The PPP Regulations became effective on 15 January 2011 and will continue to be implemented over the next three to five years. The Vietnamese Government intends to carry out PPP programme according to a list of defined projects to ensure that investors are provided with carefully prepared projects with a view to creating a real PPP commercial market in Vietnam. In the coming years the government will carry out some pilot projects. The PPP projects in the country will concentrate on core technical infrastructure that requires much capital, and furthermore, mechanisms to mobilize private investment: (i) Roads, Road bridges, road tunnels, ferry road stations; (ii) Railway, railway bridges, railway tunnels; (iii) Airports, sea ports and river ports; (iv) Clean water supply systems; water drainage systems; liquid and solid waste collection and treatment systems; (v) Power plants, electricity transmission cables; (vi) Hospitals; (vii) Other infrastructure projects.

The decrees on PPP Investment Form has been official effective since 14 Feb 2015 to create solid legal frame work for preparation and implementation of PPP projects. There are subsequent circulars issued in 2016 for further guidance on how to preliminary project selection for implementation, establishment, submission, appraisal and approval of Feasibility Study Report (Circular 02); procedure of obtaining the Investment Registration Certificate and the project contract for implementation of the Project which shall be entered by the investor and the competent authority being the party to the contract (Circular 06).

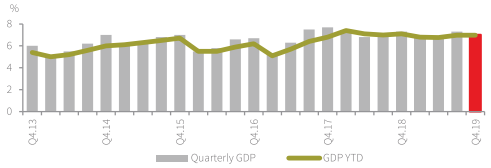
PROPERTY OVERVIEW

VIETNAM'S ECONOMIC BACKDROP

Growth of Vietnam's economy stayed strong: Amid the prevailing global "high uncertainty" and growth slowing down, Vietnam's economy still achieved impressive growth of 7.02% in 2019, well exceeding the target set by the National Congress of 6.6-6.8%. In 4Q19 alone, the GDP growth reached 6.97% y-o-y, similar to the number of 3Q19, and outstripped 1Q and 2Q19's figures.

In the overall growth, agriculture, forestry and fishery in 2019 recorded the lowest growth of 2.01%, only above 1.36% posted in 2016 during 2011-19 period. This was due to a combination of factors including drought, climate change, difficulties in consumer markets, export prices and the African swine cholera that affected the livestock industry. Meanwhile, industrial and construction fared well with 8.9% y-o-y growth in 2019; Processing and manufacturing continued to play a leading role in Vietnam's economy. The services sector continued the good momentum with more than 7% growth in 2019. Regarding the economic structure in 2019, agriculture, forestry and fishery accounted for 13.96% of GDP; industrial and construction contributed 34.49%; services and product taxes accounted for 41.64% and 9.91% respectively. (the corresponding structure in 2018 was: 14.68%; 34.23%; 41.12% and 9.97%).

Figure 1: Real GDP Growth (y-o-y)



Robust retail turnover and international arrivals: Total retail sales of consumer goods and services reached a high growth in 2019 at 12% y-o-y, reflecting an increase in consumer demand. In terms of tourism, Vietnam remained an attractive destination for tourists with more than 18 million international visitors in 2019, an increase of 16.2% y-o-y, according to the Vietnam National Administration of Tourism. Visitors from Asia

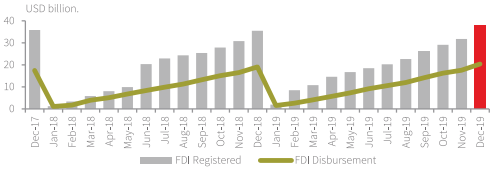
ARCADIS VIETNAM CO., LTD

still dominated, with those from China, South Korea and Japan taking the lead.

Figure 2: Retail Sales vs. International Arrivals Growth (year-to-date, y-o-y)

Vietnam's FDI registered new growth: Total FDI pledged to the country reached USD 38.02 billion in 2019, an increase of 7.2% y-o-y. Specifically, the total newly registered capital reached USD 16.75 billion, equivalent to 93.2% of the level recorded in the same period last year. FDI disbursement was recorded at at USD 20.38 billion in 2019, an increase of 6.7% y-o-y. Among the 19 invested industries, processing and manufacturing remained the most attractive sector, recording 24.56 billion USD, accounting for 64.6% of the total capital. Real estate ranked second with USD 3.88 billion, making up 10.2% of total capital, followed by whole sales and professional, scientific activities. South Korea took the lead among 125 markets investing in Vietnam in 2019, with a total of USD 7.92 billion, accounting for 20.8% total capital. It was followed by Hong Kong SAR (China) and Singapore with USD 7.87 and 4.5 billion respectively.

Figure 3: FDI (year-to-date)



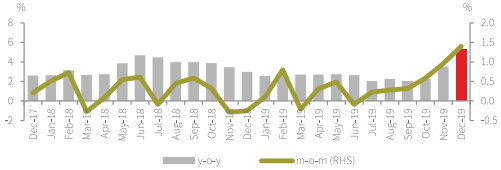
Source: General Statistics Office

(Cont'd)

VIETNAM'S ECONOMIC BACKDROP

CPI remained stable: Vietnam's average CPI inched up 2.79% y-o-y in 2019, which was the lowest in the past three years. The increase was mainly due to (i) The price of electricity was raised from March 20, 2019, along with the increase in electricity demand in hot weather; (ii) Provinces lifted the price of health services according to Circular No. 13/2019 / TT-BYT dated July 5, 2019, (iii) A number of provinces adjusted up tuition fee for the new school year, leading to the price index in this group up 6.73% y-o-y. Moreover, the increase in food prices including pork (11.79%), drinks and cigarettes (1.79%) and public transport services (3.02%), etc. were also contributing factors.

Figure 4: CPI – Overall

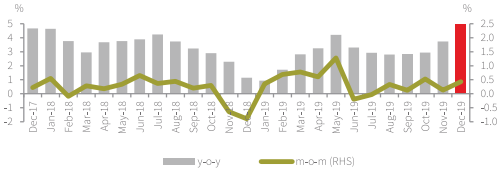


Vietnam'stotal import-export turnover reached high level: Total import and export turnover of goods in 2019 was estimated at USD 516.96 billion, of which export turnover reached USD 263.45 billion, up 8.1% y-o-y. A trade surplus of 9.9 billion USD was recorded during the period, the highest level of four years in a row. The United States and EU are the two largest export markets of Vietnam, contributing USD 60.7billion and USD 41.7 billion, respectively. Main export products include mobile phones, electronics and computers devices, appliances, textiles, and footwear. Meanwhile, China and South Korea remained the two main import markets of Vietnam with total import turnover of USD 75.3 billion and USD 47.3 billion respectively, focusing on machinery equipment, appliances and means of transportation.

In 4Q19 alone, the export turnover was estimated at USD 68.8 billion, albeit down 4.6% q-o-q, rising 10% y-o-y. Similarly, the import turnover declined slightly by 0.8% q-o-q to USD 66 billion, but still rose 8.9% on a yearly basis.

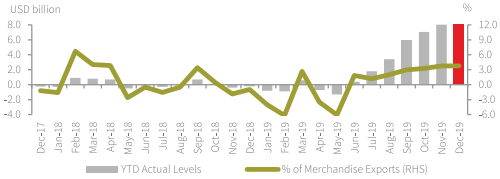
ARCADIS VIETNAM CO., LTD

Figure 5: CPI – Housing & Construction Materials



Strong surge in the number of newly registered enterprises: In 2019, about 138,100 enterprises were newly established. The average registered capital reached VND 12.5 billion per enterprise, up 11.2% y-o-y. In the same period, there were more than 7,900 newly registered businesses in real estate sector, up 11.6% y-o-y, accounting for 5.7% of the total newly registered one. In addition, there were 43,700 enterprises halted operation and pending for dissolution procedures. Among them, 17,700 enterprises had their business registration certificates revoked under the 2018 data standardisation programme which aimed to eliminate businesses established but no longer in operation.

Figure 6: Merchandise Trade Balance



Source: General Statistics Office, General Department of Vietnam Custom

(Cont'd)

HCMC

Office Market

Rents[1]

USD 29.1

per sqm per month, net on NLA

Rent Growth y-o-y

7.4%

Stage in Rent Cycle

Strong Growth

Market continues to favour landlords

Overall net absorption recorded more than 50,000 sqm, mainly contributed by newly completed buildings, namely Lim Tower 3 and Phu My Hung Tower. Amid strong demand and limited upcoming supply, landlords became more aggressive in asking rents and leasing strategy, focusing on selecting high-profile and sustainable tenants.

Co-working operators kept expanding quickly, contributing largely to the net absorption during the quarter.

Vacancy rate remains tight despite new buildings added

Lim Tower 3, Phu My Hung Tower and Viettel B building entered the market in 4Q19, bringing up HCMC Grade A&B office stock to 1.306 million sqm, up 7.3% q-o-q and 11.3% y-o-y.

Despite the new supply, Grade A&B market continued to tighten with vacancy rate recorded at 6.5% at end-2019. In the current market, only one Grade A building (Lim Tower 3) and ten Grade B buildings that can provide a contiguous space larger than 1,000 sqm.

Rents soar past the recent peak to reach a decade high

Rental rates in Grade A&B increased by an average of 1.1% q-o-q and 7.4% y-o-y to reach a decade high of USD 29.1 per sqmper month in 4Q19. This was supported by strong demand and higher rental rates in newer office developments. Also, landlords continued to have strong bargaining power

ARCADIS VIETNAM CO., LTD

this quarter given the restless rental growth amid limited stock.

Outlook

In 2020, total stock in HCMC Grade A&B office market is forecasted to rise to 1.5 million sqm with the completion of nine buildings, mainly from the Grade B segment. Meanwhile, majority of the Grade A offices in prime location deferred their completion date to beyond 2021 owing to prolonged approval process.

Demand is likely to slow down in 2020-2022 compared to 2017-2019 period, as global economic uncertainty may affect tenants' rental budget while the rental of Grade A buildings are currently at high level.

Co-working is gaining popularity, not only for start-ups and SMEs. This trend is expected to continue in the future.

Figure 7: Office Total Stock

('000 sqm NLA)

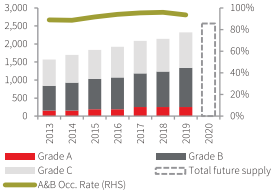
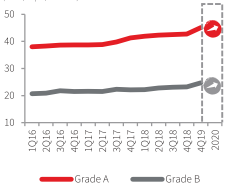


Figure 8: Office Average Rents

(USD/sqm/month)



Note:
[1] Rent value refers to average net rent of the Grade A and B office markets, excluding VAT and service charges.
[2] Flexible space represents a variety of workspaces used by occupiers to increase their portfolio flexibility through short-to medium-term leases.
[3] CBD area refers to District 1. Non-CBD area refers to the rest of the city.
Source: JLL Research

(Cont'd)

HCMC

Retail Market

Rents [1]

USD 45.9

per sqm per month, gross on GLA

Rent Growth y-o-y

-3.2%

Stage in Rent Cycle

Rents Stable

International brands continue to enter the market

New international retail brands were found to enter the market , while the existing ones continued to expand their presences in the quarter. Notably, Uniqlo -the Japanese global apparel retailer-opened their flagship store in Vietnam with 3,097 sqm over three floorsin ParksonDong Khoi in District 1 in 4Q19.

On the other hand, the market witnessed the withdrawal of the VinProbrand, putting a strain on the occupancy rate of the Vincomchain.

The partial mall closure and tenant relocation drive up vacancy

While Department store closures continued in the market, existing malls saw an increase in vacancy rate as tenants relocate to the new malls nearby, which had better quality, facilities and many programs to attract buyers and visitors. Therefore, the overall vacancy rate rose in 4Q19.

Meanwhile, Crescent mall phase 2, spanning 16,000 sqm (GFA), opened in District 7 this quarter. The new phase specially focused on mid-to-high end brands and recorded a good occupancy rate of up to 90%.

Rents remain stable

The majority of malls in CBD saw rents increase marginally both y-o-y and q-o-q, supported by good location. Meanwhile, rents in non-CBD edged down slightly as the submarket was filled with old malls whose leasing

ARCADIS VIETNAM CO., LTD

activities were not so strong, as a result of competition from new malls with better quality and management service. The overall effect was a decline of 3.2% y-o-y in rents.

Outlook

In 2020, some shopping malls in Non-CBD area will enter the market namely Satra Centre Mall, Socar Mall, Elite Mall and Central Premium Mall, contributing more than 280,000 sqm GFA. Besides, after renovation and brand restructuring, some existing malls are expected to improve on their occupancy rate.

As a new trend in the market, both retailers and mall developers are ireinventing themselves with focus on F&B and experiential retailers, providing better customer services and applying technology, consumer analytics to enhance their popularity and increase foot traffic.

Figure 9: Retail Total Stock
('000 sqm GLA)

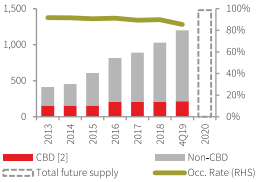
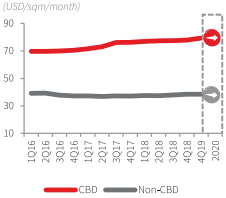


Figure 10: Retail Average Rents
(USD/sqm/month)



Note:
[1] Rent value refers to average gross rent across the city, includingservice charges but excluding VAT.
[2] CBD area refers to District 1. Non-CBD area refers to the rest of the city.
Source: JLL Research

(Cont'd)

HCMC

Apartment for Sale Market

Primary Price [1]
USD 2,889
per sqm NFA

Price Growth y-o-y
78.3%

Stage in Price Cycle
Strong Growth

Mid-end segment is the main demand driver

Sustained demand continued, yet 4Q19 sales only halved of those in 4Q18 , mainly due to limited supply caused by ongoing restricted approval procedures. For the entirety of 2019, sales totalled more than 30,000 units, albeit 35% lower than the peak year of 2017, still 5-6 times more than 2012-13 downturn period.

Mid-end projects with a launching price of USD 1,200-USD 1,700 per sqm remained the top performers, accounting for 70% of units sold in 2019 as they were situated in good locations, offered a wide range of amenities, while still had large room for price increase, attractive to both owner-occupiers and investors.

Limited new supply continues as a result of prolonged approval process

After an exceptional quarter with more than 10,000 units from the Rainbow phase of Vinhomes Grand Park project launched, the market returned to quiet mode with only 3,600 units officially launched in 4Q19, a result of the prolonged approval process. For the whole 2019, official launches[2] totalled nearly 30,000 units, which was 20% below 2018's number and 30% below the peak year of 2017.

Prices accelerate to a new high amid limited supply

In 4Q19, the average price reached a record high of nearly USD 2,900 per sqm, up 78.2% y-o-y and 39.8% q-o-q. This exceptional improvement in price

ARCADIS VIETNAM CO., LTD

was mostly driven by i) most projects with lower prices were sold out, the basket was therefore left with those with higher-than-average price; and ii) developers having projects launched in the quarter had more confidence in pricing given the tight supply. Meanwhile, the chain-linked rise by 22.9% y-o-y and 1.7% q-o-q, driven by sustained demand.

Outlook

About 30,000-35,000 units are expected to launched officially in 2020, mainly contributed by Vinhomes Grand Park project. It should be noted that the number is subject to a great deal of uncertainty given the government's tight control in granting land use rights and construction licences. Strong demand is set to carry on and will boost the price further across all sectors. However, the demand in high-end segment, especially from investors, is likely to slow down in long term as their already-high price level and low rental yield make it a less attractive investment.

Figure 11: Apartment Total Launches [2]
('000 units)

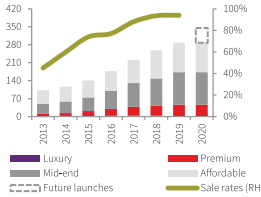
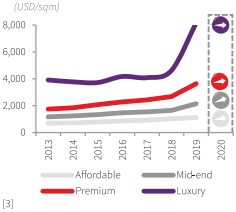


Figure 12: Average Primary Prices
(USD/sqm)



Note:
[1] Prices exclude VAT and sinking fund.
[2] Official launch figures. Projects are considered as officially launched when the Sale Purchase Agreements are signed, typically upon foundation completion.
[3] Sales rates are updated by year end only.
Source: JLL Research

(Cont'd)

HCMC

Ready-built Landed property (RBL) Market

Primary Price [1]
USD 4,629
per sqm land

Price Growth y-o-y
24.7%

Stage in Price Cycle
Strong Growth

Affordable townhouses remain favourable

Sales totalled 186 units in 4Q19, the lowest level since the market bounced back in 2014, impacted by the limited supply situation. However, demand for affordable products, especially those priced between USD 170,000–USD 250,000 per unit, remained strong, taking up more than 70% of total sales in 4Q19. This was mainly came from owner-occupiers as most available stock on the market was nearly completed and typically required large down payment, which was therefore less attractive to capital-gain investors.

Limited new supply

New launches totalled 147 units. New supply in the quarter came from newly launched projects but their scales were small, ranging from only 20-100 units per project.

Limited new supply in the RBL property market was mainly attributed to the deferred procedure in granting developers the necessary legal documents to launch projects. This was the main market theme throughout 2019 but the situation is expected to improve after 2020 Tet Holiday when many new projects are reported to launch then.

Prices keep on upward trend

The primary price in 4Q19 escalated to USD 4,629 per sqmland, up 24.7% y-o-y while the chain-linked change ranged from 5 -10% y-o-y. While townhouse projects now tend to locate far away from the city centre and therefore

ARCADIS VIETNAM CO., LTD

their prices were slightly lowered this quarter, villa type witnessed a stronger price growth given their scarcity.

The limited new developments in both apartments and RBL projects have fostered the price appreciation in existing projects with good quality and thus resulted in the escalation of RBL's primary selling price in the review quarter.

Outlook

Large-scale projects such as Vinhomes Grand Park in District 9, Zeitgeist in Nha Be District and Van Phuc City in Thu Duc District will contribute a large proportion to 2020 supply pipeline, painting a brighter picture for the segment with more than 4,000 units launches in 2020.

The continued positive marketsentiment coupled with limited supply will pave the way for further selling price increase.

Figure 13: RBL Total Launches [2]

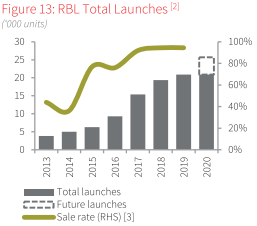
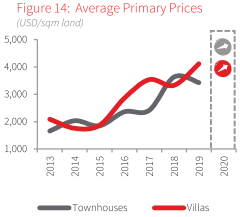


Figure 14: Average Primary Prices



Note:
[1] Prices exclude VAT and sinking fund. Price per sqm land = total unit value / size of the land plot on which the property is built.
[2] Official launch figures. Projects are considered as officially launched when the Sale Purchase Agreements are signed, typically upon infrastructure completion.
[3] Sales rates are updated by year end only.
Source: JLL Research

(Cont'd)

Southern[1]

Industrial Market

Land Price

USD 101

per sqm per lease term[3]

Price Growth y-o-y

12.2%

Stage in Price Cycle

Price Rising

Strong demand cannot translate into high net absorption

Although there was a strong demand in 4Q19, it did not translate into a high net absorption. This was due to the prevailing high price and the lack of land bank readily available for occupation in some markets. Average occupancy rate therefore inched up modestly by 100 bspfrom 2Q19 to reach 82% in 4Q19 across the top five industrial markets in SKEZ. Despite the numerous inquiries for land acquisition, however, many of those were unable to close successfully during the quarter.

Insufficient land readily available for occupation

No new IP was launched into the market in the review quarter. Besides, the market is undergoing a lack of readily available land for occupation, a result of difficulties in compensation and site clearance as recorded mostly in IPs in Dong Naiand HCMC.

Land price accelerate during the time

Given an increasing number of inquiries received, landlords have become more confident to raise their land prices. The average land price in 4Q19 achieved USD 101 per sqm per lease term, up 12.2% y-o-y. However, logistics/infrastructure development cannot accommodate with such increase in land price as development process for significant changes still take place slowly, potential investors therefore starting to seek for other alternatives.

ARCADIS VIETNAM CO., LTD

RBF -the favourite preference of SMEs - recorded an average rent ranging from USD 3.5 -5.0 per sqm per month. While the rental rate increased slightly in Binh Duong, HCMC, Long An, it remained stable in other provinces as compared to the previous updated time.

Outlook

The uncompleted land bank in existing IPs is expected to launch within 2Q&3Q20. Besides, roughly 1,890 ha of new IPs/new extensions is estimated to launch within 2020 in Southern area, mostly concentrated in Binh Duong as this province is currently running out of supply.

Manufacturing relocation trend will continue to benefit Vietnam's industrial market, although the US-China' negotiation reached the very first stage, however, it is only considered as a "ceasefire". Yet, in order to remain attractive to investors, IPs developers should consider their pricing strategies, taking into account logistics /infrastructure development, especially when the government is set to raise the new land price base early next year.

Figure 15: Total Stock and Occupancy Rate

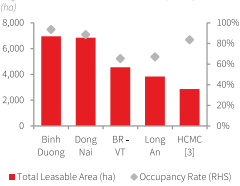
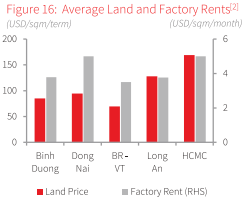


Figure 16: Average Land and Factory Rents[2]



Note:
[1] In this report, Southern industrial market refers to HCMC, Binh Duong, Dong Nai, Ba Ria –Vung Tau and Long An markets only.
[2] Land price and occupancy rate is recorded within all operating IPs, including all fully occupied IPs and IPs having available land for lease. Infrastructure maintenance, service fees and VAT are not included in the average land rent. Leasing term is the remaining years..
[4[HCMC total supply excluding Saigon High-tech Park and Quang Trung Software Park owing to their special characteristics.
Source: JLL Research

(Cont'd)

Hanoi

Office Market

Rents[1]

USD 17.8

per sqm per month, net on NLA

Rent Growth y-o-y

6.0%

Stage in Rent Cycle

Growth slowing

Demand stabilises

In 4Q19, both Grade A&B submarkets recorded a higher net absorption in comparison to 3Q19, indicating a stable demand. The occupancy rate of the market continued to increase and reached 93.0%, in which Grade A submarket achieved the rate of 94.0%. The positive net absorption of Grade A offices was mainly attributed to TNR Tower and ThaiHoldingsTower, the two latest additions to the market. In addition, Grade B buildings recorded higher net absorption than Grade A due to its abundant supply.

New Grade B buildings enter the market

While there was no new supply in Grade A submarket, Grade B continued to welcome two new buildings, Coninco Tower and Peakview Tower, which helped to raise the total supply of Hanoi office market to reach almost 1.8 million sqm. Both new buildings were located in Dong Da District, one of the main office clusters of Hanoi. In 2019, this district has also welcomed the largest amount of new supply. With high construction quality and reasonable price, the two buildings achieved impressive occupancy rate in the first quarter of opening.

Rents move upwards

In 4Q19, the average rental rate of Hanoi Grade A&B office increased moderately by 0.3% q-o-q, resulting in a considerable growth of 6% y-o-y. Positive demand helped sustain the growth throughout 2019, however, the pace started to show signs of weakening

ARCADIS VIETNAM CO., LTD

toward the year-end period. By location, during 2019, CBD area, in which Dong Da district took the lead, rose faster than the new office clusters including CauGiayand Nam TuLiemdistricts, since the majority of supply were located in central areas. In addition, the new additions in the CBD area with high quality also benefited the trend.

Outlook

The market is expected to welcome a large amount of new supply in both Grade A&B in 2020, of which Capital Place is the most notable one. Capital Place should set new standard for the office market, based on its first-class quality.

Demand is forecasted to stay steady, with relocation and expansion being the main drivers. However, with a large supply pipeline, landlords should employ flexible strategy to quickly react to the changes in the market and tenants' needs.

Figure 17: Office Total Stock

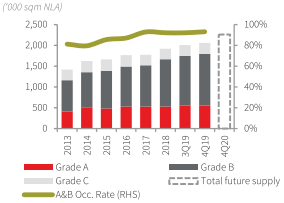
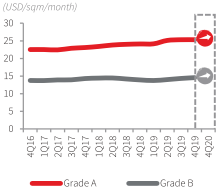


Figure 18: Office Average Rents



Note:
[1] Rent refers to average net rent of Grade A and B office markets, excluding VAT and service charges.
[2] CBD area consists of Hoan Kiem (core CBD), Dong Da, Ba Dinh and Hai Ba Trung. Non-CBD area refers to the rest of the city.
Source: JLL Research

(Cont'd)

Hanoi

Retail Market

Rents[1]

USD 29.3

per sqm per month, gross on GLA

Rent Growth y-o-y

1.6%

Stage in Rent Cycle

Growth slowing

A new shopping centre enters the market

Aeon Mall opened a second shopping centre in Hanoi (the fifth in Vietnam) in Ha Dong District with 74.000 sqm in 4Q19. With its opening, Aeon Mall Ha Dong also introduced new brands to Hanoi such as Koi Thé and Digiking. The excitement toward new brands and the new project have helped Aeon Mall Ha Dong to attract an impressive number of customers in the first few weeks.

With the addition of Aeon Mall, the total supply of retail market in Hanoi reached approximately 1.2 millions sqm in 4Q19. Of which, shopping centres dominate the supply, while department stores and prime retail spaces did not record any significant growth.

Occupancy rate improves despite the new supply

The occupancy rate inched up 51 bps and reached almost 91% in 4Q19 despite the opening of Aeon Mall Ha Dong, as this new mall was only 5% vacant, indicating an effective leasing strategy. A few vacant spaces came from some Vincom shopping centres that were going through tenant mix exercise. For example, Vincom Pham Ngoc Thach was under renovation with a substantial amount of space remained closed. The shopping centre is expected to re-open the stores in 2/2020.

ARCADIS VIETNAM CO., LTD

Rental increase continues in the quarter

The average rent of the market stayed at the same level as 3Q19, at 29.3 USD/sqm/month, an increase of 1.6% y-o-y. Although located in an outer district and relatively remoted area, Aeon Mall Ha Dong was still able to set an asking price that was approximately on par with the general market, proving the appeal of the Aeon Mall chains to consumers and tenants.

Outlook

In 2020, the market is forecasted to welcome new supply, mainly coming from two mega malls of Vingroup in Smart City and Ocean Park townships on the outskirt of the city. This is also a new trend in the market in which shopping centres are located in impressive areas outside the city centre. Those shopping centres usually provide a variety of entertainment and lifestyle activities such as gym, kid playgrounds, instead of purely for shopping. In addition, new brands are expected to enter Hanoi market in 2020, such as Uniqlo. This brand is expected to open its first store in Hanoi in Spring 2020, after the successful opening of its first store in HCMC in 12/2019.

Figure 19: Retail Total Stock

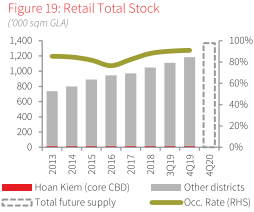
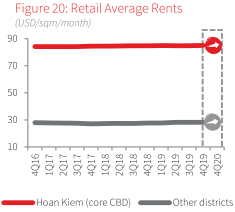


Figure 20: Retail Average Rents



Note:
[1] Average gross rent across the city, includingservice charges but excluding VAT.
[2] CBD area consists of Hoan Kiem (core CBD), Dong Da, Ba Dinh and Hai Ba Trung. Non-CBD area refers to the rest of the city.
Source: JLL Research

(Cont'd)

Hanoi

Apartment for Sale Market

Primary Price [1]
USD 1,501
per sqm NFA

Price Growth y-o-y
3.9 %

Stage in Price Cycle
Growth Slowing

Newly launched projects are well – received

In 4Q19, take-up totalled 7,429 units, still at high level though observed decrease q-o-q due to the year end holiday season. Although sales eased through the quarter, number of unsold units remained low at end-2019 amid limited supply, down 18% y-o-y.

It should be noted that buying sentiment towards newly launched projects remained upbeat in the quarter, with Vinhomes Symphony in Long Bien District and Mipec Rubik 360 in Cau Giay District able to sell over 90% and 70% of the launching units within one week, respectively. Other than that, pre-sales rate of some new projects is increasingly supported by foreign buyers as local developers had ramped up their overseas marketing efforts.

Mid-end housing remains the major source of supply

Over 7,740 units were launched in 4Q19, down by 8.2% y-o-y. In 2019, new launches totaled around 32,060 units, predominantly attributed to the mid-end apartments with 75% market share. The recently announced land base price policy to increase next year has likely prompted developers to delay new launches with the view of higher selling price of their properties in 2020.

Residential market remained the most active sector in terms of investment enquiries. Foreign development groups from across region particularly Japan, Korea and China continued to explore the development opportunities

ARCADIS VIETNAM CO., LTD

in prime locations as well as in surrounding neighborhoods.

Price growth stabilizes across sub-markets

The average price level stood at USD 1,501 per sqm, grew moderately 1.5 % q-o-q. Mid-end segment was the best performer thanks to entrance of some new projects in good location and developed by reputable developers. Notably, the quarter witnessed one luxury project return to the market after a long delay with a soft – launching price at USD 6,000 – 8,000 per sqm, an exceptional high price recorded in the city west area.

Outlook

The residential market in 2020 is expected to see an influx of luxury apartments . An estimated 1,000 luxury units from four projects are set to be launched next year, accounting for nearly one third of the total existing luxury stock.

Expected heightening prices combined with positive economic outlook will likely prompt buyers to rush to the market, thereby supporting transaction volumes.

Figure 21: Apartment Total Launches [2]
('000 units)

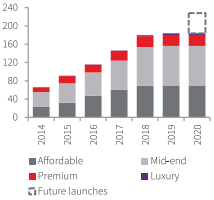
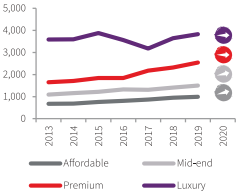


Figure 22: Average Primary Prices
(USD/sqm)



Note:
[1] Prices exclude VAT and sinking fund.
[2] Official launch figures. Projects are considered as officially launched when the Sale Purchase Agreements are signed, typically upon foundation completion.
[3] Sales rates are updated by year end only.
Source: JLL Research

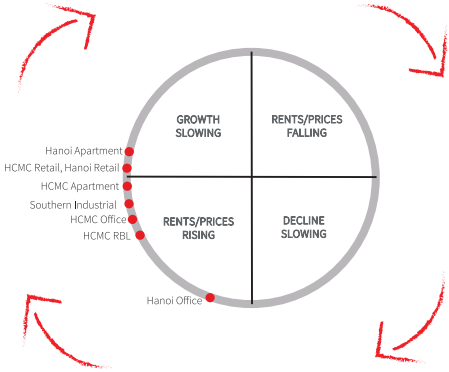
(Cont'd)

General Terminology

Chain-linkedchange
Thequarter-on-quarter change in the chain-linked basis illustrates the change in rents or prices in properties that existed in the basket during two consecutive quarters. This is different from the standard spot change series, which is a weighted average of all buildings in the market at that given moment.
The chain-linked change can be used across time to show more accurately the level of rent growth achieved in a stabilised asset that is acquired and held over that time period.

Property Clock
The clock diagram illustrates where JLL estimates the stage of each property market within its individual rent/price cycle as at the end of the review quarter. Markets can move around the clock at different speeds and directions.
The diagram is a convenient method of comparing the relative position of markets in their rent/price cycle. Their position is not necessarily representative of investment or development market prospects. Their position refers to the prevailing rent or price trend and its expected movement in the next quarter.

Figure 23: Vietnam Property Clock, 4Q19



Source: JLL Research

ARCADIS VIETNAM CO., LTD

Terminology

Office market

Current supply
The total amount of cumulative office space (in NFA terms) that has been completed at a given time.

Future supply
The total amount of office space slated for completion in the future at a given time.

Vacant space
The total amount of available office space that remains to be leased by property owner(s) at a given time. This excludes space available for sub-lease by tenants (i.e. shadowspace), space physically empty but already pre-leased or reserved, and space to be available for lease in the future.

Occupied space
Current supply less vacant space."Net absorption" refers to the change in occupied space from quarter to quarter.

Gross floor area (GFA)
The total amount of all covered areas including columns, walls, common passageways, lift lobbies and toilets.

Net floor area (NFA)
The amount of usable floor areas excluding columns, walls, common passageways, lifts, lobbies and toilets. Net lettable area or net leasable area **(NLA)** refers to the amount of NFA that is available for lease.

Net rent
The amount of market rent receivable by landlords after deducting outgoings.
Market practices: Net rents may be quoted on an NLA or a GFA basis.

Outgoings
The estimated costs set aside by landlords for building maintenance that are passed on to tenants in the form of service chargesor management fees.
Market practices: Service charges/management fees may or may not be quoted separately from net rents.

(Cont'd)

Gross rent
The total achievable rent to be borne by tenants incluing service charges/management fees.Gross rents equal net rents plus outgoings.
Market practices: Gross rents may be quoted on an NLA or a GFA basis.

Capital value
The market value or probable price of aproperty at agiven time from a valuation point of view.

Yield
The percentage return on property investment at agiven time from a valuation point of view. It is based on current market rents assuming full occupancy.

Grade A
A Grade A property meets all of the factors in a set of criteria regarding its offerings to a typical sophisticated occupier. These criteria are broadly concerned with the property's overall profile, location, amenities, management standards and technical specifications.

Grade B
A Grade B property meets some of the factors in a set of criteria regarding its offerings to a typical sophisticaed occupier. These criteria are broadly concerne with the property's over all profile, location, amenities, management standards and technical specifications.

Grade C
A Grade C property meets a set of criteria regarding its offerings to a typical non-sophisticated occupier. These criteria are broadly concerned with the property's overall profile, location, amenities, management standards and technical specifications.

ARCADIS VIETNAM CO., LTD

Terminology

Retail market

Current supply
The total amount of cumulative modern (as opposed totraditional) retail space (in GFA terms) that has been completed at agiven time. This includes department stores, shopping centres and prime retail space.

Future supply
The total amount of modern retail space slated for completion in the future at agiven time.

Vacant space
The total amount of available modern retail space that remains to be leased by property owner(s) at agiven time. This excludes space available for sub-lease by tenants (i.e.shadowspace), space physically empty but already pre-leased or reserved, and space to be available for lease in the future.

Occupied space
Current supply less vacant space. “Net absorption” refers to the change in occupied space from quarter to quarter.

Gross leasable area (GLA)
The total amount of leasable floor areas on which rents and service charges are based, which may include common areas used for foot traffic.

Gross rent
The total achievable rent to be borne by tenants including service charges/management fees butexcluding VAT. Rents are calculated by the average rents of leasable area for single tenants in department stores, shopping centres and prime retail space in HCMC.
Market practices: Gross rents in the retail market are usually quoted on NFA basis.

Shopping centre
A shopping centre is a property housing commercial multi-branded rental units/stores/establishments and commonareas. It is planned, developed and operated. The property is classified in hierarchy by function and/or size and by the are aserved.

(Cont'd)

Department store
Usually, a multi-level retail property varying in size from one selling avariety of goods to one selling a full range of different lines. A distinctive feature of a department store is that 90% of the space is under a centralised payment system and it stock a significant amount of cosmetics, fashion and household goods.

Prime retail space
Refers to retail space built as part of a mixed-use project. Defined according to the structural/physical qualities of the premises. Location is generally dispersed around the prime area of acity, considered to be retail space built to international standards.

ARCADIS VIETNAM CO., LTD

Terminology

Residential market

Commercial apartment for sale or Apartment for sale
The developer-built apartments that are available for sale widely on the market without any restriction on target buyers according to the market mechanism.
According to JLL in-house classification, the Vietnam apartment for sale market is categorised as Luxury, Premium, Mid-endand Affordable segments. The detailed classifications are provided on the following page.

Ready-built landed property for sale or Ready-built landed property
The developer-built landed properties that are available for sale widely on the market without any restriction on target buyers according to the market mechanism, where the products comprise the houses on their own grounds. The developers provide a land plot with the necessary infrastructure, and the houses built based on the master plan and the design of the developer.
As per market practices, there are three types of Ready-built landed property, namely villa, town house and shophouse. The detailed classifications are provided on the following page.

Current supply
The total amount of supply available for sale, either through the primary market or the secondary market, *regardless of construction status.*

Future supply
The total amount of supply to be launched for sale in the future.

Completed supply
The total amount of supply that has been physically completed and handed over for occupation. Also known as existing supply.

Uncompleted supply
The total amount of supply that has not been physically completed and handed over for occupation. Includes supply under construction and supply planned for construction. Also known as supply in the pipeline.

(Cont'd)

Primary market
That part of the market comprising first-hand supply available for sale from developers.

Secondary market
That part of the market comprising second-hand supply available for resale from previous buyers.

Launches (Official launches)
The estimated amount of new supply (in units) officially launched for sale during a period. Projects are only considered as officially launched when the Sale Purchase Agreements are signed, typically upon the completion of foundations for the apartment sector and the completion of internal infrastructure according to the project schedule for Ready-built landed property.
Market practices: Many developers choose to launch their projects in phases which may or may not be publicly announced.

Take-up
The estimated amount of supply (in units) sold during a period. Includes sold units from new supply in the period and supply in previous periods.
Market practices: Take-up may comprise units sold via capital contributions or sale and purchase agreements.

Total inventory
The total amount of *unsold* supply that has been launched for sale.

Primary asking price
The stock-weighted average asking price in the primary market.

Secondary asking price
The stock-weighted average asking price in the secondary market.

Non-chain-linkchanges
Q-o-Q and Y-o-Y changes include the effect of supply additions/removals.

Chain-linkchanges
Q-o-Q and Y-o-Y changes are adjusted to remove the effects of supply additions/removals.

ARCADIS VIETNAM CO., LTD

Terminology

Residential market

Luxury apartment
A *luxury* property meets *all* of the factors in a set of criteria regarding its offerings to a typical local wealthy household. These criteria are broadly concerned with the property's overall profile, location, facilities, amenities and management standards. Amajority of *luxury* properties are located in or near the CBD of the city under review.
Typical price range: > USD 3,500 per sqm, excluding VAT and sinking fund

---

Premium apartment
A *premium* property meets some of the factors in a set of criteria regarding its offerings to a typical local wealthy household. These criteria are broadly concerned with the property's overall profile, location, facilities, amenities and management standards. A majority of premium properties are located in new urban areas outside the CBD of the city under review.
Typical price range: USD 2,500 – USD 3,500 per sqm, excluding VAT and sinking fund

---

Mid-endapartment
A *mid-end* property meets *all* of the factors in a set of criteria regarding its offerings to a typical local middle-class household. These criteria are broadly concerned with the property's overall profile, location, facilities, amenities and management standards. Amajority of *mid-end* properties are located within the inner districts of the city under review.
Typical price range: USD 1,200 – USD 2,500 per sqm, excluding VAT and sinking fund

---

Affordable apartment
An affordable property meets some of the factors in a set of criteria regarding its offerings to a typical local middle-class household. These criteria are broadly concerned with the property's overall profile, location, facilities, amenities and management standards. A majority of affordable properties are located in the outer districts of the city under review.
Typical price range: < USD1,200per sqm, excluding VAT and sinking fund

---

Note: The price ranges provided above should not be understood as the sole and utmost criterion based

(Cont'd)

on which projects are assigned grades.

High-endapartment: including Luxury and Premium segments

Low-endapartment: including Mid-end and Affordable segments

Villa

A large and luxurious country house on its own grounds, generally having a maximum of three floors. The plot ratio is usuallyless than 70%, with a focus on a green area.

- Most popular villas are located on 200-300 sqm land plots. Some luxury villa plot areas may reach 500-1,000 sqm.
- Thepopular construction area/Gross Floor Area (GFA) is about 250-350 sqm while the land plot is large. For that reason, all things equal, the selling price per squaremetreof land is lower than that of town houses.
- Typically, there are two types of villa as shown below:
  - Detached villa: a single villa built on private land
  - Semi-detached villa: a single villa built as one of a pair that shares one common wall; often, each house layout is a mirror image of the other

Town house

A tall, narrow terraced house, generally having three or more floors. The plot ratio is usually more than 70% and is focused on the construction floor area.

- Most popular town houses have plot areas of 60-100 sqm
- The popular construction area/Gross Floor Area (GFA) is about 150-250 sqm

Shophouse

A town house opening on to the pavement for commercial purposes.

- The construction and design are similar to those of town houses. The popular construction area/Gross Floor Area (GFA) of town houses is about 250-400 sqm, with the upper 3-4 floors for living purposes and the ground floor (or middle floor, if applicable) for commercial purposes. It is larger than a town house.
- In one project, all things equal, the selling price per squaremetreof land is higher compared to town houses because usually, in one project, shophouses have better locations and wider street frontage compared to other landed property units, for commercial purposes.

ARCADIS VIETNAM CO., LTD

Note: The product classification provided above should not be understood as the sole and utmost criterion based on which projects are assigned types.

(Cont'd)

Terminology

Industrial market

OperatingIPsorExistingIPs
Industrial parks and processing zones thatare officially offered for leaseat a given time.

Total leasable land area
The total land area for lease according tothe master plan of the whole IP regardless its development status. Total leasable land of a IP at a given time can comprise three types as below:

- Infra-developed land:The leasable land area which have been cleared and implemented internal infrastructures (incl. internalroad, electricity, etc.) by developer and ready for tenants to occupy.
- Non-infrastructure land: Theleasableland area which have been cleared but not yet have internal infrastructures developed. Non-infrastructure land can still be offered for lease yet tenants may have to wait for a while (typically 3-6 months) to be able to occupy.
- Uncompensated land: The leasable land area which have not been compensated at a given time.

Marke tpractices: Developer usually develop an IP in phases depending on the expected demand on the market, not thetotal leasable land area at once.

Total leasable warehouse/ready-built factory area
The total area of leasable warehouse/ready-built factory at a given time.

Vacant space
The total amount of available industrial land area that remains to be leased to tenants at a given time. This excludes space available for sub-lease by tenants (i.e. shadow space), space physically empty but already pre-leased or reserved, and space to be available for lease in the future.

Occupied space
Total leasable area less vacant space. “Net absorption” refers to the change in occupied space from period to period.

Net rent – land area
The amount of market rent applied for leasable land area that is receivable by landlords after deducting outgoings.

ARCADIS VIETNAM CO., LTD

Market practices: Net land rent is normally quoted per squaremetreper lease term.

Lease term
Lease term is the remaining years of the industrial parkor the property. In Vietnam, the maximum lease term can be up to 50 years.

Net rent - warehouse/ready-builtfactory
The amount of market rent applied for leasable warehouse/ready-built factory area that is receivable by landlords after deducting outgoings.
Market practices: Net warehouse rent may be quoted per squaremetreper month.

Future supply
The total area of future industrial parks and processing zones according to the master plans of provincial authorities.

North Key Economic Zone (NKEZ)
North Key Economic Zone is made up of seven cities/provinces, namely Hanoi, Hai Phong, Bac Ninh, Hai Duong, Hung Yen, Vinh Phuc and Quang Ninh.
In this Property Market Brief, Northern Industrial market refers to Hanoi, Hai Phong, Bac Ninh, Hung Yen and Hai Duong markets only.

Central Key Economic Zone (CKEZ)
Central Key Economic Zone comprises five provinces: Thua Thien Hue, Danang, Quang Nam, Quang Ngai and Binh Dinh provinces.

South Key Economic Zone (SKEZ)
South Key Economic Zone is made up of eight cities/provinces, namely HCMC, Binh Duong, Dong Nai, Long An, Ba Ria-Vung Tau, Binh Phuoc, Tay Ninh and Tien Giang.
In this Property Market Brief, Southern Industrial market refers to HCMC, Binh Duong, Dong Nai, Long An and Ba Ria-Vung Tau markets only.

COPYRIGHT © JONES LANG LASALLE IP, INC. 2019. All Rights Reserved

VIETNAM BUSINESS ENVIRONMENT 4

Language

Accounting System

Banks

Government Administration

Taxation

Insurance

Workforce

LANGUAGE

Vietnamese was declared the official language of Vietnam in 1945, as much as 70% of the vocabulary is borrowed from Chinese and the intonation is similar to Cantonese. It is spoken by approximately 90% of the Vietnamese population and ranked as the world's 15th most spoken language. English, however, is widely used in the business community.

ACCOUNTING SYSTEM

Accounting records are required to be maintained in VND. Foreign-invested business entities can select a foreign currency to be used for their accounting records and financial statements provided that they meet all requirements specified in Circular 244/2009/TT-BTC issued by the Ministry of Finance ("MoF"). Accounting records are required in Vietnamese language, but this can be combined with a commonly -used foreign language. At the end of a financial year, the entity must perform a physical count of its fixed assets, cash and inventory.

Companies operating in Vietnam are required to comply with the Vietnam Accounting System ("VAS"). It is possible to diverge from the standard VAS, but this is subject to specific approval from the MoF. The tax authorities treat VAS non compliance as a basis for tax reassessment and imposition of penalties, including withdrawal of CIT incentives, disallowance of expense deductions for CIT purposes and disallowance of input VAT credits/refunds.

The annual financial statements of all foreign-invested business entities must be audited by an independent auditing company operating in Vietnam. Audited annual financial statements must be completed within 90 days from the end of the financial year. These financial statements should be filed with the applicable licensing body, MoF, local tax authority, Department of Statistics, and other local authorities if required by law.

ARCADIS VIETNAM CO., LTD

BANKS

Banking industry of Vietnam is considered as young in terms of integration to worldwide, until in 1990, it was only restructured to separate the State Bank of Vietnam from commercial banks. The State Bank of Vietnam acts as a central bank and a supervisory institution and is also a main share holder in state-owned commercial banks (SOCB). Later, more forms of commercial banks are established especially after 2006 when Vietnam joined WTO. With less than 5% of the population regularly using banking service, and 10%-20% holding bank accounts, it has provided good opportunities for growth, however, competition in banking sector is considered as very harsh. Besides Vietcombank, Vietinbank, Agriculture Bank, BIDV as top of SOCB, top joint stock banks can be named as ACB, Sacombank, Techcombank, Indovina Bank as top of joint venture bank. Nowadays, in the banking sector, we can see a variety range of plenty commercial banks including 4 biggest SOCB, around 40 joint stock banks, and 40 foreign invested banks or branches of foreign banks, representative offices, 4 joint venture banks in playground. Although all the big names of foreign banks such as Citibank, HSBC, Standard Chartered Bank, ANZ are all presence in Vietnam, the banking system is still characterized by the strong dominance of market share by SOCB.

Official currency in Vietnam is VND, however, laws allow local and foreign entities and individuals to hold foreign currency at bank accounts as deposit/savings and funds received/transferred from foreign countries in freely. Nevertheless, domestic payment, usage or cross border outward transfer of foreign currency is prohibited or limited to certain kinds of transactions and it requires supporting documents.

(Cont'd)

BANKS

Banks can provide customers with all kinds of services, however, it is more characterized by commercial banking market rather than having a clear division on investment banking and commercial banking. Commercial banking services are such as deposits, loans, trade finance, bank guarantees Deposit can be made in both VND or foreign currencies and deposit is including current account, saving accounts and fixed deposit from 1 month to 24 months. Interest rate for VND is always higher than foreign currencies (currently average VND interest rate is 5%-7%p.a. compared to USD interest rate at 0.75%p.a). Loan services comprises of short term loan (under 1 year), medium term loan (from 1 to 5 years) and long term loan (over 5 years). Loans in foreign currencies (popular USD) are restricted to companies who have the proceeds in foreign currency. Getting loans in USD is also always cheaper than loans in VND especially for those who having source of fund from their export. Banks always offer a credit line to their customers to finance all their need in short term working capital or long time investment in machineries or factories. Credit line may be used for loan disbursement, trade finance or bank guarantee service. Trade finance can be listed as L/C service (sight or usance L/C), bills for collection D/P or D/A, L/C negotiation, shipping guarantee, factoring. The most popular trade finance service in Vietnam is L/C, D/P and D/A, while factoring service is rarely used. Bank guarantee services are comprised of many types, some commonly used in the economy are such as bid bond, performance bond, warranty guarantee, payment guarantee or advance payment guarantee… Fee for issuance of bank guarantee is 2% p.a. of the guarantee value plus a small amount charge on documentation. Customers can request banks to issue for them a bank guarantee by deposit fund to bank or from a credit line offered by bank.

ARCADIS VIETNAM CO., LTD

GOVERNMENT ADMINISTRATION

The National Assembly is the highest representative organ of the people and the highest organ of the state power of the Socialist Republic of Vietnam. Members are elected for a five year tenure through nation wide elections. Sittings of the National Assembly are held twice a year and have full constitutional and legislative powers. The standing committee of the National Assembly is responsible for enforcement of laws. Its functions are carried out through the Ministries, State Committees and General Departments by promulgating and explaining the Constitution, law and decree-laws.

The Country's President is the head of state, elected by the National Assembly from among its members to represent the Socialist Republic of Vietnam in internal and foreign affairs. The Vice President is proposed by the President and elected by the National Assembly from the representatives. The National Defense and Security Council has the duty to mobilize all forces and potentials of the country to defend the Homeland.

The Government is the executive organ of the National Assembly and shall report to the National Assembly, the National Assembly standing committees and the Country's President. The Goverment consists of the Prime Minister, Deputy Prime Minister, Ministers and Heads at ministerial level. The Prime Minister is presented by the President and elected by the National Assembly and has the term of 5 years. The Deputy Prime Ministers are the assistants of the Prime Minister and may be delegated by the Prime Minister during his absence. The Ministers and Heads at ministerial levels take on the State management of allotted branches or fields.

The People's Supreme Court is the highest judicial organ of the Socialist Repulic of Vietnam. The court consists of the Tribunal President, Vice Tribunal President, judges, the juror and the secretary of the court. Moreover, the court is composed of the judge Council, judge Committee, the Military court and criminal court, civilian court, the court of appeal and the assistant apparatus.

TAXATION

TAXATION IN THE REAL ESTATE INDUSTRY

I. Corporate Income Tax ("CIT")

Organizations established in Vietnam deriving income from transferring or leasing property are subject to Corporate Income Tax ("CIT") at the standard tax rate of 20% from 1 January 2016.

Generally, real estate developers are not given preferential tax rates, tax holidays or other tax reductions except for special cases such as projects located in poor and remote areas or social housing projects (i.e. construction of residential houses for the poor or workers).

In principle, the time of formal revenue recognition should be when the properties are handed over to the buyer.

However, in the case where an advance payment is received for properties under development, real estate developers are required to pay provisional CIT at 20% on provisional income in the case where corresponding expenses can be determined and matched with the revenue; where the expenses cannot be determined, the provisional CIT is at 1% on the advance payments which are not recorded as revenue for CIT purposes in the tax year.

Where the enterprise sub-leases out a property, if the lessee pays a lump sum for a number of years and certain conditions are met then the lessor is able to recognise revenue by one of two methods.

ARCADIS VIETNAM CO., LTD

(i) allocation on a year-by-year basis or
(ii) lump-sum basis.

Losses incurred in a given year can be carried forward for 5 years. With effect from 1 January 2014, losses from real estate transfer activities can be offset against the taxable income of other business activities of the relevant tax year.

However, the gain from transfer of real estate is still required to be recorded and taxed separately without offsetting losses derived from other activities.

Land use rights ("LURs") with indefinite terms may not be depreciated for tax purposes. However, LURs with a definite term used for production or business activities can be amortized over the prescribed land use duration.

Any gains from the revaluation of a LUR for capital contribution purposes shall be determined as follows:

(i) For capital contribution for residential housing for sale: the whole gain is recognized as other income in the tax period the capital contribution is made.
(ii) For capital contribution for production or business activities, if the company receiving LUR is allowed to depreciate such LUR, the whole gain is recognized as other income in the tax period the capital contribution is made or the gains may be allocated to other income over a period up to ten years.

II. Value Added Tax ("VAT")

The transfer of a LUR without any related infrastructure is not subject to VAT. Conversely, the transfer of LUR with an infrastructure and building component is generally subject to VAT at 10%. However, the land value can be excluded from the revenue subject to VAT. The determination of deductible land price for VAT purpose varies depending on how the land was acquired for the project. It is proposed in the draft amended tax law that taxable price for VAT purposes with regard to real estate transfer is calculated as the

selling price of the real estate exclusive of VAT minus (-) the land use fee or lump-sum land rental fee paid to the State Budget.

Input VAT incurred for construction costs can generally be claimed as an input VAT credit. Output VAT will also be applied to the payment collection on schedule and the deductible land value for VAT purpose is also allocated accordingly.

The VAT rate of 5% is applicable to contracts for selling/leasing/financial leasing for social housing which satisfy the stipulated conditions.

III. Stamp Duty

Stamp duty is payable on the transfer of title of real estate property by the buyer. Some specific transfers may be exempted from the stamp duty. Stamp duty is imposed at 0.5% on the value of the property up to VND 500 million (approx. USD 22,000) per asset per transaction.

IV. Foreign Contractor Tax ("FCT")

Foreign companies, with or without a permanent establishment ("PE") in Vietnam, carrying out business activities in Vietnam and/or deriving income in Vietnam under a contract or agreement signed with a Vietnamese organization or individual, are referred to as a foreign contractor ("FC") and subject to Vietnamese FCT.

VAT and CIT are the two components of the FCT.

Currently there are three tax filing and payment options:

(i) full registration method with maintenance of books and accounts in Vietnam under Vietnam Accounting System;
(ii) deemed withholding method; and
(iii) the hybrid method, which consists of paying VAT on the conventional deduction method like a Vietnamese company but paying CIT on a deemed withholding method basis.

ARCADIS VIETNAM CO., LTD

The Deemed Withholding method is the most common one in practice by which the contracting Vietnamese party is responsible for registering, withholding, filing and paying the FCT due on each payment made to the FC. The applicable rates vary depending on the nature of goods and services provided. For projects having a substantial portion of local purchases, the Hybrid method is often applied so that the FCs can claim credit on the input VAT incurred on local purchases but can still pay the CIT on a deemed basis. Note that it is being proposed under the draft amended tax law that conventional deduction method would be the compulsory VAT declaration method for foreign contractors.

V. Personal Income Tax ("PIT")

Generally, real estate (other than a property used as a sole residential property and some other specific exempt transactions) transferred by an individual is subject to PIT. Property transactions subject to PIT include the transfer of "the right to buy" and the transfer of "the right to lease".

PIT exemption for transfer of sole residential property is not applicable for:

(i) transfer within 182 days from the date of having the right of ownership/LUR; and
(ii) transfer of house/apartment/construction work yet to be completed.

Typically, a Vietnam tax resident has to pay PIT for the property transactions at 2% on the transfer price.

No PIT declaration and payment are required in the case where individuals/households are leasing a property for an annual rental of VND100 million or less (approx. USD4,500 per year).

VI. Non-agricultural land-use tax

Non-agricultural land-use tax ("NALUT") is generally applicable to the following types of land: non-agricultural land used for residential, production or business purposes.

The calculation of the tax liability is generally based on the land area, price of land (normally set by the provincial-level People Committee and remains unchanged within 5 years from 1 January 2017) and tax rate. For residential land holding a multi-floor building or non-agricultural land holding a production or business establishment, the applicable tax rate is 0.03%.

Organizations granted with LUR and existing land users are required to submit NALUT declaration on a yearly basis at the tax office of the relevant district no later than 31 March of the following year. However, no further declaration in subsequent years is required if there is no change in tax payer or tax liability. If there is any change, the tax payer is required to submit an amended declaration within 30 days following the date on which the change takes effect.

The tax payer may opt to pay the NALUT on one-off basis a year no later than 31 May each year or twice a year no later than 31 May and 31 October each year. If the tax payer requests to pay the NALUT on one-off basis for multiple years up to 5-year period, the payment of tax is not later than 31 December of the year in which the request is made.

NALUT exemption and reduction can be granted for certain types of land including land related to investment projects in the sectors eligible for special investment incentives, investment projects in geographical areas with qualifying socio-economic difficulties and other specific cases.

(Reproduced by kind permission of KPMG)

ARCADIS VIETNAM CO., LTD

VIETNAM INSURANCE MARKET OVERVIEW

(Cont'd)

30 Non-life insurers

Foreign-owned (9)

- AIG
- Cathay
- Chubb
- Fubon
- Groupama
- Liberty
- MSIG
- Phu Hung (PAC)
- QBE

Joint-venture (3)

- Bao Viet Tokio Marine
- Samsung Vina
- UIC

Domestic (17)

- AAA
- ABIC
- Bao Long
- Bao Minh
- Bao Viet
- BIC
- GIC
- Hung Vuong (HVI)
- MIC
- PJICO
- PTI
- PVI
- Sai Gon - Hanoi Insurance (BSH)
- VASS
- VietinBank Insurance (VBI)
- VNI
- Xuan Thanh (XTI)

1 branch of International Non-life insurer

- Branch of Seoul Guarantee Insurance (SGI) in Hanoi

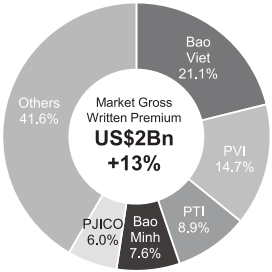
AON Empower Results®

ARCADIS Design & Consultancy for natural and built assets

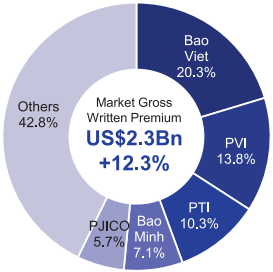
NON-INSURANCE MARKET SHARE PER INSURERS

ARCADIS VIETNAM CO., LTD

Insurance Market share per Premium 2018 FY



Insurance Market share per Premium 2019FY



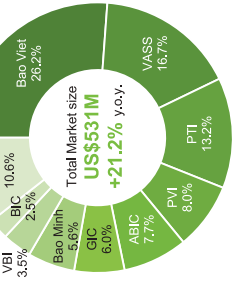
Market grew steadily at 10%+ year-on-year.
Top 5 local insurers (all directly or indirectly states-owned) represent about 57% of total Market GWP

Source: **Ministry of Finance** (MoF) – December 2019 & January 2020

AON Empower Results®

H&B INSURANCE MARKET UPDATE 2018 – 2019Q3

(including States Universal Health Insurance)



Health Insurance Market bounced back in Q3 2019, reaching 20%+ growth, driven by 35.4% growth of Personal Accident Premium.

Source: **Insurance Association of Vietnam** (IAV) – January, May 2019 and January 2020

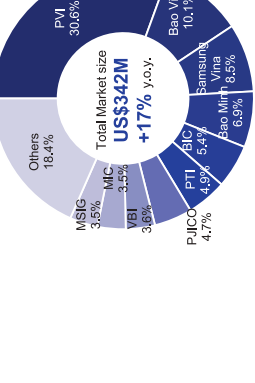
AON Empower Results®

(Cont'd)

PROPERTY & CASUALTY INSURANCE MARKET UPDATE 2018 – 2019Q3

(including Fire & Explosion Insurance)

Insurance Market share per Premium First 9 months of 2018



Insurance Market share per Premium 2018 FY

Insurance Market share per Premium First 9 months of 2019

Market grew steadily at ~15%, Claim ratio appears to be milder in the first 3 quarters of 2019.
Fire & Explosion tariff fixed by government for properties of under US$43M

Source: **Insurance Association of Vietnam** (IAV) – January, May 2019 and January 2020

AON Empower Results®

ARCADIS VIETNAM CO., LTD

VIETNAM INSURANCE MARKET OVERVIEW - LIFE

(Cont'd)

18 Life insurers

Domestic (1)

- Bao Viet Life

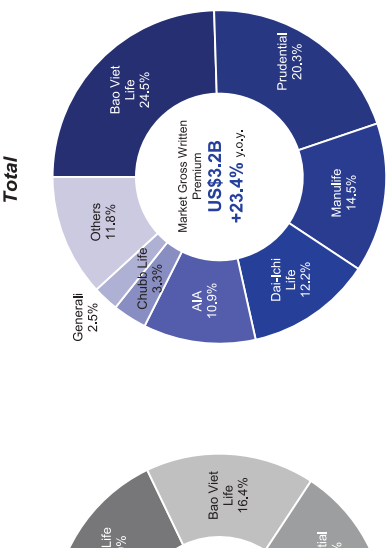
Joint-venture (2)

- Vietcombank Cardiff Life (VCLI)
- BIDV MetLife

Foreign-owned (15)

- Aviva
- AIA
- Cathay Life
- Chubb Life
- Dai-Ichi Life
- Fubon Life
- FWD
- Generali
- Hanwha Life
- Manulife
- MB Ageas
- Prevoir
- Prudential
- Phu Hung Life
- Sun Life

LIFE INSURANCE MARKET SHARE PER INSURERS 2019 FIRST 9 MONTHS



Source: **Ministry of Finance** (MoF) – December 2019

ARCADIS VIETNAM CO., LTD

COMPULSORY INSURANCE IN VIETNAM

▪ Fire and Explosion

Decree of Government No. 23/2018/ND-CP of April 15th, 2018 providing for the compulsory fire and explosion insurance regime and Decree No. 167/2013/ND-CP of November 12, 2013, providing regulations on Sanction of Administrative violation in Social Security, Order and Safety, Prevention and Fighting of Social Evils, Fire and Domestic Violence

▪ Civil Liability of Motor Vehicle Owners

Decree No. 103/2008/ND-CP of September 16, 2008, on compulsory insurance for civil liability of motor vehicle owners and Circular No. 22/2016/TT-BTC coming into effect on April 01st 2016, on rules, terms, table of premium rates and levels of liability of compulsory insurance for civil liability of motor vehicle owners.

▪ Construction Insurance

Law No. 50/2014/QH13 of June 18, 2014 on Construction Insurance; Decree No. 21/2013/N-CP of Oct 10, 2013, on sanctioning of administrative violations in construction activities; real estate business; exploitation, production and trading of construction materials; management of technical infrastructure; and management of development of houses and offices; and Regulation on Investment and Construction Management; Decree 119/2015/ND-CP with effect from April 10th 2016 guiding on compulsory insurance for construction investment activities and Circular 329/2016 / TT-BTC guiding a number of articles of Decree 119/2015 / ND-CP.

▪ Tourism Insurance

Law No. 44/2005/QH11 of June 14, 2005, on Tourism

▪ Aviation Transportation Insurance

Law No.66/2006/QH11 of June 29, 2006 Vietnam civil aviation

AON Empower Results®

COMPULSORY INSURANCE IN VIETNAM

▪ Inland Waterway Insurance

- Law No.23/2004/QH11 of June 15, 2006 on Inland waterway navigation and Decree 125/2005/NCP of October 7, 2005 issued by the Government regulating on civil liability insurance of the people dealing in the transportation on inland waterway routes

▪ Professional Liability Insurance for

- Insurance Broking Enterprises - Law No. 23/2004/QH11 of June 15, 2004 on Insurance Business
- Lawyers - Law No. 23/2004/QH11 of June 15, 2004 on Insurance Business and Law No. 65/2006/QH11 of June 29, 2006 on Lawyers.
- Auditors - Decree No. 105-2004-ND-CP of March 30, 2004, on independent audit
- Price Assessment Enterprises - Decree No. 105-2004-ND-CP of March 30, 2004, on independent audit.

▪ Professional Indemnity and General Liability Insurance and Environment Pollution Indemnity Insurance for Organizations and Individuals conducting radiation work

- Decree No. 13/2012/ND-CP issued by MOF dated of February 7, 2012 on compulsory professional insurance, civil liability insurance and environmental damage compensation liability insurance applicable to organizations and individuals performing radiation jobs.

▪ Environment Liability Insurance

- Decree No. 40/2019/ND-CP issued by the Government, effective starting July 01st 2019, regulates Compulsory Environmental Liability Insurance or Reserve Fund to compensate damages caused to the environment applied for some business fields such as: Oil and gas; vessels transporting petroleum, oil products & other dangerous goods; Manufacturing & trading chemicals and petroleum; Production of basic chemicals; Manufacture of chemical fertilizers; Production of plant protection drugs; Production of batteries; Oil refinery; Storage, transportation and treatment of hazardous waste.

SPECIAL NOTE

▪ The Ministry of Finance has issued Circular 50/2017/TT-BTC replacing Circular 124/2012/TT-BTC, Circular 125/2012/TT-BTC and Circular 194/2014/TT-BTC. This new Circular will come into effect from July 01st 2017.

▪ This new Circular, provides further details on premium payment warranty periods as set out below:

- Insurance premiums must be paid to insurers within the premium payment warranty period. The Circular states that the premium payment warranty period cannot exceed 30 days from the inception date of the insurance policy (including any extension period).

- If the insurance period is less than 30 days, the premium payment warranty period cannot exceed the insurance period. The premium must still be paid within the premium payment warranty period.

- If the premium is not fully paid within the premium payment warranty period, then, the insurance contract will be automatically terminated at the end of the premium payment warranty period.

- Where the premium is payable in multiple installments, these rules will apply to the first installment only (i.e. the first installment must be paid within the premium payment warranty period which cannot exceed 30 days from the inception date of the insurance policy).

- For open cargo policies and open travel policies, the premium must be paid not later than the 25th day of the next month (this rule remains unchanged from prior regulations).

- Please also note that for Compulsory Motor insurance, the premium should be paid before inception date of the policy.

(Reproduced by kind permission of Aon)

AON Empower Results®

WORKFORCE

The estimated population of Vietnam in 2020 will be circa 98,1 million (as danso.org).

The Government has recently issued the Decree No. 90/2019/ND-CP elaborating on stimulating region-based minimum wages applied to employees working under labor contracts. According to the decree, new region-based minimum wages which will be effective on 1st Jan 2020 are listed as below:

-For enterprises located in region I:
VND 4,420,000/month
- For enterprises located in region II:
VND 3,920,000/month
- For enterprises located in region III:
VND 3,430,000/month
- For enterprises located in region IV:
VND 3,070,000/month

Besides, the Decree No. 143/2018/ND-CP was issued elaborating on the Law on Social Security and the Law on Occupational Safety and Hygiene regarding the compulsory SI program in which foreign employees who are foreign nationals are required to participate whilst working in Vietnam.

The Decree has provided detailed instructions for the following specific matters:

- Regarding subjects of the compulsory SI program, foreign nationals working in Vietnam are required to participate in this program when they obtain the work permit, the practicing certificate, the practicing license issued in Vietnam, the indefinite-term employment contract or the employment contract valid for at least 1 year with employers in Vietnam.

- The compulsory SI program in which employees are required to participate is composed of sickness, maternity and paternity, occupational accident, occupational disease, retirement and death insurance programs.

ARCADIS VIETNAM CO., LTD

- Regarding the contribution rates:

* From January 1, 2022, a foreign employee must make a monthly contribution accounting for 8% of his/her monthly salary into the retirement and death benefit fund.

* An employer must make monthly contributions which are the percentages of the payroll for the employee's SI contributions

+ 3% paid into the sickness, maternity and paternity insurance fund;

+ 0.5% paid into the occupational accident – occupational disease insurance fund;

+ 14% paid into the retirement and death insurance fund from January 1, 2022

OTHER INFORMATION 5

Vietnam Map

Domestic Routes

Vietnam Key Data

Some Interesting Facts

Relevant Websites

Public Holidays

Prime Rates

Financial Formulae

IDD Codes and Time Differences

Conversion Factors

Arcadis Asia Leadership Team

Arcadis Asia Sectors

Arcadis Asia Services

Directory of offices

Acknowledgement

VIETNAM MAP

ARCADIS VIETNAM CO., LTD

DOMESTIC ROUTES

Route	Distance (km)	Duration
From Hanoi to:		
Buon Ma Thuot (Dak Lak)	960	01h40'
Cam Ranh (Khanh Hoa)	1039	01h45'
Can Tho	1221	02h10'
Chu Lai (Quang Nam)	770	01h55
Da Lat (Lam Dong)	1065	01h50'
Da Nang	606	01h15'
Dien Bien Phu (Dien Bien)	301	01h05'
Dong Hoi (Quang Binh)	399	01h25'
Ho Chi Minh City	1138	02h05'
Hue	549	01h10'
Phu Quoc (Kien Giang)	1575	02h10'
Pleiku (Gia Lai)	814	02h20'
Quy Nhon (Binh Dinh)	882	01h35'
Tuy Hoa (Phu Yen)	956	02h35'
Vinh (Nghe An)	254	01h00
From Ho Chi Minh City to:		
Buon Ma Thuot (Dak Lak)	260	01h00'
Ca Mau	248	01h00'
Cam Ranh (Khanh Hoa)	318	01h00'
Chu Lai (Quang Nam)	557	01h15
Con Dao (Ba Ria - Vung Tau)	248	01h00'
Da Lat (Lam Dong)	214	00h50'
Danang	603	01h15
Dong Hoi (Quang Binh)	745	01h35'
Hai Phong	1111	02h00'
Hanoi	1138	02h05'
Hue	630	01h20'
Phu Quoc (Kien Giang)	300	01h05'
Pleiku (Gia Lai)	384	01h20'
Quy Nhon (Binh Dinh)	431	01h10'
Rach Gia (Kien Giang)	194	00h55'
Tuy Hoa (Phu Yen)	381	01h00'
Vinh (Nghe An)	883	01h45'
From Da Nang to:		
Buon Ma Thuot (Dak Lak)	374	01h15'
Cam Ranh (Khanh Hoa)	436	01h05'
Da Lat (Lam Dong)	480	01h25'
Hai Phong	709	01h15'
Hanoi	606	01h15'
Ho Chi Minh City	603	01h15'
Pleiku (Gia Lai)	227	00h55'
Vinh (Nghe An)	452	01h15'

VIETNAM KEY DATA

Government

Country Name	: The Socialist Republic of Vietnam
Head of State	: President
Government Type	: Socialist Republic
Head of Government	: Prime Minister
Capital City	: Hanoi
Administrative Divisions	: 58 provinces and 5 municipalities
Independence	: 2nd September 1945
Legal System	: Based on Constitution of Vietnam
Official Language	: Vietnamese
National Language	: Vietnamese

Geography

Geographic Coordinates	: 16 10 N, 107 50 E
Location	: South East Asia
Border Countries	: Cambodia 1,158 km, China 1,297 km, Laos 2,161 km
Total Area	: 331,210 sq km
Land Area	: 310,070 sq km
Water	: 21,140 sq km
Land use	: agricultural land: 34.8% (2011 est.) arable land: 20.6% (2011 est.) / permanent crops: 12.1% (2011 est.) /
	: permanent pasture: 2.1% (2011 est.)
	: forest: 45% (2011 est.)
	: other: 20.2% (2011 est.)
Irrigated Land	: 46,000 sq km (2012)
Coastline	: 3,444 km (excludes islands)
Land boundaries	: 4,616 km
Natural Resources	: phosphates, coal, manganese, rare earth elements, bauxite, chromate, offshore oil and gas deposits, timber, hydropower
Climate type	: tropical in south; monsoonal in north with hot, rainy season (May to September) and warm, dry season (October to March)
Natural hazards	: occasional typhoons (May to January) with extensive flooding, especially in the Mekong River delta

ARCADIS VIETNAM CO., LTD

People

Total Population	: 96.48 million (2019 est.)
Age structure	: Urban: 34.7% Rural: 65.3% Male: 49.8% Female: 50.2%
Population Growth Rate	: 1.15% (est. 2019)
Median Age	: total: 32.5 (est. 2019)
Life Expectancy	: average age: 73.6 years old male: 71 years old female: 76.3 years old
Urban Population	
Hanoi	: 8.1 million (est. 2019)
Ho Chi Minh City	: 9 million (est. 2019)
Ethnic Groups	: 54 Ethnic Groups Kinh (Viet) 85.3%, other 14.7% (2019)
Languages	: Vietnamese (official), English (increasingly favored as a second language), some French, Chinese, and Khmer; mountain area languages (Mon-Khmer and Malayo-Polynesian)
Literacy (definition: age 15 and over can read and write)	: total population: 91.7% (2019 est.) male: 90.8% (2019 est.) female:92.5% (2019 est.)
Population below poverty line	: 8% (2017 est.)
Labor Force	: 55 million (est. 2019)
Labor Force by occupation	: Agriculture: 34.7% (est. 2019) Industry: 29.4% (est. 2019) Services: 35.9% (est. 2019)
Unemployment Rate	: 1.98% (est. 2019)

Economy

Monetary Unit	: Vietnamese Dong
Currency Code	: VND
Exchange rate to	dong (VND) per
USD	: 23,284 (est. 2019)
Euro	: 26,611 (est. 2019)
British Pound	: 29,800 (est. 2019)
Average Consumer Price Index (CPI)	: 2.79% (est. 2019)

(Cont'd)

VIETNAM KEY DATA

Fiscal Year	: 1 January to 31 December
GDP (Official Exchange Rate)	: US$ 266,5 billion (est. 2019)
GDP Growth Rate	: 7.02% (est. 2019)
GDP composition by sectors	: Agriculture: 4,6% (est. 2019) Industry: 50,4% (est. 2019) Services: 45% (est. 2019)

Trade

Total Exports	: US$ 263,45 billion (est. 2019)
Major Exports Commodities	: 1- Telephones, mobile phones and parts thereof 2- Textiles and garments 3- Computers, electrical products, spare-parts and components thereof 4- Foot-wear 5- Fishery products 6- Crude oil 7- Machine, equipment, tools and instruments 8- Wood and wooden products 9- Other means of transportation, parts and accessories thereof 10- Rice
Export Partners	: EU 18.1%, US 27.8%, Asean 51.2%, Japan 7.7%, Korea 7.6%, China -1.2%
Total Imports (USD billion)	: US$ 253,51 billion (est. 2019)
Major Imports Commodities	: 1- Machine, equipment, tools and instruments 2- Computers, electrical products, spare-parts and components thereof 3- Textile, leather and foot-wears materials and auxiliaries group 4- Telephones, mobile phones and parts thereof 5- Petroleum products

ARCADIS VIETNAM CO., LTD

	6- Iron and steel 7- Plastics 8- Animal fodders and animal fodders materials 9- Chemical 10- Other means of transportation, parts and auxiliaries thereof
Import Partners	: China 29.7%, Asean 80.2%, Korea 18.7%, EU 7.3%, Japan 7.7%, US 5.7%
International Airports	: Tan Son Nhat International Airport (Ho Chi Minh City), Da Nang International Airport (Da Nang), Hanoi Noi Bai International Airport (Hanoi), Nha Trang Cam Ranh International Airport (Nha Trang), Can Tho International Airport (Can Tho)
Major Seaports	: Cam Pha Port (Quang Ninh), Hai Phong Port (Hai Phong), Nghi Son Port (Thanh Hoa), Cua Lo Port (Nghe An), Vung Ang Port (Ha Tinh), Chan May Port (Thua Thien Hue), Da Nang Port (Da Nang), Dung Quoc Port (Quang Ngai), Quy Nhon Port (Binh Dinh), Van Phong Port (Khanh Hoa), Saigon Port (Ho Chi Minh City), Vung Tau Port (Vung Tau), Dong Nai Port (Dong Nai), Can Tho Port (Can Tho)

SOME INTERESTING FACTS

Vietnam's history can roughly be divided into the following periods:

- Pre-history: from circa 400,000 years (Palaeolithic to 4,000 years (Neolithic) ago, cultures in the area included Son Vi, Hoa Binh, Bac Son, Ha Long, and Hoa Loc.
- Proto-history: According to legends, Vietnam riginated in the seventh century BC when the Hung Kings founded Van Lang. In the third century BC, King An Duong Vuong named founded Au Lac and ruled until 179 B.C.
- Chinese Occupation: Vietnam was occupied by China from the first to the tenth century A.D.
- Monarchy: Kings rules the area from 968 to 1945.
- Independence: The Socialist Republic of Vienam was founded after the 1945 revolution, when President Ho Chi Minh declared independence.
- French War: Vietnam battled French colonialism from 1858 to the August Revolution in 1945, and from 1946 to the victory at Bien Bien Phu in 1954.
- American War: Vietnam fought America from 1954 to Ho Chi Minh's victory on April 30, 1975.
- From 1975 until now: Vietnam has been working towards development and success and has been member of International Organizations
- 1976: Non–Aligned Movement (NAM)
- 1976, Jun: World Intellectual Property Organization (WIPO)
- 1976, Oct: Member of UNESCO
- 1977, Sep: Vietnam became the member of The United Unions (UN)
- 1995, Jul: Vietnam became the seventh member of Association of Southeast Asian Nations (ASEAN)
- 1995, Jul: ASEAN Free Trade Area (AFTA)
- 1996: The Asia-Europe Meeting (ASEM)
- 1998, Nov: Asia-Pacific Economic Cooperation (APEC)
- 2000, Jul: signed the Bilateral Trade Agreement (BTA) with the United States
- 2007, Jan: Vietnam became the 150th member of the World Trade Organization (WTO)
- 2013, Jul: Vietnam maintains diplomatic relationships with 182 nations throughout the world, including permanent members of United Nations Security Council

ARCADIS VIETNAM CO., LTD

- 2015, May: Free Trade Agreement (FTA), South Korea and Vietnam sign Free-Trade Agreement
- 2015, May: The Free Trade Agreement between the Socialist Republic of Viet Nam and the Eurasian Economic Union and its Members States, of the other part (VN-EAEU FTA)
- 2015, Oct: The Trans-Pacific Partnership ("TPP") was concluded on 5 October 2015 in Atlanta, Georgia, USA.
- 2015, Nov: ASEAN Economic Community (AEC)
- 2015, Dec: Free Trade Agreement between EU and Vietnam (EVFTA)

RELEVANT WEBSITE

Government Office

Ministry of Public Security

Ministry of Home Affairs

Ministry of Justice

Ministry of Planning and Investment

Ministry of Finance

Ministry of Industry and Trade

Ministry of Agriculture and Rural Development

Ministry of Transport

Ministry of Construction

Ministry of Natural Resources and Environment

Ministry of Information and Communication

Ministry of Labor, War Invalid and Social Affairs

Ministry of Culture, Sports and Tourism

Ministry of Science and Technology

Ministry of Health Portal

Ministry of Education and Training

Ministry of Foreign Affairs

The State Bank of Vietnam

General Statistics Office of Vietnam

Directorate for Standards, Metrology and Quality

Vietnam National Administration of Tourism

Vietnam Customs

Vietnam Register

ARCADIS VIETNAM CO., LTD

http://www.chinhphu.vn

http://www.mps.gov.vn

http://www.moha.gov.vn

http://www.moj.gov.vn

http://www.mpi.gov.vn

http://www.mof.gov.vn

http://www.moit.gov.vn

http://www.mard.gov.vn

http://www.mt.gov.vn

http://www.moc.gov.vn

http://www.monre.gov.vn

http://mic.gov.vn

http://www.molisa.gov.vn

http://www.cinet.gov.vn

http://www.most.gov.vn

http://www.moh.gov.vn

http://www.moet.gov.vn

http://www.mofa.gov.vn

http://www.sbv.gov.vn

http://www.gso.gov.vn

http://www.tcvn.gov.vn

http://www.vietnamtourism.com

http://www.customs.gov.vn

http://www.vr.org.vn

PUBLIC HOLIDAYS

	2020
VIETNAM	
New Year's Day	01 Jan
Lunar New Year	24 Jan
	25 Jan
	26 Jan
	27 Jan
	28 Jan#
	29 Jan#
Hung Vuong King Celebration	02 Apr
Liberation Day of Saigon	30 Apr
International Labour Day	01 May
National Day	02 Sep
Christmas Day	24 Dec
Christmas Day	25 Dec

** Substitute*

MALAYSIA	
New Year's Day **	01 Jan
Chinese New Year	25 Jan
	26 Jan
Labour Day	01 May
Wesak Day	07 May#
Hari Raya Aidilfitri*	24 May
	25 May
Hari Raya Qurban*	31 Jul
Awal Muharam (Islamic New Year)	20 Aug
National Day	31 Aug
Malaysia Day	16 Sep
Prophet Muhammad's Birthday	29 Oct
Deepavali*	14 Nov
Christmas Day	25 Dec

** Subject to change*
*** Except Johor, Kelantan, Kedah, Perlis & Terengganu*
 # The following day will be an additional public holiday

ARCADIS VIETNAM CO., LTD

	2020	
THAILAND		
New Year	01	Jan
Makha Bucha Day	10	Feb[1]
Charkri Memorial Day	06	Apr
Songkran Festival	13	Apr
Songkran Festival	14	Apr
Songkran Festival	15	Apr
Labour Day	01	May
Coronation Day	04	May
Wisakha Bucha Day	06	May
H.M. Queen Suthida Bajrasudhabimalalakshana's Birthday	03	Jun
Asarnha Bucha Day	06	Jul[2]
H.M. King Maha Vajiralongkorn's Birthday	28	Jul
H.M. The Queen 's Birthday	12	Aug
H. M. King Bhumibol Adulyadej Memorial Day	13	Oct
Chulalongkorn Day	23	Oct
H.M. King Bhumibol Adulyadej's Birthday/ Father's Day	07	Dec[3]
Constitution Day	10	Dec
New Year's Eve	31	Dec

[1] - As Makha Bucha Day falls on Saturday (8 Feb), Monday is designated as a general holiday in substitution
[2] - As Asarnha Bucha Day falls on Sunday (5 July); Monday is designated as a general holidays in substitution
[3] - As H.M. King Bhumibol Adulyadej's Birthday falls on Saturday (5 Dec), Monday is designated as a general holiday in substitution

(Cont'd)

PUBLIC HOLIDAYS

	2020
PHILIPPINES	
New Year's Day	01 Jan*
Chinese New Year	25 Jan#
EDSA People Power Revolution	25 Feb#
Araw ng Kagitingan	09 Apr*
Maundy Thursday	09 Apr*
Good Friday	10 Apr*
Black Saturday	11 Apr#
Labor Day	01 May*
End of Eid-ul-Fitre (Feast of Ramadhan)	24 May*
Independence Day	12 Jun*
Eid-ul-Adha	31 Jul*
Ninoy Aquino Day	21 Aug#
National Heroes Day	31 Aug*
All Saint's Day	01 Nov#
All Souls Day	02 Nov#
Bonifacio Day	30 Nov*
Feast of the Immaculate Conception of Mary	08 Dec#
Christmas Eve	24 Dec#
Christmas Day	25 Dec*
Rizal Day	30 Dec*
Last Day of the Year	31 Dec#

** Regular Holidays*
 # Special Non-Working Days

ARCADIS VIETNAM CO., LTD

	2020	
INDIA		
New Year's Day	01	Jan
Chandrama Ugadi	25	Mar
May day	01	May
Ramzan	25	May
Ganesh Chaturthi	21	Aug
Gandhi Jayanti	02	Oct
Vijay Dashmi	26	Oct
Diwali	16	Nov
Christmas Day	25	Dec
HONG KONG		
New Year's Day	01	Jan
Lunar New Year (Day 1)	25	Jan
Lunar New Year (Day 2)	27	Jan
Lunar New Year (Day 3)	28	Jan*
Ching Ming Festival	04	Apr
Good Friday	10	Apr
Holy Saturday	11	Apr
Easter Monday	13	Apr
Birthday of the Buddha Holiday	30	Apr
Labour Day	01	May
Tuen Ng / Dragon Boat Festival	25	Jun
HKSAR Establishment Day	01	Jul
National Day	01	Oct
The day Following Chinese Mid-Autumn Festival	02	Oct
Chung Yeung Festival	26	Oct*
Christmas Day	25	Dec
The 1st weekday after Christmas Day	26	Dec

** As the festivals in 2020 falls on Sunday, the day following it is designated as a general holiday in substitution*

(Cont'd)

PUBLIC HOLIDAYS

	2020	
SINGAPORE		
New Year's Day	01	Jan
Chinese New Year	25	Jan
	26	Jan#
Good Friday	10	Apr
Labour Day	01	May
Vesak Day	07	May
Hari Raya Puasa	24	May#
National Day	31	Jul
Hari Raya Haji	09	Aug#
Deepavali	14	Nov
Christmas Day	25	Dec

 # The following Monday will be a public holiday.

CHINA		
New Year's Day	01	Jan
Chinese New Year's Eve	24	Jan
Chinese New Year$	25	Jan
	31	Jan
Women's Day*	08	Mar@
Ching Ming Festival	05	Apr
	06	Apr
	07	Apr
Labour Day	01	May
Tuen Ng / Dragon Boat Festival	25	Jun
Mid-Autumn Festival	13	Sep
National Day#	01	Oct
	07	Oct
Chung Yeung Festival	25	Oct@

$ 25-31 Jan 2020 are holidays
** All women can have a half day holiday*
 # 01-07 Oct 2020 are public holidays
@ Non-Statutory Holiday

ARCADIS VIETNAM CO., LTD

	2020
MACAU	
New Year's Day	01 Jan
Lunar New Year's Eve (Afternoon)	24 Jan*
Lunar New Year's Day	28 Jan@
The 2nd day of Lunar New Year	29 Jan@
The 3rd day of Lunar New Year	27 Jan
Ching Ming Festival	06 Apr@
Good Friday	10 Apr
Holy Saturday	11 Apr
Easter Monday	13 Apr@
Birthday of the Buddha Holiday	30 Apr
Labour Day	01 May
Tuen Ng / Dragon Boat Festival	25 Jun
National Day	01 Oct
The day following National Day	02 Oct
The day Following Chinese Mid-Autumn Festival	05 Oct*
Chung Yeung Festival	26 Oct@
All Soul's Day	02 Nov
Feast of the Immaculate Conception	08 Dec
Winter Solstice	21 Dec
Macau SAR Establishment Day	22 Dec@
Christmas Eve	24 Dec
Christmas Day	25 Dec
New Year's Eve (Afternoon)	31 Dec*

* *Special Holiday Granted by Chief Executive for staff in Public Administration*

@ *As the festivals in 2020 falls on Saturday / Sunday, the day following it is designated as a general holiday in substitution*

PRIME RATES

PRIME RATES AND BASE LENDING RATES AS AT 4TH QUARTER 2019.

COUNTRY	RATE (%)
China**	4.85
Hong Kong	5.00
India	9.40
Macau	5.25
Malaysia^^^	4.35
Philippines	5.64
Singapore	5.25
Thailand#	6.60
United Kingdom	0.50
United States of America	5.50
Vietnam##	9.00

*China** = 5-year Benchmark Lending Rate*
Malaysia^^^ = Indicative Effective Lending Rate
Thailand# = Minimum Loan Rate % per annum (avg based on local bank)
Vietnam## = Min and in VND per year

ARCADIS VIETNAM CO., LTD

FINANCIAL FORMULAE

Future value of $1	$FV = PV (1 + i)^n$
Future value of $1 per period	$FV = PMT [((1+i)^n - 1) \div i]$
Sinking fund (the amount required to be put away periodically to realise some future sum)	$PMT = FV [i \div ((1 + i)^n - 1)]$
Present value of $1	$PV = FV [1\div (1+i)^n]$
Present value of $1 per period	$PV = PMT[((1+i)^n -1)\div(i(1+i)^n)]$
Annuity with a PV of $1 (mortgage bond formula)	$PMT = PV[(i (1+i)^n) \div((1+i)^n -1)]$

PV = present value

FV = future value

PMT = payment amount

n = period (e.g. 10 years with monthly payments, n = 10 x 12 = 120)

i = interest rate per period

(e.g. 12% p.a. compounded monthly;

i = 12% ÷ 12 months = 1% per period)

IDD CODES AND TIME DIFFERENCES

LOCATION	IDD COUNTRY CODE	AREA CODE	TIME DIFFERENCE (Hours)*
Australia:			
Melbourne	61	3	+3
Perth	61	8	0
Sydney	61	2	+3
Bahrain	973	-	-5
Bangladesh (Dhaka)	880	2	-2
Bhutan (Thimphu)	975	2	-2
Brunei:			
Bandar Seri Begawan	673	2	0
Kuala Belait	673	3	0
Cambodia (Phnom Penh)	855	23	-1
Canada:			
Toronto (Metropolitan)	1	416	-13
Vancouver	1	604	-16
China:			
Beijing	86	10	0
Guangzhou	86	20	0
Hong Kong	852	-	0
Macau	853	-	0
Shanghai	86	21	0
Shenzhen	86	755	0
France (Paris)	33	1	-7
India:			
Bangalore	91	80	-2.5
Chennai	91	44	-2.5
New Delhi	91	11	-2.5
Mumbai	91	22	-2.5
Indonesia:			
Bali	62	36	0
Jakarta	62	21	-1
Ireland:			
Cork	353	21	-8
Dublin	353	1	-8
Japan:			
Tokyo	81	3	+1
Osaka	81	6	+1
Korea (Seoul)	82	2	+1
Korea (Pyongyang)	850	2	+1
Laos (Vientiane)	856	21	+0.5

Source: www.worldtimeserver.com ; www.worldtimezone.com
www.timeanddate.com

ARCADIS VIETNAM CO., LTD

LOCATION	IDD COUNTRY CODE	AREA CODE	TIME DIFFERENCE (Hours)*
Malaysia:			
Johor Bahru	60	7	0
Kota Kinabalu	60	88	0
Kuala Lumpur	60	3	0
Kuching	60	82	0
Penang	60	4	0
Mongolia (Ulaanbaatar)	976	11	0
Myanmar (Yangon)	95	1	-1.5
Nepal (Kathmandu)	977	1	-2.25
Netherlands:			
Amsterdam	31	20	-7
New Zealand:			
Auckland	64	9	+5
Wellington	64	4	+5
Pakistan (Karachi)	92	21	-3
Philippines (Manila)	63	2	0
Qatar	974	-	-5
Singapore	65	-	0
South Africa:			
Johannesburg	27	11	-6
Cape Town	27	21	-6
Sri Lanka (Colombo)	94	11	-2.5
Russia (Moscow)	7	495	-5
Taiwan (Taipei)	886	2	0
Thailand:			
Bangkok	66	2	-1
Phuket	66	76	-1
United Arab Emirates:			
Abu Dhabi	971	2	-4
Dubai	971	4	-4
United Kingdom:			
London	44	20	-8
Edinburgh	44	131	-8
USA:			
Los Angeles	1	213	-16
New York	1	212	-13
Vietnam:			
Ho Chi Minh City	84	8	-1
Hanoi	84	4	-1

* As compared to Hong Kong. Allowance should be made for seasonal time variations. Time differences above as at 1 January.

CONVERSION FACTORS

UNIT					
LENGTH					
10mm	=	1 cm	12 in	=	1 ft
100cm	=	1 m	3ft	=	1 yd
1,000m	=	1 km	1,760 yd	=	1 mile
AREA					
10,000 m^2	=	1 ha	9 ft^2	=	1 yd^2
100 ha	=	1 km^2	4,840 yd^2	=	1 acre
			638 acre	=	1 $miles^2$
VOLUME					
1,000 ml	=	1 l	(UK) 8 pt	=	1 gal
			(US) 8 pt	=	1 gal
MASS					
1,000 g	=	1 kg	16 oz	=	1 lb
1,000kg	=	1 tonne	2,240 lb	=	1 ton
16 tael	=	1 catty			
PRESSURE					
1 N/m^2	=	1 Pa	0.068 atm	=	1 Psi
10.197 kgf/cm^2	=	1 MPa	0.491 Psi	=	1 inHg
10 bar	=	1 MPa			
POWER					
TEMPERATURE					

ARCADIS VIETNAM CO., LTD

TO METRIC (Approx)			TO IMPERIAL (Approx)		
1 in	=	25.400 mm	1 cm	=	0.394 in
1 ft	=	30.480 cm	1 m	=	3.281 ft
1 yd	=	0.914 m	1 m	=	1.094 yd
1 mile	=	1.609 km	1 km	=	0.621 mile
1 ft^2	=	0.093 m^2	1 m^2	=	10.764 ft^2
1 yd^2	=	0.836 m^2	1 m^2	=	1.196 yd^2
1 acre	=	0.405 ha	1 ha	=	2.471 acres
1 $miles^2$	=	2.590 km^2	1 km^2	=	0.386 $miles^2$
(UK) 1 pt	=	0.568 l	(UK) 1 l	=	1.760 pt
(US) 1 pt	=	0.473 l	(US) 1 l	=	2.113 pt
(UK) 1 gal	=	4.546 l	(UK) 1 l	=	0.220 gal
(US) 1 gal	=	3.785 l	(US) 1 l	=	0.264 gal
1 oz	=	28.350 g	1 gram	=	0.035 oz
1 lb	=	0.454 kg	1 kg	=	2.205 lb
1 ton	=	1.016 tonne	1 tonne	=	0.984 ton
1 catty	=	0.605 kg			
1 psi	=	6.89 kPa	1 kPa	=	0.145 psi
1 atm	=	101 kPa	1 MPa	=	9.87 atm
1 ton/in^2	=	15.4 Mpa	1 MPa	=	0.647 ton/in^2
1 inHg	=	33.9 mb	1 mb	=	0.0295 inHg
1hp	=	0.746 kw	1 kw	=	1.340 hp
^{0}C	=	(^{0}F-32)x5/9	^{0}F	=	(^{0}Cx9/5)+32

ARCADIS ASIA LEADERSHIP TEAM

Glenn Lutz
Chief Executive Office, Asia
glenn.lutz@arcadis.com

Daniel Blitch
Chief Financial Officer, Asia
daniel.blitch@arcadis.com

Niek Niens
Chief Operating Officer, Asia
niek.niens@arcadis.com

Adam Sutton
Regional HR and Change Director, Asia
adam.sutton@arcadis.com

Penny Murphy
Regional Head of Digital Transformation, Asia
penny.murphy@arcadis.com

Carl Watson
General Counsel, Asia
carl.watson@arcadis.com

Laurence Hatem
Chief Information Officer, Asia Pacific
laurence.hatem@arcadis.com

Stephen Uhr
Executive Director, Strategy, Clients & Innovation, Asia Pacific
stephen.uhr@arcadis.com

ARCADIS VIETNAM CO., LTD

Francis Au

Head of Greater Bay Area, Cost & Commercial Management
francis.au@arcadis.com

Joe Chan

Head of China, Cost & Commercial Management
joe.chan@arcadis.com

Weibin Xu

Head of Project & Program Mgmt, Greater China and Env & Water, Asia
weibin.xu@arcadis.com

Tim Risbridger

Head of Singapore
tim.risbridger@arcadis.com

Ross McKenzie

Head of Philippines, Thailand & Vietnam
ross.mckenzie@arcadis.com

Justin Teoh

Head of Malaysia
justin.teoh@arcadis.com

Andrew Chan

Regional Solutions Lead, Cost & Commercial Management
andrew.chan@arcadis.com

Katherine Chan

Greater Bay Area, City Executive
katherine.chan@arcadis.com

ARCADIS ASIA SECTORS

AUTOMOTIVE

At the present time we are witnessing a massive shift in the automotive sector. Electric vehicles are rapidly establishing themselves as a credible alternative as their range and performance meets (and exceeds) customer expectation. We are seeing more and more brands developing their own models across the region. In addition, the race for autonomous vehicles is leading to the development of new technologies at a pace that is unprecedented in the sector. We are helping our clients to restructure their manufacturing bases to meet shifting global demand, to remodel production lines for the new models demanded by customers, and to invest in the new supply chain technology.

Automotive retail continues to be fiercely competitive, with digital technology entering this space creating a more immersive buying experience. The race to roll out new retail formats around the globe requires lean and efficient delivery models and global standardization, supply chains and logistics.

AVIATION

The recent successful launches of new airframe technologies has caused airports to rethink how they can service larger passenger planes, and, with the prospect of new routes being enabled by longer range and new airframe formats, we expect to see further expansion and development of airports around the globe.

Domestic air travel and cargo hubs are also among popular areas of investment in aviation sector. Investment in domestic air travel is essential, as passengers demand an experience comparable with the best international airports. New cargo hubs are planned to meet 'same day' delivery expectations from online retailers and logistics firms. We expect to see continued investment and demand for high quality design and engineering solutions in the aviation sector for many years to come.

CHEMICALS & PHARMACEUTICALS

The chemical and pharmaceutical industry faces a diverse range of challenges across globe. Growing and ageing populations have created rising demands for medication and more effective cures for diseases. Asia is no exception, despite Asia having a relatively younger population compared the other regions. It is also important to take note that approximately two thirds of total global demand growth for chemicals is expected to be generated in Asia.

In order to stay ahead of the competition, we work with our clients across Asia to improve their supply chain and secure their pipelines. The chemicals and pharmaceuticals industry will continue to be 'on the move' to Asia with rapid development in the future to fulfill demand coming from Asia and beyond.

COMMERCIAL DEVELOPERS

Commercial developers are a significant proportion of our market in Asia, especially in those countries where the economy is driven by investment in property. In the last 10 years China, for example, has been fuelled by demand for properties as a result of rapid urbanization, and this is also now the case in countries such as Vietnam and the Philippines.

All building types, including commercial offices, residential, leisure, hospitality and retail, are confronted with ever increasing challenges in terms of efficiency of land use, planning compliance, product positioning, cost, quality, impact on communities, sustainability and also market competitiveness. The commercial developer sector will continue to play a key role in all economies across Asia.

(Cont'd)

ARCADIS ASIA SECTORS

FINANCIAL INSTITUTIONS

Driving better investment and asset performance and improving sustainable returns in current challenging markets is the key focus of our sector specialists.

Through utilizing unique market insight, such as our global asset performance benchmarks, our deep technical knowledge, and an unrivalled global track record in working with financial institutions, we are able to define solutions to meet client needs and to enhance their business outcomes.

OIL AND GAS

Rising production costs and unpredictable prices put oil & gas clients under more pressure than ever. Growing complexities of shifting environmental legislation combined with an increased need for asset decommissioning, oil & gas has become a complex and rapidly evolving sector.

We partner with global oil & gas clients to maximize returns on our clients' investments, through better management of project risks and costs, and improvement of opex performance. We work across the asset lifecycle from concept through to decommissioning. We bring together upstream & downstream expertise and understanding from a broad base of capabilities including cost & risk management, environmental management, project management and maintenance strategy.

RAIL

Rapid large scale urbanization, tight budgets and environmental sensitivity require innovative approaches to deliver advanced infrastructure. With our expertise in rail, and our transformational thinking, clients rely on us to improve performance and connect communities across countries and regions.

In Asia, we have been involved in providing engineering design, cost management, contract administration, risk management, business advisory and mobility oriented design for numerous metro and high speed rail projects in Hong Kong, Mainland China, Taiwan, Singapore and Malaysia.

PORTS AND WATERWAYS

Ports are at the heart of globalization, facilitating the spread of trade and prosperity. The rapid growth of Asia has seen a substantial investment in port and logistics infrastructure, but also increasing competition between ports, and a focus on raising productivity and service quality. At the same time, it is increasingly necessary to respond to public concerns about environmental and safety issues.

Delivering sustainable growth is a great challenge and requires know-how and expertise across a broad range of disciplines. We offer governments, port institutions, private terminal operators, investors and shipping lines all the disciplines necessary for an integrated approach and the delivery of successful outcomes, whether in the technical, operational, nautical, environmental, risk, financial or economic arena.

RETAIL & CONGLOMERATES

As the world of retail faces the fiercest competition yet due to a change in the traditional retail landscape and the rapid development of online retail industry, we work with our retail clients to gain a competitive advantage in their market expansion or re-branding. It is essential for us to tailor our services to fit client strengths and needs, to minimize spend and achieve the best solution for each individual company.

With unrivaled experience across all facets of retail development, from luxury and sports fashion to cosmetics, supermarkets and restaurant chains, we help our clients successfully navigate through complex challenges in retail development.

ARCADIS ASIA SERVICES

BUSINESS ADVISORY

From rapid urbanization and pressure on natural resources, to tighter regulation and market consolidation, we live in an increasingly complex world. We understand your business challenges and have first-hand experience of the assets you own and operate. We partner with you and bring unique insights to support you in getting better results, with more certainty from strategy, optimizing performance, enhancing resiliency or transformation of your asset- Arcadis has helped clients globally deliver success.

COST MANAGEMENT

Be it a high-rise office building, a state-of-the-art rail station or a large scale industrial development, the need to achieve value for money is central to every investment strategy. Our people understand the need to accurately advise on costs and procurement at planning stage, ensuring a development or program is both economically and environmentally viable for many years to come.

DESIGN & ENGINEERING

From tall buildings to the busy airports; from underground tunnels to iconic bridges, engineering feats help to improve the quality of life for us all. Our specialist engineers use their expertise and knowledge to deliver exceptional and sustainable outcomes for clients through working on some of the world's most impressive and well-known buildings and structures.

ENVIRONMENT

We all deserve a clean, safe environment in which to live. Now more than ever, businesses and governments recognize the need to incorporate environmental concerns into their decision making. Arcadis is a global leader in inventive technical and financial approaches, helping some of the world's leading corporates and governments understand their impact on the natural world.

PROJECT & PROGRAMME MANAGEMENT

Organizing the creation of the world's largest, most complex and iconic programs of work in the built and natural environment today is no easy task. Budgets, supply chains, health and safety, time-frames and the large number of parties involved can be daunting. We work alongside our clients to create the right strategy, manage and mitigate risk, and assure the outcomes to meet our clients' business objectives and create exceptional value. As construction programs grow more complex, often with multi-geography delivery and faster paced schedules, the risks are getting.

WATER

From source to tap and then back to nature, the planet's most precious resource should be cherished. Thanks to over a century of experience in the water sector, Arcadis' specialist teams around the globe are uniquely positioned to provide safe and secure water technology that is built to withstand the demands of a rapidly changing world.

DIRECTORY OF OFFICES

VIETNAM

HO CHI MINH CITY
L12-03, Level 12, Vincom Center B
72 Le Thanh Ton Street
Ben Nghe ward,
District 01, Ho Chi Minh City, Vietnam
GPS : 10.778068, 106.702063
Tel : (84 28) 3823 8297
Fax : (84 28) 3823 8197
Email : info-vn@arcadis.com
Contact : Truong Minh Tri

THAILAND

BANGKOK
ARCADIS (THAILAND) LTD
6th Floor, Kian Gwan II Building
140/1 Wireless Road, Lumpini, Pratumwan
Bangkok 10330, Thailand
GPS : 13.734969, 100.545448
Tel : (66 2) 123 3400
Fax : (66 2) 253 4977
Email : info-th@arcadis.com
Contact : Wong Soon Bin

CHINA

HONG KONG
ARCADIS HONG KONG LIMITED
17/F, Two Harbour Square,
180 Wai Yip Street, Kwun Tong,
Kowloon, Hong Kong
GPS : 22.310065, 114.221216
Tel : (852) 2911 2000
Fax : (852) 2911 2002
Email : info-hk@arcadis.com
Contact : Francis Au / MO Lai

BAODING
BEIJING ARCADIS CONSTRUCTION CONSULTANTS
CO. LTD. BAODING BRANCH
Suite 808-811,
Tower B, Shanggu Plaza Huibo,
No. 2238 Chaoyang North Street,
Baoding, Hebei Province 071000, China
GPS : 38.918742, 115.467576
Tel : (86 312) 588 1301
Fax : -
Email : info-cn@arcadis.com
Contact : Hu Ping

BEIJING
BEIJING ARCADIS CONSTRUCTION
CONSULTANTS CO. LTD.
Suite 1225 - 1240, South Wing
Central Tower, Junefield Plaza,
10 Xuan Wu Men Wai Street
Beijing 100052, China
GPS : 39.896738,116.375676
Tel : (86 10) 6310 1136
Fax : (86 10) 6310 1143
Email : info-cn@arcadis.com
Contact : Kenn Ng / Hu Ping

(Cont'd)

DIRECTORY OF OFFICES

CHANGSHA
ARCADIS CONSULTANCY (SHANGHAI) CO. LTD.
CHANGSHA BRANCH
Room 2315-2317, HUAYUAN International Center,
No.36 Section 2,
Xiangjiang Middle Road,
Tianxin District,
Changsha, Hunan Province,
410002, China
GPS : 28.195233,112.976893
Tel : (86 731) 8277 2500
Fax : -
Email : info-cn@arcadis.com
Contact : Wong Chin Ying / Chen Yong

CHENGDU
ARCADIS CONSULTANCY (CHENGDU) CO., LTD
Room11-11, Block2,
West Financial International Center,
258 Lower East Street East Street,
Jinjiang District, Chengdu 610011, China
GPS : 30.652994, 104.078937
Tel : (86 28) 8671 8373
Fax : (86 28) 8671 8535
Email : info-cn@arcadis.com
Contact : Marco Foo

CHONGQING
ARCADIS CONSULTANCY (CHENGDU) CO., LTD.
CHONGQING BRANCH
Room 3409-3410, International Trade Centre
38 Qing Nian Road, Central District
Chongqing 400010, China
GPS : 29.556331,106.574332
Tel : (86 23) 8655 1333
Fax : (86 23) 8655 1616
Email : info-cn@arcadis.com
Contact : Gary Lin

DALIAN
BEIJING ARCADIS CONSTRUCTION CONSULTANTS CO. LTD. DALIAN BRANCH
Unit 07, 32F, Xiwang Tower, 136 Zhongshan Road,
Zhongshan District, Dalian, Liaoning Province
116001, China
GPS : 38.914864,121.631245
Tel : (86 411) 8800 8018
Fax : (86 411) 8800 8823
Email : info-cn@arcadis.com
Contact : Kenn Ng / Pan Jing

FOSHAN
ARCADIS CONSULTANCY (SHENZHEN) CO., LTD. FOSHAN BRANCH
RM. 1002-1004, 10/F, Lingnan Tiandi,
Zu Miao Road, Foshan
Guangdong Province
528000, China
GPS : 23.031224,113.11278
Tel : (86 757) 8203 0028
Fax : (86 757) 8203 0029
Email : info-cn@arcadis.com
Contact : Stanley Wan / Brandon Wan

GUANGZHOU
ARCADIS CONSULTANCY (SHENZHEN) CO., LTD. GUANGZHOU BRANCH
3A10-18 Unit, 3A/F
Bank of America Plaza
555 Ren Min Zhong Road
Guangzhou, Guangdong Province, 510 145, China
GPS : 23.123148,113.253628
Tel : (86 20) 8130 3813
Fax : (86 20) 8130 3812
Email : info-cn@arcadis.com
Contact : Xu Wei Bin / Stanley Wan

(Cont'd)

DIRECTORY OF OFFICES

HAIKOU
ARCADIS CONSULTANCY (SHENZHEN) CO., LTD. HAIKOU BRANCH
Unit B 27/F Times Square
2 Guomao Road, Haikou
Hainan Province
570100, China
GPS : 20.029509,110.326235
Tel : (86 898) 6652 7808
Fax : (86 898) 6652 7809
Email : info-cn@arcadis.com
Contact : Kenneth Lo / Yi Zheng Gang

HANGZHOU
ARCADIS CONSULTANCY (SHANGHAI) CO. LTD. HANGZHOU BRANCH
Room 1306 WinNing International
100 Min Xin Road
Hangzhou, Zhejiang Province
310016, China
GPS : 30.251755,120.218913
Tel : (86 571) 2829 7766
Fax : (86 571) 2829 7622
Email : info-cn@arcadis.com
Contact : Alex Zou / Lu Wei

HENGQIN
ARCADIS CONSULTANCY ZHUHAI HENGQIN CO., LTD.
7/F, 156 Nan Shan Ju Road,
Hengqin, Zhuhai,
Guangdong Province 519031, China
GPS : 22.142774, 113.544438
Tel : (86 756) 868 8986
Fax : (86 756) 868 8969
Email : info-cn@arcadis.com
Contact : Stanley Wan

MACAU
ARCADIS MACAU LIMITED
Avenida da Praia Grande, No. 594
Edificio BCM, 12th Floor,
Macau
GPS : 22.192210,113.541252
Tel : (853) 2833 1710
Fax : (853) 2833 1532
Email : info-mo@arcadis.com
Contact : Winnie Wong

NANJING
ARCADIS CONSULTANCY (SHANGHAI) CO. LTD.
NANJING BRANCH
1104 South Tower Jinmao Plaza,
201 Zhong Yang Road, Nanjing
Jiangsu Province 210009, China
GPS : 32.071984, 118.783443
Tel : (86 25) 57911860
Fax : (86 25) 6698 1860
Email : info-cn@arcadis.com
Contact : David Choy/Chen Tao Fen

QINGDAO
ARCADIS CONSULTANCY (SHANGHAI)
CO. LTD. QINGDAO BRANCH
Room 2701, Office Tower, Shangri-la Centre,
No.9 Xiang-gang Middle Road, Shinan District,
Qingdao, Shangdong Province
266071, China
GPS : 36.064884, 120.378583
Tel : (86 532) 8280 1818
Fax : -
Email : info-cn@arcadis.com
Contact : Lu Mei Hua / Andy Feng

SHANGHAI
ARCADIS CONSULTANCY (SHANGHAI) CO. LTD.
11th Floor, Building C, The Place,
No. 150 Zunyi Road
Changning District
Shanghai 200051 China
GPS : 31.207363, 121.407984
Tel : (86 21) 6026 1300
Fax : (86 21) 6026 1800
Email : info-cn@arcadis.com
Contact : Joe Chan / David Choy

(Cont'd)

DIRECTORY OF OFFICES

SHENYANG
BEIJING ARCADIS CONSTRUCTION CONSULTANTS
CO. LTD. SHENYANG BRANCH
Room 3013-3015, Office Tower 1,
Forum66, 1-1 Qingnian Avenue,
Shenhe District, Shenyang 110063
Liaoning, China
GPS : 41.799603,123.433787
Tel : (86 24) 3195 8880
Fax : (86 24) 3128 6983
Email : info-cn@arcadis.com
Contact : Kenn Ng / Simon Chow

SHENZHEN
ARCADIS CONSULTANCY (SHENZHEN) CO. LTD.
Room 1001, AVIC Centre,
1018 Huafu Road, Shenzhen
Guangdong Province 518031, China
GPS : 22.543241, 114.082051
Tel : (86 755) 3635 0688
Fax : (86 755) 2598 1854
Email : info-cn@arcadis.com
Contact : Kenneth Lo / Ricky Ho

SUZHOU
ARCADIS CONSULTANCY (SHANGHAI) CO. LTD.
SUZHOU BRANCH
Room 906 The Summit,
118 Suzhou Avenue West,
Suzhou, Jiangsu Province
215021 China
GPS : 31.315966, 120.669099
Tel : (86 512) 8777 5599
Fax : (86 512) 8777 5600
Email : info-cn@arcadis.com
Contact : David Choy / Zhang Rui

TIANJIN
BEIJING ARCADIS CONSTRUCTION CONSULTANTS
CO. LTD. TIANJIN BRANCH
4002, 40/F
Tianjin World Financial Centre Office Tower
2 Dagubei Road,
He Ping District, Tianjin 300020, China
GPS : 39.129619,117.202758
Tel : (86 22) 2329 8611
Fax : (86 22) 2319 3186
Email : info-cn@arcadis.com
Contact : Kenn Ng / Shun Ying

WUHAN
ARCADIS CONSULTANCY (SHANGHAI)
CO. LTD. WUHAN BRANCH
RM.1703, Citic Pacific Mansion,
No.1627 Zhongshan Avenue, Jiangan District,
Wuhan, Hubei Province 430010, China
GPS : 30.616813, 114.317276
Tel : (86 27) 5920 9299
Fax : (86 27) 5920 9298
Email : info-cn@arcadis.com
Contact : Wong Chin Ying / Guang Rong

XI'AN
ARCADIS CONSULTANCY (SHENZHEN) CO., LTD.
XI'AN BRANCH
Room 1606, CapitaMall Office Building
64 South Second Ring Western
Xi'an, Shaanxi Province
710065, China
GPS : 34.230397,108.934893
Tel : (86 29) 8866 9711
Fax : (86 29) 8866 9760
Email : info-cn@arcadis.com
Contact : Gary Lin / Wang Zhu Zhu

(Cont'd)

DIRECTORY OF OFFICES

INDIA

BANGALORE
ARCADIS INDIA PRIVATE LIMITED
135, 4th Floor, RMZ Titanium
Old Airport Road, Kodihalli
Bangalore 560 017, India
GPS : 12.9591527 / 77.6481456
Tel : (00 91 80) 4123 9141
Email : IndiaBD@arcadis.com
Contact : Pradeep Kumar

DELHI
ARCADIS INDIA PRIVATE LIMITED
3rd Floor, Tower B,
Logix Techno Park,
Plot No.5, Sector 127,
Noida 201 304, Uttar Pradesh
GPS : 28.5359691 / 77.34585591
Tel : (00 91 120) 436 8400
Fax : (00 91 120 436 8401
Email : IndiaBD@arcadis.com
Contact : Pradeep Kumar

MUMBAI
ARCADIS INDIA PRIVATE LIMITED
#1001, 10th Floor, Vishwaroop Infotech Park
Plot No. 34, 35, 38, Sector 30A,
Vashi, Navi Mumbai – 400 705
Maharashtra
GPS : 19.0644562 / 72.9965259
Tel : (00 91 22) 4125 6060
Fax : (00 91 22) 4125 6050
Email : IndiaBD@arcadis.com
Contact : Pradeep Kumar

MALAYSIA

SELANGOR
JUBM SDN BHD
ARCADIS (MALAYSIA) SDN BHD
ARCADIS PROJEKS SDN BHD
ARCADIS CONSULTANCY SDN BHD
Level 5, Menara TSR
12 Jalan PJU 7/3, Mutiara Damansara
47810 Petaling Jaya
Selangor Darul Ehsan,
Malaysia

GPS	: 3.1616, 101.6129
Tel	: (60 3) 2106 8000
Fax	: (60 3) 2106 9090
Email	: info-my@arcadis.com
Contact	: Justin Teoh / Nur Aziz Abu Bakar / Syed Mahadzir Syed Ahmad / Rozila Abdul Rahman / Yap Sai Hoe / Jeffrey Lim

JOHOR
47, Jalan Setia Tropika 1/30
Taman Setia Tropika
81200 Johor Bahru
Johor Darul Takzim
Malaysia

GPS	: 1.5422, 103.7111
Tel	: (60 7) 232 8300
Fax	: (60 7) 232 8232
Email	: info-my@arcadis.com
Contact	: Syed Mahadzir Syed Ahmad / Tan Pei Ling

(Cont'd)

DIRECTORY OF OFFICES

PENANG
Suite 3A-3, Level 3A, Wisma Great Eastern
No. 25, Lebuh Light
10200 Penang
Malaysia
GPS : 5.4201, 100.3408
Tel : (60 4) 264 2071 / 264 2072 / 264 2073
Fax : (60 4) 264 2068
Email : info-my@arcadis.com
Contact : Nur Aziz Abu Bakar / Yeng Khiam Jin

SABAH
Suite 8A, 8th Floor, Wisma Pendidikan
Jalan Padang
P.O. Box 11598
88817 Kota Kinabalu, Sabah
Malaysia
GPS : 5.9783, 116.0761
Tel : (60 88) 223 369 / 223 371
Fax : (60 88) 216 537
Email : info-my@arcadis.com
Contact : Jeffrey Lim / VK Wong

SARAWAK
JUBM SDN BHD
No. 2 (3rd Floor), Jalan Song Thian Cheok
93100 Kuching, Sarawak
Malaysia
GPS : 1.5532, 110.3532
Tel : (60 82) 232 212
Fax : (60 82) 232 198
Email : info-my@arcadis.com
Contact : Nor Azman Bin Baharum

PHILIPPINES

MANILA
ARCADIS PHILIPPINES INC
25th Floor, Circuit Corporate Center One
Circuit Makati, A.P. Reyes Street, Brgy. Carmona
Makati City 1207
Philippines
GPS : 14.57333, 121.01802
Tel : (00 63 2) 7908 2888
Email : info-ph@arcadis.com
Contact : Ross McKenzie / Darneil Perez / Brian Parsons / Nam Le / Monina Munsayac / Carla Cruz / Paul Magbanua

CEBU
12Floor, 2Quad Building, Cardinal Rosales Avenue, corner Sumilon Road, Cebu Business Park, Cebu City 6000
Philippines
GPS : 10.3142574, 123.9053502
Tel : (00 63 32) 232 2200
Fax : (00 63 32) 260 3699
Email : info-ph@arcadis.com
Contact : Ross McKenzie / Darneil Perez / Brian Parsons / Nam Le / Monina Munsayac / Carla Cruz / Paul Magbanua / Philip Balingit

SINGAPORE

ARCADIS SINGAPORE PTE LTD
1 Magazine Road,
#05-01 Central Mall
Singapore 059567
GPS : 1.288526,103.842085
Tel : (65) 6222 3888
Fax : (65) 6224 7089
Email : info-sg@arcadis.com
Contact : Lorimer A. Doig / Josephine Lee

ARCADIS PTE LTD
1 Magazine Road, #05-01 Central Mall
Singapore 059567
GPS : 1.288526,103.842085
Tel : (65) 6222 3888
Fax : (65) 6224 7089
Email : info-sg@arcadis.com
Contact : Tim Risbridger

(Cont'd)

DIRECTORY OF OFFICES

ARCADIS ASIA HEADQUARTERS

HONG KONG
ARCADIS ASIA LIMITED
ARCADIS ASIA REGIONAL HEADQUARTERS LIMITED
17/F, Two Harbour Square,
180 Wai Yip Street, Kwun Tong, Kowloon,
Hong Kong
GPS : 22.310065, 114.221216
Tel : (852) 2911 2000
Fax : (852) 2911 2002
Email : asiainfo@arcadis.com
Contact : Glenn Lutz, CEO, Asia

ARCADIS HEADQUARTERS

AMSTERDAM
ARCADIS NV
"Symphony"
Gustav Mahlerplein 97-103
1082 MS Amsterdam
P.O. Box 7895
1008 AB Amsterdam
The Netherlands
Tel : (31 20) 201 1011
Fax : (31 20) 201 1002
Email : info@arcadis.com
Website : www.arcadis.com
Contact : Greg Steele, Group Executive – Asia Pacific

ACKNOWLEDGEMENT

Credits to KPMG, Aon Vietnam Limited.

Jones Lang Lasalle.

Arcadis Vietnam Co., Ltd would like to acknowledge the invaluable support and advice from the following organisations:

- KPMG Vietnam

  http://www.kpmg.com

- Aon Vietnam Limited.

  http://www.aon.com

- Jones Lang Lasalle

  http://www.jllvietnam.com

ARCADIS VIETNAM CO., LTD

HO CHI MINH CITY
L12-03, Level 12, VINCOM Center B
72 Le Thanh Ton Street
Ben Nghe ward, District 01
Ho Chi Minh City, Vietnam
Tel: (84 28) 3823 8297 Fax: (84 28) 3823 8197
Email: info-vn@arcadis.com

FOLLOW US
@Arcadis_Asia

JOIN US
LinkedIn Arcadis

www.arcadis.com