ARCADIS

Construction Cost Handbook

CHINA & HONG KONG 2022

Arcadis Hong Kong Limited

Electronic Cost Handbook

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Handbook Cover Photos:-

1. Qingmao Port Immigration Building, Macau
2. Universal Studios Beijing – The Wizarding World of Harry Potter, PRC
3. The Ring Chongqing, PRC
4. The North Lantau Hospital Hong Kong Infection Control Centre (HKICC)
5. M+ Museum, West Kowloon Cultural District, Hong Kong

The following handbook of information relating to the construction industry has been compiled by:

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The information contained herein should be regarded as indicative and for general guidance only. Whilst every effort has been made to ensure accuracy, no responsibility can be accepted for errors and omissions, however caused.

If advice concerning individual projects is required, we would be happy to assist.

Unless otherwise stated, costs reflected in this handbook are **Hong Kong costs** at **4th Quarter 2021**.

Arcadis Hong Kong Limited would like to acknowledge the assistance of **Knight Frank** and **Baker McKenzie FenXun** in providing additional data and information for this publication.

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ISO 14001 : 2015
Certificate No. : EMS685471

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ISO 45001:2018
Certificate No. : OHS685472

bsi ISO 9001 Quality Management
ISO 9001 : 2015
Certificate No. : FS684805

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ABOUT US

Arcadis is the leading global Design & Consultancy for natural and built assets. Applying our deep market sector insights and collective design, consultancy, engineering and project management services we work in partnership with our clients to deliver exceptional and sustainable outcomes throughout the lifecycle of their natural and built assets. In Asia, we have over 4,000 people covering the multiple market across all sectors focused on improving quality of life.

Arcadis has a long history of leading expertise in providing Cost Management capabilities that ensure our clients' projects are delivered with a competitive advantage, exceed project requirements and deliver sustainable outcomes. Our Cost Management heritage is particularly strong in Greater China having set-up our first office in Hong Kong back in 1949. We entered the Mainland China market in 1984, introducing modern Cost Management techniques to its newly evolving construction market. Our initial commissions were from Hong Kong and foreign developers investing in China, however since then our client base has grown to include state-owned enterprises and local developers.

We are committed to further extending our professional expertise to include new areas like whole-life costing, and supporting the growing number of clients in Asia who are looking for high quality Cost Management solutions as they embark on projects in other parts of the world. Furthermore, we have aligned our operating models to facilitate innovation, ease knowledge transfer and enable the sharing of best practices. We work to ensure clients have access to our best resources, delivering the most appropriate solutions, at a cost that meets their requirements.

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.

Client Success

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

Integrity

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

Sustainability

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

Collaboration

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

CONSTRUCTION COST DATA 1

CONSTRUCTION COSTS FOR HONG KONG

BUILDING TYPE	HK$/m² CFA		
	BUILDING	SERVICES	TOTAL
DOMESTIC			
Apartments, high rise, public authority standard	8,850 - 10,650	1,950 - 2,350	10,800 - 13,000
Apartments, high rise, average standard	19,700 - 21,850	3,900 - 5,450	23,600 - 27,300
Apartments, high rise, high end	25,650 - 29,050	4,950 - 6,550	30,600 - 35,600
Terraced houses, average standard	28,300 - 32,200	4,200 - 5,300	32,500 - 37,500
Detached houses, high end	41,100 up	6,100 up	47,200 up
OFFICE / COMMERCIAL			
Medium/high rise offices, average standard	17,500 - 19,600	6,000 - 7,200	23,500 - 26,800
High rise offices, prestige quality	21,750 - 24,500	6,250 - 7,700	28,000 - 32,200
Out-of-town shopping centre, average standard	17,250 - 20,350	5,950 - 6,750	23,200 - 27,100
Retail malls, high end	23,450 - 27,950	6,550 - 7,750	30,000 - 35,700

HOTELS			
Budget hotels - 3-star, mid market	22,550 - 22,800	7,150 - 8,800	29,700 - 31,600
Business hotels - 4/5-star	22,950 - 26,200	7,750 - 9,600	30,700 - 35,800
Luxury hotels - 5-star	28,050 - 31,300	7,750 - 9,600	35,800 - 40,900
INDUSTRIAL			
Owner operated factories, low rise, light weight industry	15,450 - 19,250	2,550 - 3,350	18,000 - 22,600
OTHERS			
Underground/basement car parks (<3 levels)	22,600 - 26,600	2,800 - 3,700	25,400 - 30,300
Multi storey car parks, above ground(<4 levels)	12,850 - 14,600	2,350 - 3,400	15,200 - 18,000
Schools (primary and secondary)	16,850 - 17,500	2,950 - 3,800	19,800 - 21,300
Students' residences	17,950 - 19,650	4,650 - 5,750	22,600 - 25,400
Sports clubs, multi purpose sports/leisure centres (dry sports) with a/c and including FF&E	23,700 - 26,100	5,900 - 7,600	29,600 - 33,700
General hospitals - public sector	29,300 - 30,950	8,300 - 10,550	37,600 - 41,500

The above costs are at 4th Quarter 2021 levels.

M&E COSTS FOR HONG KONG

BUILDING TYPE	HK$/m² CFA					
	MECHANICAL SERVICES	ELECTRICAL SERVICES	FIRE SERVICES	LIFTS/ ESCALATORS	HYDRAULIC SERVICES	TOTAL SERVICES
DOMESTIC						
Apartments, high rise, public authority standard	- -	600 - 700	150 - 200	300 - 350	900 - 1,100	1,950 - 2,350
Apartments, high rise, average standard	800 - 1,000	1,000 - 1,300	300 - 600	450 - 750	1,350 - 1,800	3,900 - 5,450
Apartments, high rise, high end	1,200 - 1,500	1,300 - 1,600	300 - 600	550 - 850	1,600 - 2,000	4,950 - 6,550
Terraced houses, average standard	1,200 - 1,500	1,300 - 1,600	100 - 200	- -	1,600 - 2,000	4,200 - 5,300
Detached houses, high end	2,000 up	2,200 up	100 up	- -	1,800 up	6,100 up
OFFICE / COMMERCIAL						
Medium/high rise offices, average standard	2,000 - 2,300	2,000 - 2,400	600 - 750	700 - 900	700 - 850	6,000 - 7,200
High rise offices, prestige quality	2,100 - 2,600	2,000 - 2,400	600 - 750	850 - 1,100	700 - 850	6,250 - 7,700
Out-of-town shopping centre, average standard	2,100 - 2,300	1,700 - 2,000	600 - 700	850 - 900	700 - 850	5,950 - 6,750
Retail malls, high end	2,200 - 2,600	2,200 - 2,500	600 - 750	850 - 1,000	700 - 900	6,550 - 7,750

HOTELS						
Budget hotels - 3-star, mid market	2,200 - 2,500	2,000 - 2,400	600 - 850	550 - 750	1,800 - 2,300	7,150 - 8,800
Business hotels - 4/5-star	2,400 - 2,600	2,200 - 2,600	600 - 850	550 - 850	2,000 - 2,700	7,750 - 9,600
Luxury hotels - 5-star	2,400 - 2,600	2,200 - 2,600	600 - 850	550 - 850	2,000 - 2,700	7,750 - 9,600
INDUSTRIAL						
Owner operated factories, low rise, light weight industry	300 - 450	750 - 900	450 - 600	550 - 750	500 - 650	2,550 - 3,350
OTHERS						
Underground/basement car parks (<3 levels)	800 - 950	800 - 1,000	450 - 600	350 - 450	400 - 700	2,800 - 3,700
Multi storey car parks, above ground (<4 levels)	350 - 650	800 - 1,000	450 - 600	350 - 450	400 - 700	2,350 - 3,400
Schools (primary and secondary)	750 - 950	1,000 - 1,250	450 - 550	200 - 350	550 - 700	2,950 - 3,800
Students' residences	750 - 950	1,700 - 1,900	600 - 850	200 - 350	1,400 - 1,700	4,650 - 5,750
Sports clubs, multi purpose sports/leisure centres (dry sports) with a/c and including FF&E	2,500 - 3,000	1,800 - 2,500	600 - 850	350 - 450	650 - 800	5,900 - 7,600
General hospitals - public sector	3,200 - 4,000	2,500 - 3,000	700 - 950	400 - 600	1,500 - 2,000	8,300 - 10,550

The above costs are at 4th Quarter 2021 levels.

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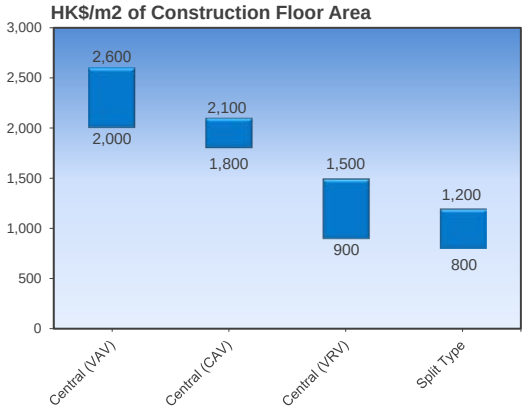
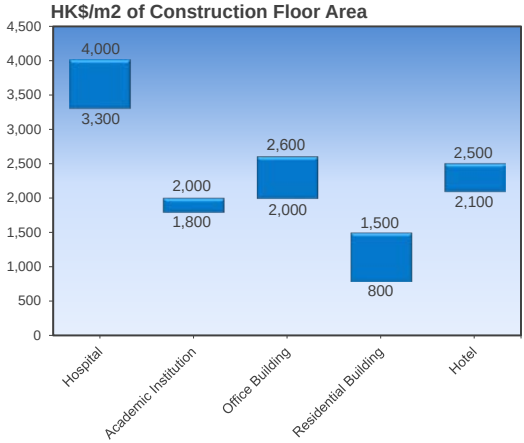
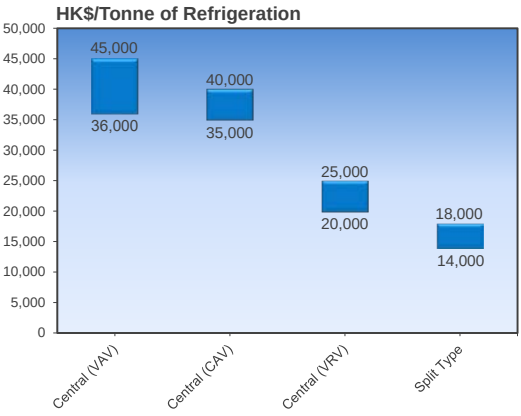
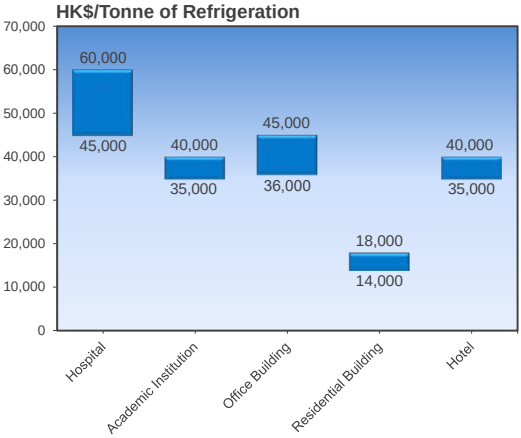
ACMV COSTS FOR VARIOUS DESIGNS AND DEVELOPMENTS IN HONG KONG






HK$/Tonne of Refrigeration
50,000
45,000
40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0
45,000
36,000
40,000
35,000
25,000
20,000
18,000
14,000
Central (VAV)
Central (CAV)
Central (VRV)
Split Type


HK$/Tonne of Refrigeration
70,000
60,000
50,000
40,000
30,000
20,000
10,000
0
60,000
45,000
40,000
35,000
45,000
36,000
18,000
14,000
40,000
35,000
Hospital
Academic Institution
Office Building
Residential Building
Hotel

FIT-OUT COSTS FOR HONG KONG

BUILDING TYPE	HK$/m²
HOTELS	
Public Areas (Front of House) :	
3-star Hotel	10,200 - 15,300
4-star Hotel	15,500 - 21,200
5-star Hotel	21,500 up
Guest Rooms :	
3-star Hotel	8,700 - 10,300
4-star Hotel	10,500 - 13,800
5-star Hotel	14,000 up
Notes : 1. *Includes furniture, floor, wall and ceiling finishes, drapery, sanitary fittings and light fittings.* 2. *Excludes partitioning, M&E works, building shell, chandeliers, operational items and equipment (e.g. cutlery, crockery, linen, television, refrigerator etc.), opening expenses, stage equipment and computer systems.*	
OFFICES	
General office	6,200 - 9,500
Executive office	9,700 - 13,300
Prestige office	13,500 up
Notes : 1. *Local/PRC furniture allowed for general offices.* 2. *Includes furniture, partitioning, electrical work, minor alteration to air-conditioning, fire services and suspended ceiling to suit layout.* 3. *Excludes telephones, data cabling, office equipment (e.g. computers, photocopiers, fax machines, UPS, etc).*	

The above costs are at 4th Quarter 2021 levels.

BUILDING TYPE	HK$/m²
DEPARTMENT STORES	
General department store	7,700 - 12,300
Prestige department store	12,500 up
Notes : 1. *Includes electrical work, additional FCU and minor alteration of fire services to suit layout.* 2. *Excludes facade modification, data cabling, operational items and equipment (e.g. computers, P.O.S., office equipment) and opening expenses.*	
RESTAURANTS	
General dining restaurant	11,500 - 19,600
Fine dining restaurant	23,000 up
Notes : 1. *Includes furniture, floor, wall and ceiling finishes, electrical work, minor alteration to air-conditioning and fire services installation to suit layout, exhaust for kitchen.* 2. *Excludes exhaust flue, operational items (e.g. cutlery, crockery, linen, utensils, etc.).*	

The costs per square meter are based on fit-out area measured to the inner face of the perimeter wall.

UNIT COSTS FOR ANCILLARY FACILITIES FOR HONG KONG

DESCRIPTION	UNIT	HK$
SQUASH COURTS		
Single court with glass backwall including associated mechanical and electrical services but excluding any public facilities (enclosing structure not included).	per court	720,000
TENNIS COURTS		
Single court on grade with acrylic surfacing and complete with chain link fence.	per court	1,550,000
Single court on grade with artificial turf surfacing and complete with chain link fence.	per court	1,750,000
Extra for lighting.	per court	620,000
SWIMMING POOLS		
Half Olympic (25m x 10.50m) outdoor swimming pool built on-grade, fully tiled; complete with 5m wide deck and associated pool equipment and ozone system.	per pool	10,300,000
PLAYGROUND EQUIPMENT		
Outdoor playground equipment comprising various activities.	per set	330,000 to 800,000

The above costs are at 4th Quarter 2021 levels.

DESCRIPTION	UNIT	HK$
SAUNAS Sauna room for 4-6 people complete with all accessories (enclosing structure not included).	per room	300,000
STEAM BATHS Steam bath for 4-6 people complete with all accessories (enclosing structure not included).	per room	300,000
GOLF COURSES (Based on average cost of an 18-hole golf course) Excluding associated buildings and equipment.	per hole	8,000,000 to 14,000,000
GREEN ROOF Proprietary lightweight green roof system; with automatic irrigation system (roofing and roof structure not included).	per m2	2,000 to 5,000
VERTICAL GREEN Vertical green system; wire frame type, with automatic irrigation system (backgorund supporting wall not included).	per m2	5,000 to 10,000

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	US$/m² CFA			
	SHANGHAI +	BEIJING +	GUANGZHOU/ SHENZHEN +	CHONGQING/ CHENGDU +
DOMESTIC				
Apartments, high rise, average standard	810 - 893	713 - 783	711 - 783	577 - 672
Apartments, high rise, high end	1,829 - 1,994	1,728 - 1,967	1,155 - 1,264	846 - 1,061
Terraced houses, average standard	1,119 - 1,219	1,021 - 1,106	1,066 - 1,236	763 - 897
Detached houses, high end	1,968 - 2,088	1,962 - 2,047	2,045 - 2,324	981 - 1,112
OFFICE / COMMERCIAL				
Medium/high rise offices, average standard	1,039 - 1,373	1,017 - 1,370	994 - 1,107	1,109 - 1,268
High rise offices, prestige quality	1,335 - 1,826	1,653 - 2,250	1,478 - 1,783	1,402 - 1,846
Out-of-town shopping centre, average standard	N/A	760 - 1,016	957 - 1,050	898 - 1,128
Retail malls, high end	1,411 - 1,902	1,375 - 1,893	1,416 - 1,980	1,336 - 1,825
HOTELS				
Budget hotels - 3-star, mid market	1,137 - 1,386	1,125 - 1,386	1,282 - 1,410	1,202 - 1,460
Business hotels - 4/5-star	1,832 - 2,480	1,917 - 2,531	2,072 - 2,958	2,154 - 2,647
Luxury hotels - 5-star	2,477 - 2,961	2,440 - 3,141	2,817 - 3,105	2,649 - 3,132

INDUSTRIAL				
Industrial units, shell only (Conventional single storey framed units)	320 - 392	314 - 383	371 - 442	550 - 680
Owner operated factories, low rise, light weight industry	495 - 620	607 - 696	N/A	N/A
OTHERS				
Underground/basement car parks (<3 levels)	849 - 1,184	869 - 955	657 -1,048	514 - 710
Multi storey car parks, above ground (<4 levels)	435 - 608	523 - 528	468 - 517	409 - 500
Schools (primary and secondary)	649 - 819	605 - 781	521 - 573	543 - 597
Students' residences	475 - 648	428 - 605	329 - 363	380 - 543
Sports clubs, multi purpose sports/leisure centres (dry sports)	1,095 - 1,345	1,036 -1,045	908 - 998	856 - 938
General hospitals - public sector	1,673 - 2,157	1,362 -1,706	1,375 -1,719	1,368 - 1,692
Exchange Rate Used : US$1 =	RMB 6.40	RMB 6.40	RMB 6.40	RMB 6.40

The above costs are at **4th Quarter 2021** levels, inclusive of preliminaries but exclusive of contingencies.

+ Schools (primary and secondary) are of public authority standard, no a/c and complete with basic external works.

(Cont'd)

ARCADIS

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES (Cont'd)

BUILDING TYPE	US$/m² CFA			
	HONG KONG £	MACAU ₮	SINGAPORE ♣	KUALA LUMPUR
DOMESTIC				
Apartments, high rise, average standard	3,030 - 3,500	2,479 - 3,032	1,665 - 1,815	320 - 635 ▸
Apartments, high rise, high end	3,930 - 4,570	3,462 - 5,290	2,555 - 3,780	725 - 1,520
Terraced houses, average standard	4,170 - 4,810	4,224 - 5,041	2,150 - 2,370	230 - 375 ▴
Detached houses, high end	6,060 up	5,152 - 6,703	2,705 - 3,630	770 - 1,060
OFFICE / COMMERCIAL				
Medium/high rise offices, average standard	3,020 - 3,440	2,853 - 3,684	2,150 - 2,370 ♦	605 - 815 ■
High rise offices, prestige quality	3,590 - 4,130	3,684 - 4,030	2,405 - 2,595 ♦	950 - 1,380 ▾
Out-of-town shopping centre, average standard	2,980 - 3,480	2,687 - 4,030	2,405 - 2,480	550 - 775
Retail malls, high end	3,850 - 4,580	4,224 - 5,097	2,555 - 2,780	705 - 1,085
HOTELS				
Budget hotels - 3-star, mid market	3,810 - 4,060	3,754 - 4,252	2,665 - 2,965	1,030 - 1,520
Business hotels - 4/5-star	3,940 - 4,600	5,097 - 6,093	3,445 - 3,850	1,350 - 2,360
Luxury hotels - 5-star	4,600 - 5,250	6,093 - 7,202	3,445 - 3,850	1,970 - 2,650

INDUSTRIAL				
Industrial units, shell only (Conventional single storey framed units)	N/A	N/A	1,000 - 1,185	330 - 470
Owner operated factories, low rise, light weight industry	2,310 - 2,900	N/A	N/A	435 - 560
OTHERS				
Underground/basement car parks (<3 levels)	3,260 - 3,890	2,229 - 3,268	1,185 - 1,595	320 - 570
Multi storey car parks, above ground (<4 levels)	1,950 - 2,310	1,232 - 1,621	850 - 1,185▼	220 - 370
Schools (primary and secondary)	2,540 - 2,730	2,465 - 2,853	N/A	255 - 330◄
Students' residences	2,900 - 3,260	1,953 - 2,271	2,000 - 2,110	305 - 390♦
Sports clubs, multi purpose sports/leisure centres (dry sports)	3,800 - 4,330	N/A	2,445 - 2,595	610 - 785
General hospitals - public sector	4,830 - 5,330	N/A	3,445 - 3,630	860 -1,255
Exchange Rate Used : US$1 =	HK$ 7.79	MOP 8.01	S$ 1.35	RM 4.15

The above costs are at **4th Quarter 2021** 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.

Ъ 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, kitchen cabinets and home appliances.

■ Offices exclude tenant fitout and raised floor.

▼ Offices exclude tenant fitout.

◄ Schools with standard governement provisions.

♦ Student hostels to university standard.

(Cont'd)

ARCADIS

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES (Cont'd)

BUILDING TYPE	US$/m² CFA				
	MANILA Ω	INDIA ₲	BANGKOK œ	HO CHI MINH &	JAKARTA *
DOMESTIC					
Apartments, high rise, average standard	1,047 - 1,384	635 - 715	714 - 846	662 - 821	852 - 965
Apartments, high rise, high end	1,427 - 2,514	955 - 1,160	952 - 1,172	842 - 965	1,173 - 1,324
Terraced houses, average standard	948 - 1,160	440 - 465	446 - 549	446 - 524	453 - 589
Detached houses, high end	1,841 - 3,123	577 - 615	774 - 935	509 - 621	1,228 - 1,372
OFFICE / COMMERCIAL					
Medium/high rise offices, average standard	968 - 1,263	490 - 550	790 - 937	774 - 895	841 - 932
High rise offices, prestige quality	1,401 - 1,791	620 - 675	988 - 1,267	892 - 1,216	1,236 - 1,383
Out-of-town shopping centre, average standard	824 - 1,026	480 - 540	674 - 873	N/A	724 - 801
Retail malls, high end	1,124 - 1,575	675 - 745	905 - 954	723 - 946	797 - 864
HOTELS					
Budget hotels - 3-star, mid market	1,229 - 1,520	895 - 990	1,234 - 1,365	1,436 - 1,757	1,462 - 1,727
Business hotels - 4/5-star	1,402 - 2,325	1,395 - 1,675	1,579 - 1,810	N/A	1,992 - 2,151
Luxury hotels - 5-star	1,939 - 3,683	1,765 - 1,955	1,842 - 2,139	1,813 - 2,175	2,113 - 2,383

INDUSTRIAL					
Industrial units, shell only (Conventional single storey framed units)	549 - 707	398 - 465	526 - 659	317 - 400	390 - 425
Owner operated factories, low rise, light weight industry	737 - 927	420 - 495	N/A	359 - 474	423 - 467
OTHERS					
Underground/basement car parks (<3 levels)	612 - 819	315 - 345	593 - 790	657 - 784	601 - 738
Multi storey car parks, above ground (<4 levels)	490 - 746	260 - 285	197 - 322	422 - 463	390 - 425
Schools (primary and secondary)	722 - 996	325 - 365	N/A	555 - 606	N/A
Students' residences	763 - 982	365 - 405	N/A	555 - 713	N/A
Sports clubs, multi purpose sports/leisure centres (dry sports)	1,216 - 1,771	660 - 700	N/A	821 - 877	1,224 - 1,835
General hospitals - public sector	1,464 - 1,712	700 - 800	N/A	N/A	N/A
Exchange Rate Used : US$1 =	PHP 50.77	INR 74.39	BAHT 33.889	VND 23,450	IDR 14,288

The above costs are at **4th Quarter 2021** 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. The data for India is provided by Arkind LS Private Limited, an Arcadis Alliance Partner.

& Rates are nett of VAT and contingencies.

œ Rates exclude VAT.

* The data for Jakarta is provided by PT Lantera Sejahtera Indonesia. Rates exclude VAT

M&E COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	SHANGHAI	BEIJING	GUANGZHOU/ SHENZHEN	CHONGQING/ CHENGDU
	RMB/m² CFA	RMB/m² CFA	RMB/m² CFA	RMB/m² CFA
MECHANICAL SERVICES				
Offices	838 - 1,055	783 - 1,212	783 - 1,162	778 - 1,050
Industrial *	185 - 310	172 - 283	157 - 288	155 - 252
Hotels	1,060 - 1,370	960 - 1,236	1,070 - 1,364	991 - 1,355
Shopping Centres	820 - 985	814 - 980	722 - 920	930 - 1,060
Apartment	336 - 440	144 - 464	154 - 414	161 - 317
ELECTRICAL SERVICES				
Offices	658 - 735	494 - 893	545 - 803	518 - 734
Industrial **	330 - 462	342 - 483	323 - 464	287 - 388
Hotels	717 - 906	755 - 1011	722 - 960	643 - 900
Shopping Centres	572 - 710	515 - 725	505 - 697	572 - 729
Apartment	277 - 403	271 - 426	288 - 505	246 - 363
HYDRAULIC SERVICES				
Offices	117 - 172	98 - 144	104 - 186	95 - 132
Industrial	94 - 136	98 - 144	90 - 125	100 - 137
Hotels	397 - 540	381 - 495	394 - 505	387 - 514

Shopping Centres	148 - 197	144 - 206	115 - 170	110 - 161
Apartment	180 - 242	175 - 236	152 - 283	108 - 189
FIRE SERVICES				
Offices	245 - 341	186 - 273	232 - 354	261 - 314
Industrial	170 - 280	155 - 232	144 - 275	147 - 253
Hotels	312 - 416	226 - 387	288 - 429	293 - 394
Shopping Centres	278 - 411	226 - 387	250 - 387	284 - 405
Apartment	60 - 110	72 - 139	79 - 204	66 - 121
LIFTS / ESCALATORS				
Offices	294 - 578	297 - 583	295 - 517	313 - 576
Industrial	142 - 410	146 - 404	150 - 440	157 - 364
Hotels	230 - 520	234 - 525	250 - 480	261 - 449
Shopping Centres	342 - 520	330 - 525	325 - 470	317 - 474
Apartment	173 - 306	177 - 292	130 - 450	146 - 253

The above costs are at **4th Quarter 2021** levels, exclusive of contingencies.

(Cont'd)

* Generally without A/C.
** Excludes special power supply.

M&E COSTS FOR SELECTED ASIAN CITIES (Cont'd)

BUILDING TYPE	HONG KONG	MACAU	SINGAPORE ♣	KUALA LUMPUR
	HK$/m² CFA	MOP/m² CFA	S$/m² CFA	RM/m² CFA
MECHANICAL SERVICES				
Offices	2,000 - 2,600	N/A	194 - 300	360 - 530
Industrial *	300 - 450	N/A	38 - 137	100 - 200
Hotels	2,200 - 2,600	2,590 - 2,990	251 - 324	345 - 640
Shopping Centres	2,100 - 2,600	2,350 - 2,940	170 - 284	340 - 510
Apartment	800 - 2,000 up	900 - 1,200	105 - 198	135 - 220
ELECTRICAL SERVICES				
Offices	2,000 - 2,400	N/A	180 - 329	330 - 495
Industrial **	750 - 900	N/A	63 - 157	170 - 205
Hotels	2,000 - 2,600	2,590 - 3,090	322 - 427	340 - 580
Shopping Centres	1,700 - 2,500	2,590 - 2,940	185 - 354	335 - 490
Apartment	1,000 - 2,200up	1,000 - 1,290	127 - 274	125 - 225
HYDRAULIC SERVICES				
Offices	700 - 850	N/A	30 - 64	50 - 75
Industrial	500 - 650	N/A	21 - 42	50 - 60
Hotels	1,800 - 2,700	1,790 - 2,190	141 - 198	200 - 290

Shopping Centres	700 - 900	600 - 790	53 - 93	40 - 45
Apartment	1,350 - 2,000	1,490 - 1,990	91 - 166	60 - 105
FIRE SERVICES				
Offices	600 - 750	N/A	36 - 80	70 - 90
Industrial	450 - 600	N/A	26 - 58	60 - 75
Hotels	600 - 850	910 - 1,120	32 - 63	70 - 105
Shopping Centres	600 - 750	610 - 810	42 - 63	65 - 85
Apartment	100 - 600	250 - 300	27 - 60	25 - 35
LIFTS / ESCALATORS				
Offices	700 - 1,100	N/A	74 - 188	150 - 375
Industrial	550 - 750	N/A	47 - 121	60 - 185
Hotels	550 - 850	610 - 810	57 - 95	120 - 310
Shopping Centres	850 - 1,000	460 - 710	65 - 104	110 - 125
Apartment	450 - 850	460 - 610	47 - 130	75 - 115

The above costs are at **4th Quarter 2021** levels, exclusive of contingencies.

(Cont'd)

* Generally without A/C.
** Excludes special power supply.
♣ Rates are nett of GST, excluding BAS.

M&E COSTS FOR SELECTED ASIAN CITIES (Cont'd)

BUILDING TYPE	MANILA Ω	INDIA ₲	BANGKOK Φ	HO CHI MINH	JAKARTA #
	PHP/m² CFA	INR/m² CFA	BAHT/m² CFA	VND/m² CFA	IDR/m² CFA
MECHANICAL SERVICES					
Offices	4,000 - 8,030	5,366 - 7,485	4,400 - 4,800	2,390,000 - 3,400,000	1,022,000- 1,177,000
Industrial *	800 - 1,600	2,520 - 4,778	1,550 - 1,600	N/A	463,000- 740,000
Hotels	3,500 - 12,350	6,216 - 7,490	4,600 - 5,200	N/A	1,054,000- 1,369,000
Shopping Centres	2,890 - 7,070	5,476 - 7,629	4,600 - 4,800	2,690,000 -3,580,000	900,000- 1,081,000
Apartment	1,390 - 4,940	2,825 - 4,029	4,300 - 4,500	1,790,000 -2,460,000	1,006,000- 1,278,000
ELECTRICAL SERVICES					
Offices	3,500 - 8,140	4,851 - 7,415	3,400 - 3,800	2,470,000 -2,960,000	826,000- 1,054,000
Industrial **	2,000 - 3,500	2,856 - 5,270	1,950 - 2,200	N/A	585,000- 729,000
Hotels	4,900 - 10,200	5,381 - 8,159	3,800 - 4,500	N/A	851,000- 1,172,000
Shopping Centres	3,060 - 6,600	4,625 - 6,880	2,800 - 3,200	2,240,000 -2,800,000	719,000- 905,000
Apartment	3,600 - 6,300	2,447 - 3,563	2,800 - 3,400	2,170,000 -2,740,000	948,000- 1,107,000
HYDRAULIC SERVICES					
Offices	1,260 - 2,260	840 - 1,439	780 - 950	380,000 - 710,000	208,000- 293,000
Industrial	820 - 1,440	578 - 1,124	750 - 790	N/A	138,000- 213,000
Hotels	2,310 - 7,010	4,421 - 7,394	1,400 - 1,750	N/A	995,000- 1,172,000

Shopping Centres	1,250 - 1,650	1,260 - 2,531	790 - 950	310,000 - 560,000	197,000 - 304,000
Apartment	2,310 - 4,210	1,995 - 3,066	1,200 - 1,450	740,000 - 860,000	1,006,000 - 1,192,000
FIRE SERVICES					
Offices	1,180 - 2,070	1,355 - 1,963	780 - 850	735,000 - 1,210,000	283,000 - 373,000
Industrial	1,080 - 3,000	620 - 947	730 - 750	N/A	149,000 - 213,000
Hotels	1,320 - 2,630	1,575 - 2,236	780 - 890	N/A	330,000 - 410,000
Shopping Centres	1,310 - 2,080	1,297 - 1,664	780 - 850	670,000 - 820,000	277,000 - 324,000
Apartment	1,140 - 1,550	725 - 958	750 - 890	580,000 - 720,000	314,000 - 341,000
LIFTS / ESCALATORS					
Offices	1,800 - 4,930	1,071 - 1,434	1,100 - 1,400	730,000 - 1,400,000	441,000 - 1,059,000
Industrial	0 - 730	714 - 942	N/A	N/A	N/A
Hotels	1,800 - 3,500	1,607 - 2,381	1,100 - 1,400	N/A	703,000 - 1,097,000
Shopping Centres	1,600 - 3,010	1,880 - 2,450	300 - 500	1,500,000 - 2,100,000	324,000 - 873,000
Apartment	850 - 3,440	966 - 1,284	600 - 800	820,000 - 1,200,000	714,000 - 889,000

The above costs are at **4th Quarter 2021** levels, exclusive of contingencies.

(Cont'd)

* Generally without A/C.

** Excludes special power supply.

Ω Transformer, included in Electrical Services.

Φ Based upon nett enclosed area and nett of VAT.

\# The data for Jakarta is provided by PT Lantera Sejahtera Indonesia.
Rates exclude VAT

₲ Rates are based on projects in Bangalore and are nett of GST. Mumbai costs are generally 8% higher.
The data for India is provided by Arkind LS Private Limited, an Arcadis Alliance Partner

MAJOR RATES FOR SELECTED ASIAN CITIES

DESCRIPTION	UNIT	SHANGHAI	BEIJING	GUANGZHOU/ SHENZHEN	CHONGQING/ CHENGDU
		RMB	RMB	RMB	RMB
1. Excavating basement ≤ 2.00m deep	m^3	30	35	40	35
2. Excavating for footings ≤ 1.50m deep	m^3	30	40	40	35
3. Remove excavated materials off site	m^3	160	160	150	65
4. Hardcore bed blinded with fine materials	m^3	210	220	210	180
5. Mass concrete grade 15	m^3	800	750	740	580
6. Reinforced concrete grade 30	m^3	850	850	800	610
7. Mild steel rod reinforcement	kg	6.5	7.6	7.5	6.2
8. High tensile rod reinforcement	kg	6.5	7.6	7.5	6.2
9. Sawn formwork to soffits of suspended slabs	m^2	95	90	90	75
10. Sawn formwork to columns and walls	m^2	90	85	85	75
11. 112.5mm thick brick walls	m^2	105**	80	100	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	780	850*	700	800*
14. Structural steelwork - beams, stanchions and the like	kg	11	14.5	14	10
15. Steelwork - angles, channels, flats and the like	kg	9.5	13	12	9
16. 25mm cement and sand (1:3) paving	m^2	36	34	36	35
17. 20mm cement and sand (1:4) plaster to walls	m^2	36	34	36	35
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	160	155	155	150
19. 12mm fibrous plasterboard ceiling lining	m^2	160	162	165	150
20. Two coats of emulsion paint to plastered surfaces	m^2	42	34	35	35
Average expected preliminaries	%	6 - 12	5 - 12	7 - 10	6 - 12

The above costs are at **4th Quarter 2021** levels and are based on lump sum fixed price contract rates exclusive of preliminaries and contingencies.

(Cont'd)

* Rate for double glazed window.

** Rate for 120mm thick concrete block walls

MAJOR RATES FOR SELECTED ASIAN CITIES (Cont'd)

DESCRIPTION	UNIT	HONG KONG	MACAU	SINGAPORE ♣	KUALA LUMPUR
		HK$	MOP	S$	RM
1. Excavating basement ≤ 2.00m deep	m^3	220	150	26	16 - 27
2. Excavating for footings ≤ 1.50m deep	m^3	200	180	26	16 - 27
3. Remove excavated materials off site	m^3	290 ♂	150	20 - 26	18 - 35
4. Hardcore bed blinded with fine materials	m^3	940	1,300	63	72 - 110
5. Mass concrete grade 15	m^3	1,150	1,500	235 - 248 ♣♣	230 - 300
6. Reinforced concrete grade 30	m^3	1,250	1,400	159 - 165	250 - 310
7. Mild steel rod reinforcement	kg	12	7.5	1.95 - 2.05	4.0 - 5.5
8. High tensile rod reinforcement	kg	12	7.5	1.95 - 2.05	4.0 - 5.5
9. Sawn formwork to soffits of suspended slabs	m^2	400	280	51	40 - 50
10. Sawn formwork to columns and walls	m^2	400	280	51	40 - 50
11. 112.5mm thick brick walls	m^2	400	450	41.5 - 47.0	43 - 52
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m^2	1,100	N/A	50.5	72 - 100

13. Aluminium casement windows, single glazed	m^2	4,000	4,000	340	390 - 680
14. Structural steelwork - beams, stanchions and the like	kg	37	30	6.0 - 6.7	7.2 - 11
15. Steelwork - angles, channels, flats and the like	kg	45	40	6.0 - 6.7	7.2 - 11
16. 25mm cement and sand (1:3) paving	m^2	155	120	25	18 - 27
17. 20mm cement and sand (1:4) plaster to walls	m^2	160	150	26	19 - 30
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	400	450	85	60 - 100
19. 12mm fibrous plasterboard ceiling lining	m^2	570	650	35.5	36 - 50
20. Two coats of emulsion paint to plastered surfaces	m^2	120	200	4.1 - 4.7	3.5 - 5.5
Average expected preliminaries	%	10 - 15	10	14 - 18	6 - 15

The above costs are at **4th Quarter 2021** levels and are based on lump sum fixed price contract rates exclusive of preliminaries and contingencies.

♣ Rates are nett of GST.

♣♣ Rate for lean concrete blinding.

δ Rate including dumping charges.

(Cont'd)

ARCADIS

MAJOR RATES FOR SELECTED ASIAN CITIES (Cont'd)

DESCRIPTION	UNIT	MANILA	INDIA[G]	BANGKOK[œ]	HO CHI MINH[#]	JAKARTA[@]
		PHP	INR	BAHT	VND	IDR
1. Excavating basement ≤ 2.00m deep	m^3	300	255	120 - 150	72,400	70,000
2. Excavating for footings ≤ 1.50m deep	m^3	538	235	140 - 180	72,400	105,000
3. Remove excavated materials off site	m^3	350	N/A	120 - 150	84,700	50,000
4. Hardcore bed blinded with fine materials	m^3	1,400 - 1,600	4,800 - 5,000	650 - 750	280,900	680,000
5. Mass concrete grade 15	m^3	4,500	6,735	2,300 - 2,500	1,606,400	1,100,000
6. Reinforced concrete grade 30	m^3	6,300	8,430	2,800 - 3,200	1,912,291	1,140,000
7. Mild steel rod reinforcement	kg	63 - 65	75	25 - 28	23,480	14,300
8. High tensile rod reinforcement	kg	64 - 67	68 - 71	25 - 28	23,480	14,500
9. Sawn formwork to soffits of suspended slabs	m^2	950 - 1,200	700 - 750	450 - 500	235,000	250,000
10. Sawn formwork to columns and walls	m^2	1,200	780 - 825	450 - 500	280,000	200,000
11. 112.5mm thick brick walls	m^2	N/A	1,240 - 1,250	650 - 850	312,780	250,000
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m^2	1,500	1,900 - 1,950	1,200	480,000 - 680,000	350,000

13. Aluminium casement windows, single glazed	m^2	12,500 Ω	6,500 - 6,790	7,200	6,630,750	1,650,000
14. Structural steelwork - beams, stanchions and the like	kg	180	145	55 - 70	53,515	33,000
15. Steelwork - angles, channels, flats and the like	kg	160	145	55 - 70	53,515	33,000
16. 25mm cement and sand (1:3) paving	m^2	650	500 - 550	200 - 260	94,000	90,000
17. 20mm cement and sand (1:4) plaster to walls	m^2	500 - 700	400 - 450	220 - 280	144,000	100,000
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	1,800	1,800 - 1,925	1,200	674,180	200,000
19. 12mm fibrous plasterboard ceiling lining	m^2	1,400 - 1,700	1,450 - 1,550	750 -850	255,700	215,000
20. Two coats of emulsion paint to plastered surfaces	m^2	500 - 800	220 - 250	140 -180	96,000	35,000
Average expected preliminaries	%	12 - 18	9 - 13	12 -18	8 - 12	8 - 10

The above costs are at **4th Quarter 2021** 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.

The data for India is provided by Arkind LS Private Limited, an Arcadis Alliance Partner.

œ Rates are nett of VAT.

Rates are nett of VAT.

@ The data for Jakarta is provided by PT Lantera Sejahtera Indonesia.
Rates exclude VAT.

CONSTRUCTION COST SPECIFICATION

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) Including interior decoration, furniture (fixed and movable), and special light fittings (chandeliers, etc.) 2) Excluding Operating Supplies and Equipment (OS&E).
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)

CONSTRUCTION COST SPECIFICATION (Cont'd)

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 equipment
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. The costs include foundation and substructure.

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

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

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

GENERAL CONSTRUCTION DATA 2

2022 OUTLOOK

CHINA

In the first three quarters of 2021, China's GDP growth was (+)9.8% YoY, and the quarterly GDP growths of Q1 to Q3 were (+)11.8%, (+)7.9% and (+)4.9% respectively. The declining growth rate matched the significant GDP drop caused by the lock down period of COVID-19 in Q1 2020 and the rebound in the following quarters. Vaccine rollouts across China and government anti-epidemic measures provided some relief about the pandemic and well controlled the threat to the people and economy. However, the worldwide rapid spread of Delta and Omicron variants have increased the uncertainty of risks. COVID-19 outbreaks in certain areas of China are still occurring. In October 2021, the IMF (International Money Fund) announced that the China 2021 GDP was forecast to be 8.0%.

Up to November 2021, real estate investment and the sales of commercial buildings reached an increase of (+)6.0% and (+)8.5% respectively, while the area of land sale decreased by (-)11.2% YoY. The completed construction areas and new commencement areas increased by (+)6.3% and decreased by (-)9.1% respectively (according to National Bureau of Statistics (NBS)). Land sales area has been in continuing decline for three consecutive years, and the construction output is anticipated to reduce accordingly.

In Q2 2021, the Ministry of Natural Resources initiated a new centralized land sale policy, which aims to limit the land auctions to three times in a year while raising supply for bidding at each auction in 22 key cities, including Beijing, Shanghai and Shenzhen. It further raised the financial threshold of real estate markets since the tightened funding policy– dubbed "the three red lines", released in Q3 2020.

On another hand, China announced that it would aim to achieve peak CO2 emissions before 2030 and carbon neutrality before 2060. In October 2021, the Central Committee of the Communist Party of China and the State Council released a guideline to implement the carbon peak and neutrality under the new development philosophy. The guideline stressed upgrading the industrial structure, including promoting green agriculture, and advancing peak carbon in steel, non-ferrous metals, petrochemical, building materials, transportation, construction, and other industries. This could further increase building construction costs.

The construction wages have an increase of (+)3%-(+)4% in different cities of mainland China. Basic construction product costs fluctuated in price with rebar (+) 15%, steel (+)15%, concrete (+)6%, cement (+) 26%, copper (+)20%, aluminium (+)17% YoY. Tender prices recorded an increase of (+)5.5% in 2021.

The growth of construction wages is anticipated to be (+)4% and above in the coming year. Moreover, due to the advancing peak carbon emission in construction materials, we anticipate that major materials will rise in price. We anticipate that construction costs will increase by 3% in 2022 and 2023.

(Cont'd)

2022 OUTLOOK

HONG KONG

The economic and construction activities recovered from the adverse effects of the global COVID-19 pandemic in 2021. After the trough in the previous year, the Gross Domestic Product (GDP) grew by 8% and 7.6% in Q1 and Q2 2021and moderated with 5.4% growth YoY based on Q3 2021. Deflation in the second-half of 2020 ended in January 2021 whilst the Consumer Price Index (CPI) reached the peak of (+)3.7% YoY in July 2021 and recorded (+)1.8% YoY in November 2021.

Construction activity in the private and public sectors

Construction activity levels in Hong Kong had been recovering in 2021. The overall gross value of work performed rose by 2.4% YoY based on Q3 2021. Regarding the private sector, the gross value of performed private works increased by 7.4% YoY. The limited operation of the government departments had led to low consent approval to commence private construction works in the previous year. Consequently, commencement and completion of private construction works dropped by 24.4% and 1.5% respectively based on the past 12 months up to October 2021.

Gross value of performed public works increased by 4.3% YoY based on Q3 2021. Upto the third quarter of financial year of 2021/22, the Hong Kong Legislative Council approved HK$129 billion Capital Works Reserve Fund for proposed public works, which is 31% more than the approved fund in the same period last year. The proposals include large scale development projects such as the Chinese Medicine Hospital at Tseung Kwan O, the New Acute Hospital at Kai Tak, and the Expansion of North District Hospital, which are commencing in 2021/22.

Housing and land supply

Pursuant to the Policy Address 2021, the government has identified 350 hectares of land to provide 330,000 public housing units in the coming 10-year period, slightly higher than the figure announced in the last year, i.e. 301,000 units. Nonetheless, it is anticipated by the government that only one-third of the expected provision of public housing units would be completed in the first five years. It is challenging to target achieving the plan by completing the remaining two-third of expected provision of public housing units within another five years. In order to accelerate the construction of housing, the Policy Address 2021 mentioned the intention to widely adopt Modular Integrated Construction (MiC)

and other innovative construction technology by the Housing Authority and the Housing Society.

For private housing, the expected provision in the coming 10-year period is 100,000 units, which is fewer than the announced figure of last year, i.e. 129,000 units. Railway property development and land sales are expected to continue to be the main source of private housing supply in the coming years.

Cost of materials and labour

The Tender Price Index (TPI) increased by 2.3% YoY based on Q4 2021. The price of steel continued to soar throughout 2021 and increased significantly by 65% YoY based on the period between August and October 2021. Meanwhile, the price of diesel fuel also notably rose by 14% YoY. Prices of cement, sand and basic materials rose less significantly in the same period.

The construction labour wages remained stable in 2021. Wages of welders, plumbers, painters and general workers marginally increased while wages of concretors and carpenters dropped. In October 2021, the Hong Kong Construction Industry Employees General Union announced that it was maintaining a salary freeze for the third consecutive year.

Looking forward

Looking ahead to 2022, Arcadis is cautiously optimistic about the construction activity level in both private and public sectors because of the good signs in 2021, which include risen consent to commence building works in the private sector, increased approved fundings for public works, and the government's strive for more public and private housing supply, whilst being mindful of the potential threat of suspension or delay of construction works again as a new wave of the pandemic is spreading around the globe. With all these in mind, it is anticipated that the construction costs will rise by 3% in 2022 and 1.5% in 2023.

2022 OUTLOOK

MACAU

In the first half of 2021, the economy of Macao displayed signs of improvement. Growth was recorded with respect to services exports, goods exports, private consumption expenditure and gross fixed capital formation. As reported by the Macao Government Economic Bureau, the Gross Domestic Product (GDP) for the first half of the year was MOP 116.15 billion, with a real growth of 25.7%. Inbound visitors from the Mainland continued to grow in the first half of 2021, leading to a growth of services exports of 90.7% YoY.

The hotel sector was spurred by the reactivation of visitor arrivals. The total number of hotels as at the end of June 2021 was 78, having increased by 1 number YoY, providing a total of 34,000 guest rooms. Among them, 32 number of the hotels are five-star hotels, providing 21,000 guest rooms. The occupancy rate for 5-star hotels was 49.5%, increased by 26.8% YoY. Gaming services is also on the track of recovery, with gross gaming revenue increased by 45.5% YoY to MOP 49.39 billion.

The unemployment rate was 2.9%, which has increased by 0.4 percentage point YoY, with under-employment rate up 0.1 percentage point YoY to 3.5%.

Looking into the construction industry in 2021, it was the Government projects that have mainly driven the construction market in Macao, particularly the public housing projects and civil engineering projects. Due to the impact of COVID-19 and the economic turndown, investment appears to be conservative and a number of Hotel and Gaming Alteration and Additions (A&A) projects have been slowed-down or suspended.

According to DSEC (Macao Statistics and Census Service), the overall price of construction materials has increased by 10 % YoY as of 3rd Quarter 2021, while the construction worker's wages has increased by 4.3 % YoY as of Q3 2021. The increase in construction materials prices is mainly driven by the increase in supply prices for steel, concrete and sand.

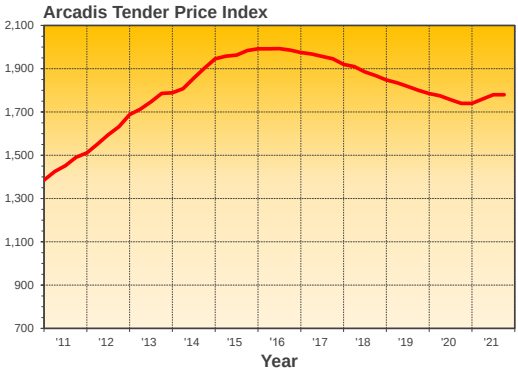
Looking forward to 2022, the challenges facing Macao will be multi-factor including the uncertainty in the time frame for the tourism industry recovery and the relieving of travel restriction due to the continuous continuing impact of the COVID-19 pandemic, the uncertainty on the renewal of Gaming licenses by the Macao Government, China-US economic tensions and the slowdown in China's economic growth.

Notwithstanding the above, the Chinese Central Authorities' plan for building the Guangdong-Macao in-depth cooperation zone in Hengqin give rise to a positive impact to Macao. This will facilitate Macao's better integration into the development of the Guangdong-Hong Kong-Macao Greater Bay Area, which can provide abundant job opportunities and a broader platform for the economic and social cooperation between Guangdong and Macao.

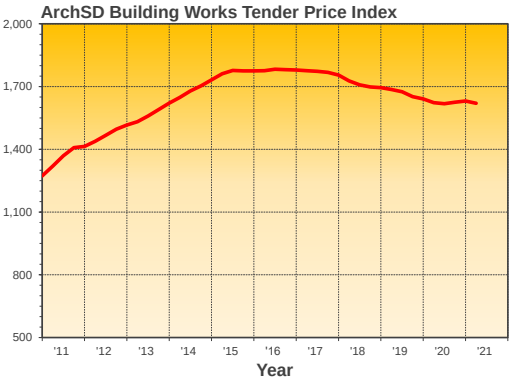
As it is anticipated that the impact of the COVID-19 pandemic on the economy will not be totally diminished in the coming one or two years and taking into account the above multiple factors, we anticipate that the construction costs will slightly increase by 0.5% in 2022 and 1.5 % in 2023 respectively.

CONSTRUCTION COST TREND PREDICTION			
REGION	**2021**	**2022**	**2023**
China	(+)5.5%	(+)3%	(+)3%
Hong Kong	(+)2.3%	(+)3%	(+)1.5%
Macau	(-)2%	(+)0.5%	(+)1.5%

BUILDING COST TRENDS IN HONG KONG



YEAR	INDEX (Base = 100, at Year 1970)			
	Q1	Q2	Q3	Q4
2011	1,385	1,425	1,452	1,491
2012	1,511	1,552	1,595	1,632
2013	1,688	1,713	1,747	1,786
2014	1,789	1,808	1,857	1,903
2015	1,946	1,958	1,963	1,984
2016	1,992	1,992	1,993	1,986
2017	1,975	1,968	1,957	1,946
2018	1,920	1,910	1,885	1,868
2019	1,848	1,835	1,818	1,800
2020	1,785	1,775	1,757	1,740
2021	1,740	1,760	1,780	1,780



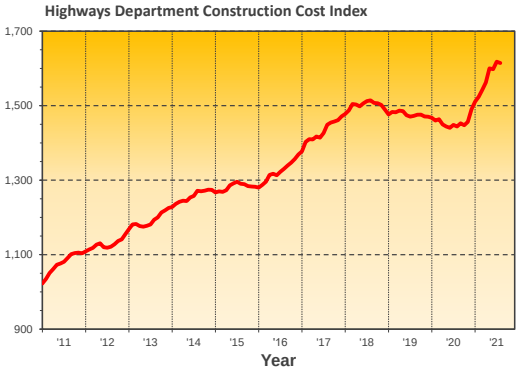
YEAR	INDEX (Base = 100, at Year 1970)			
	Q1	Q2	Q3	Q4
2011	1,273	1,320	1,369	1,408
2012	1,414	1,438	1,467	1,496
2013	1,516	1,532	1,559	1,590
2014	1,621	1,648	1,679	1,703
2015	1,732	1,761	1,777	1,775
2016	1,775	1,776	1,783	1,781
2017	1,779	1,776	1,773	1,768
2018	1,755	1,727	1,708	1,698
2019	1,695	1,686	1,675	1,652
2020	1,641	1,623	1,618	1,625
2021*	1,631	1,620		

* Up to Q2 only

Source: Architectural Services Department, Hong Kong, SAR
Refer to www.archsd.gov.hk for further information.

(Cont'd)

BUILDING COST TRENDS IN HONG KONG

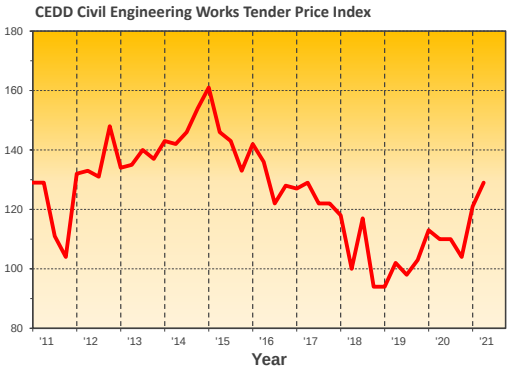


YEAR	HyD CONST. COST INDEX (Nov. 1975 Value = 100)
2011	1,075
2012	1,127
2013	1,191
2014	1,256
2015	1,282
2016	1,323
2017	1,429
2018	1,501
2019	1,477
2020	1,455
2021*	1,571

* 1/21 to 8/21 only

Source: Civil Engineering and Development Department, Hong Kong, SAR Refer to www.cedd.gov.hk/eng/publications/standards-spec-handbooks-cost/index.html for further information.

BUILDING COST TRENDS IN HONG KONG



YEAR	CEDD CIVIL ENGINEERING WORKS TENDER PRICE INDEX (2010 Q1 = 100)			
	Q1	Q2	Q3	Q4
2011	129	129	111	104
2012	132	133	131	148
2013	134	135	140	137
2014	143	142	146	154
2015	161	146	143	133
2016	142	136	122	128
2017	127	129	122	122
2018	118	100	117	94
2019	94	102	98	103
2020	113	110	110	104
2021*	121	129#		

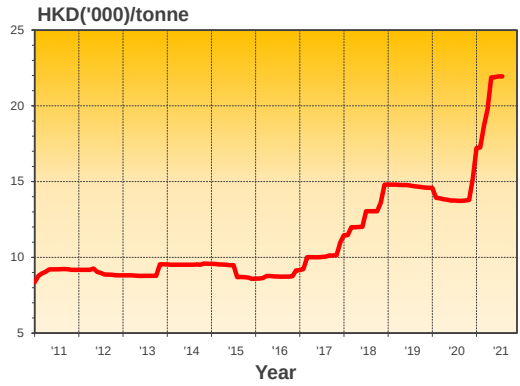
* up to Q2 only

Provisional

Source: Civil Engineering and Development Department, Hong Kong, SAR Refer to www.cedd.gov.hk/eng/publications/standards-spec-handbooks-cost/index.html for further information.

MATERIAL PRICES IN HONG KONG

GALVANIZED MILD STEEL PLATE

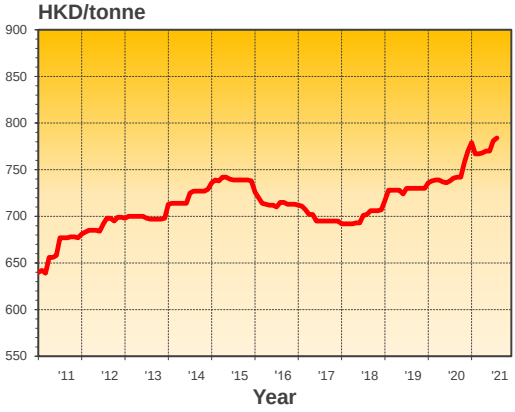


REBAR

Source: Census and Statistics Department, Hong Kong, SAR
Refer to www.censtatd.gov.hk for further information.

SAND

ORDINARY PORTLAND CEMENT



Source: Census and Statistics Department, Hong Kong, SAR
Refer to www.censtatd.gov.hk for further information.

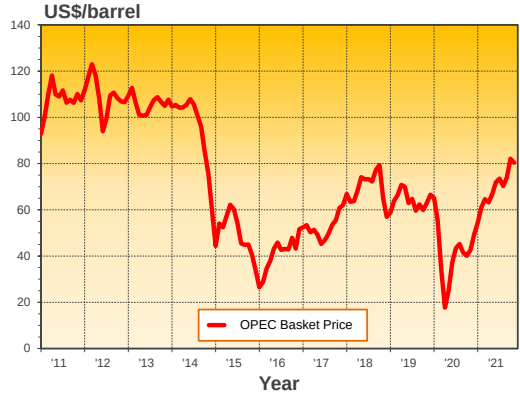
(Cont'd)

MATERIAL PRICES IN HONG KONG

COPPER GRADE A

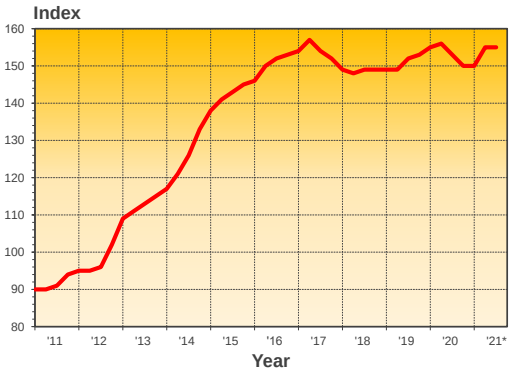
Source: International Monetary Fund
Refer to www.imf.org for further information.

CRUDE OIL



Source: Organization of the Petroleum Exporting Countries (OPEC)
Refer to www.opec.org for further information.

LABOUR INDEX IN HONG KONG



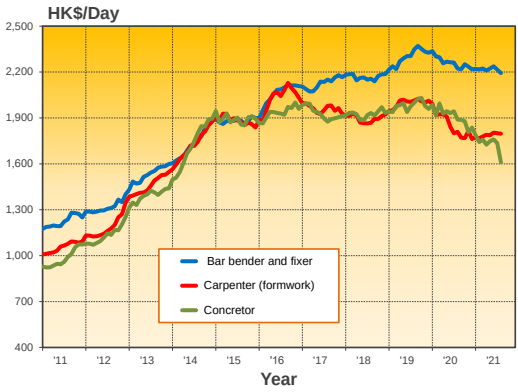
YEAR	INDEX (Base = 100, at April 2003)			
	Q1	Q2	Q3	Q4
2011	90	90	91	94
2012	95	95	96	102
2013	109	111	113	115
2014	117	121	126	133
2015	138	141	143	145
2016	146	150	152	153
2017	154	157	154	152
2018	149	148	149	149
2019	149	149	152	153
2020	155	156	153	150
2021*	150	155	155	

*Figures above are the quarterly average of the monthly indices * 1/21 to 9/21 only*

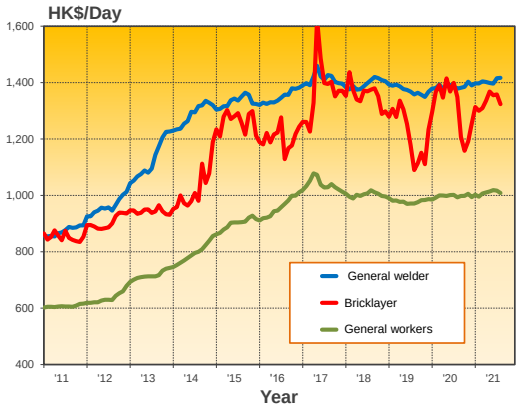
Source: Census and Statistics Department, Hong Kong, SAR
Refer to www.censtatd.gov.hk for further information.

LABOUR WAGES IN HONG KONG

STRUCTURAL

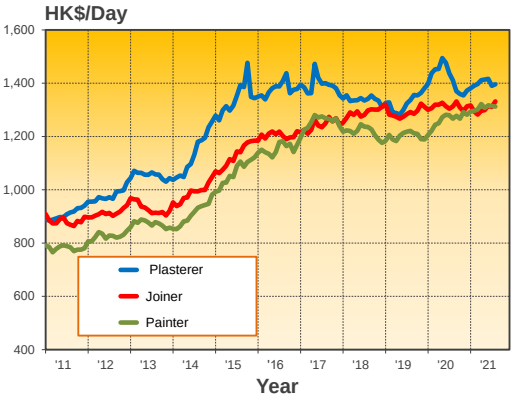


ARCHITECTURAL - BASIC WORKS

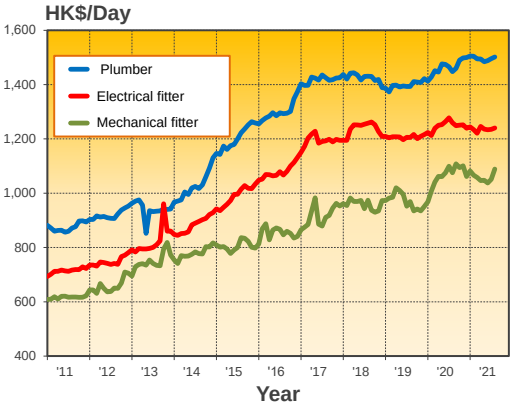


Source: Census and Statistics Department, Hong Kong, SAR
Refer to www.censtatd.gov.hk for further information.

ARCHITECTURAL - DECORATIVE WORKS



M&E



Source: Census and Statistics Department, Hong Kong, SAR
Refer to www.censtatd.gov.hk for further information.

(Cont'd)

ESTIMATING RULES OF THUMB AND DESIGN NORMS

HONG KONG

CFA To GFA Ratio

Building Type	CFA : GFA
Residential	1.15 to 1.25 : 1
Office / Commercial	1.15 to 1.25 : 1
Hotel	1.30 to 1.45 : 1

The above ratios do not include any associated car parking area.

Functional Area Distribution in 5-Star Hotels

Functional Area	% of Total Hotel CFA
Front of House	15 - 20%
Guestroom Floors	50 - 60%
Back of House	25 - 30%

Dimensions of Typical Grade A Office Space

Component	Dimension
Distance from curtain wall to core wall	9 - 13 m
Population	9 m^2 usable floor area/person
Average waiting interval for lifts	30 - 40 seconds

Density of Basic Materials for Structure

Material	Density
Concrete	2,400 kg/m^3
Cement	1,450 kg/m^3
Sand	1,600 kg/m^3
Aggregate	1,600 kg/m^3
Steel	7,843 kg/m^3

Average Loads Volume

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

HONG KONG (Cont'd)

Average Piling Ratio - Bored Piles

Building Type	m^2 CFA / m^2 cross section area of piles
Residential	200 - 330
Office / Commercial	200 - 300
Hotel	200 - 330

Average Piling Ratio - Driven H-Piles

Building Type	m^2 CFA / No. of piles
Residential	60 - 120
Office / Commercial	60 - 110
Hotel	60 - 120

Average Piling Ratio - Pre-Bored H-Piles

Building Type	m^2 CFA / No. of piles
Residential	70 - 150
Office / Commercial	70 - 140
Hotel	70 - 150

All pile ratios are for high-rise buildings with normal soil conditions.

Building Structure - Concrete Ratio

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	1.2 m^2/m^2
Office, Hotel	0.4 m^2/m^2
Industrial	0.4 m^2/m^2

(Cont'd)

ESTIMATING RULES OF THUMB AND DESIGN NORMS

HONG KONG (Cont'd)

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

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

Average Lighting Level

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

Average Power Density

Building Type	VA/m^2 CFA
Residential	80 - 100
Office	70
Retail	300 - 400
Hotel - Accommodation	30
Hotel - F&B Area	550
School	50

Average Cooling Load

Building Type	m^2 Cooling Area/RT
Residential	18 - 23
Office	14 - 18
Retail	12-14
Hotel	23
School	23

HONG KONG (Cont'd)

Dimensions of Parking Spaces

Type of Vehicle	Length	Width	Minimum Headroom
Private Cars and Taxis	5 m	2.5 m	2.4 m
Light Goods Vehicles	7 m	3.5 m	3.6 m
Medium/Heavy Goods Vehicle	11 m	3.5 m	4.7 m
Container Vehicles	16 m	3.5 m	4.7 m
Coaches and Buses	12 m	3.5 m	3.8 m
Light buses	8 m	3 m	3.3 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.

Indicative Dimensions for Sports Grounds

	Length	Width
Tennis Court	40 m	20 m
Squash Court	10 m	6.4 m
Basketball Court	34 m	20 m
Volleyball Court	36 m	20 m
Badminton Court	20 m	10 m
Ice Rink	61 m	26 m
Soccer Pitch	120 m	90 m

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

(Cont'd)

ESTIMATING RULES OF THUMB AND DESIGN NORMS

CHINA & HONG KONG

Minimum Imposed Loads (kPa) for Building Design

Building Type	China@	Hong Kong*
DOMESTIC		
Apartments	2.0	2.0
OFFICE / COMMERCIAL		
Office	2.0	3.0
Shopping Arcade	3.5	5.0
HOTELS		
Hotel	2.0	2.0
INDUSTRIAL		
Industrial, light duty	4.0	5.0
OTHERS		
Carpark, private cars	2.5	3.0
School	2.5	3.0
Theatre, Sports Hall, etc.	4.0	5.0
Hospital	2.0	2.5

Source :

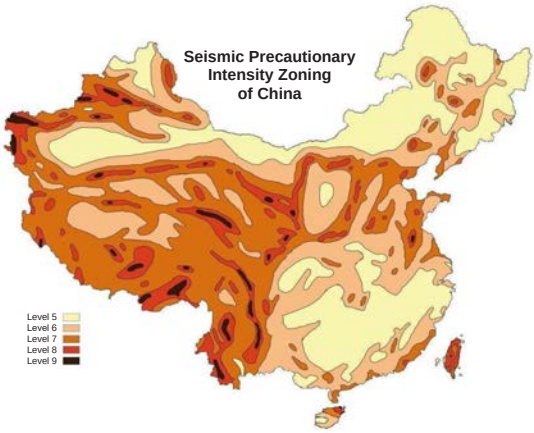
@ *Load Code for the Design of Building Structures, GB 50009-2012, Ministry of Housing and Urban-Rural Development, PRC*

* *Code of Practice for Dead and Imposed Loads 2011, Buildings Department, HKSAR*

CHINA

Seismic Precautionary Intensity Zoning

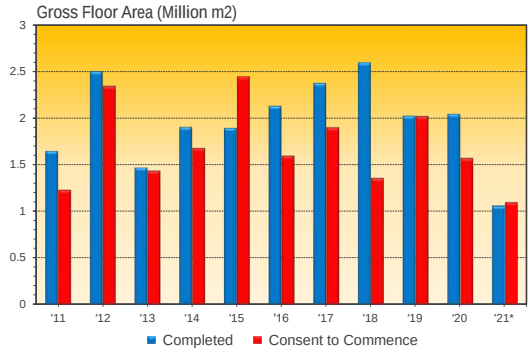
As stipulated in PRC National Standard GB 50011-2010 (Code for Seismic Design of Buildings) 2016, geographic regions which are classified as Level 6 or above in Seismic Precautionary Intensity Classification should incorporate seismic measures in the design of the structure and foundations.



Geographic Regions	Intensity Level	Geographic Regions	Intensity Level
Beijing	7 - 8	Hong Kong	7
Changsha	6	Macau	7
Chengdu	7 - 8	Qingdao	6 - 7
Chongqing	6 - 7	Shanghai	7
Dalian	6 - 8	Shenyang	7
Foshan	7	Shenzhen	6 - 7
Guangzhou	6 - 7	Suzhou	6 - 7
Haikou	8	Tianjin	7 - 8
Hangzhou	6 - 7	Wuhan	6 - 7
Hengqin	7	Xi'an	8

Source : China Earthquake Data Center (data.earthquake.cn)

CONSTRUCTION ACTIVITY IN HONG KONG

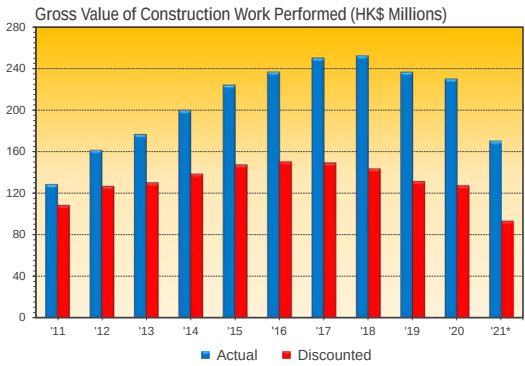


YEAR	COMPLETED m^2	CONSENT TO COMMENCE $m^{2\#}$
2011	1,650,000	1,232,000
2012	2,507,000	2,343,000
2013	1,472,000	1,437,000
2014	1,908,000	1,679,000
2015	1,897,000	2,445,000
2016	2,134,000	1,597,000
2017	2,379,000	1,900,000
2018	2,600,000	1,358,000
2019	2,028,000	2,020,000
2020	2,048,000	1,572,000
2021*	1,066,000	1,101,000

***** 1/21 to 8/21 only
\# First Submission only

Source: Census and Statistics Department, Hong Kong, SAR
Buildings Department, Hong Kong , SAR
Refer to www.censtatd.gov.hk and www.bd.gov.hk for further information.

CONSTRUCTION VALUE IN HONG KONG



YEAR	VALUE IN NOMINAL TERMS HK$ MILLIONS	VALUE IN CONSTANT (2000) MARKET PRICE HK$ MILLIONS
2011	128,535	108,263
2012	161,449	126,414
2013	176,575	129,868
2014	199,737	138,285
2015	223,947	146,978
2016	236,491	149,973
2017	249,919	148,943
2018	252,176	143,136
2019	236,437	131,111
2020	229,869	127,146
2021*	170,242	93,134

***** Up to Q3 figures and are provisional only

Source: Census and Statistics Department, Hong Kong, SAR
Refer to www.censtatd.gov.hk for further information.

HONG KONG GENERAL CONSTRUCTION INSURANCE

This section provides general information regarding construction insurance arrangements in Hong Kong.

It is common place for Hong Kong construction contracts to contain provisions as to insurances such as Employees Compensation Insurance, Third Party Liability Insurance, Works Insurance and, on occasion, Professional Liability Indemnity Insurance. For employers, the insurance placement ensures that the contractual indemnities are backed by a financial institution that can afford to pay. For contractors, it provides a certain degree of protection to ensure that he has the means to pay in the event of mishaps.

The insurances may be effected by the contractor (Contractor Controlled Insurance Programme or CCIP) or be taken out by the employer (Employer Controlled Insurance Programme or ECIP). CCIP tends to be the most common insurance arrangement in Hong Kong, since the contractor is in control of all site operations and in a better position to manage its own site safety / risk. As a poor safety record will count against the contractor in premiums negotiation in the procurement of insurance, CCIP provides an incentive for better safety / risk management. On the other hand, ECIP placement leaves the control of the insurance programme in the hands of the employer, thereby offering the advantage of providing comprehensive insurance coverage on a project-wide basis and hence minimizing overlaps and gaps in insurance coverage.

Employees Compensation

Section 40(1) of the Employees Compensation Ordinance states that no employer shall employ any employee unless there is a policy of Employees Compensation Insurance in place. The maximum penalty for failing to comply with this provision is two years in jail and a maximum fine of HK$100,000.

Under the Ordinance, the principal contractor shall take out insurance for his employees and all of the employees of subcontractors with a limit of indemnity of HK$200 million per event (or HK$100 million if the number of employees is less than 200).

Since an injured worker could attempt to sue the employer, the employer will want to ensure the contractor has taken out insurance in joint names with the employer.

Contractors' All Risks Insurance

A Contractors' All Risks policy generally comprises (i) Third Party Insurance which covers injury to persons (except the Contractor's own workmen) or damage to property (other than the Works), due to the carrying out of the Works which may or may not be caused by a default of the contractor. The policy is normally subject to a maximum reimbursement per incident but unlimited in the number of incidents, (ii) Contract Works Insurance which covers damage caused to the Works itself by risks not excluded from the policy and (iii) Plant & Equipment Insurance which covers the contractor's plant and equipment used in the Works. Plant & Equipment Insurance is not normally required under the contract conditions and is voluntarily purchased by the contractor.

Professional Indemnity Insurance

For construction contracts involving contractor's design, it is not uncommon for the employer to require the contractor and his design consultants and independent checking engineers to obtain insurance to cover their liability for design. For Government Contracts, the Professional Indemnity Insurance shall cover the contractor's liability for design generally for the construction period and a further 6 years.

SPECIFIED FORMS FOR BUILDINGS ORDINANCE OR REGULATIONS

FORM NO.	PURPOSE	RELEVANT SECTION OF REGULATION
BA1	Application for inclusion in the authorized persons' register / structural engineers' register / geotechnical engineers' register / inspector's register.	BOs 3(6)
BA1A	Application for retention of name in the authorized persons' register / structural engineers' register / geotechnical engineers' register / inspectors' register.	BOs 3(9B)
BA1B	Application for restoration of name in the authorized persons' register / structural engineers' register / geotechnical engineers' register / inspectors' register.	BOs 3(12)
BA2	Application for registration as a general building contractor / specialist contractor.	BOs 8B
BA2A	Application for renewal of registration as a registered general building contractor / registered specialist contractor.	BOs 8C(2)
BA2B	Application for restoration of name to the register of general building contractors / specialist contractors.	BOs 8D(2)
BA2C	Application for approval of technical director / other officer / person appointed to act for the purposes of the Buildings Ordinance for a registered general building contractor / registered specialist contractor.	BOs 8B
BA4	Notice of appointment of authorized person and/or registered structural engineer and/or registered geotechnical engineer.	BOs 4, B(A)R 23
BA5	Application for approval of plans of building works and/or street works and certificate of preparation of plans.	BOs 14(1)(a), B(A)R 29 & 18A

BA6	Stability certificate of authorized person and/or registered structural engineer.	B(A)R 18
BA7	Notice of urgent works required as a result of accident or emergency.	BOs 19, B(A)R 28
BA8	Application for consent to the commencement and carrying out of building works or street works.	BOs 14(1)(b), B(A)R 31
BA8A	Application for concurrent consent to the commencement of building works.	BOs 14(1)(b), B(A)R 31
BA9	Application for renewal of consent to the carrying out of building works or street works.	BOs 20
BA10	Notice of appointment of registered contractor, notice of commencement of building works or street works and undertaking by registered contractor.	B(A)R 20, BOs 9
BA11	Notice from a registered contractor on ceasing to be appointed in respect of building works or street works and certificate in respect of that part of the building works or street works carried out by the registered contractor.	B(A)R 24
BA12	Certificate on completion of building works resulting in a new temporary building, a new building or part of a new building and application for temporary occupation permit in respect of such building or part.	B(A)R 25, BOs 21
BA13	Certificate on completion of building works resulting in a new building and application for permit to occupy such building.	B(A)R 25, BOs 21
BA14	Certificate on completion of building works not resulting in a new building or of street works.	B(A)R 25 & 26
BA14A	Certificate on completion of demolition works.	B(A)R 25

(Cont'd)

Source: Buildings Department, Hong Kong, SAR. Refer to www.bd.gov.hk for further information.

SPECIFIED FORMS FOR BUILDINGS ORDINANCE OR REGULATIONS

FORM NO.	PURPOSE	RELEVANT SECTION OF REGULATION
BA15	Notice of intended material change in the use of a building.	BOs 25, B(A)R 47
BA16	Application for modification of and/or exemption from the provisions of the Buildings Ordinance and/or Regulations made thereunder.	BOs 42
BA17	Application for permit to erect a temporary building.	B(P)R 51
BA18	Application for permit to erect a contractor's shed.	B(P)R 53
BA19	Application for permit to erect hoardings, covered walkways or gantries.	B(P)R 64
BA20	Notice of technically competent person or persons appointed to supervise demolition works.	B(DW)R 8
BA21	Notice of nomination by authorized person or registered structural engineer or registered geotechnical engineer to temporary act in his stead.	BOs 4(2), B(A)R 23(2)
BA22	Application for authorization to carry out and/or maintain groundwater drainage works.	BOs 28B(1)
BA23	Application for grant/renewal of licence for an oil storage installation.	B(OSI)R 6(1) & 7(3)
BA24	Notification of change of business address / Contact Information.	B(A)R 45

BA25	Application for registration as a registered minor works contractor (company).	B(MW)R 10(1)(b)
BA25A	Application for renewal of registration of registered minor works contractor (company).	B(MW)R 14(1)
BA25B	Application for restoration of name to the register of minor works contractors (company).	B(MW)R 18(1)
BA25C	Application for registration of additional class and /or type of minor works for registered minor works contractor (company).	B(MW)R 21(2)
BA25D	Application for approval of nomination of additional authorized signatory/technical director of registered minor work contractor (company).	B(MW)R 24(1)
BA25E	Application for review of decision of the Building Authority or recommendation of the Minor Works Contractors Registration Committee in respect of registration of minor works contractor (company).	B(MW)R 26
BA26	Application for registration as a registered minor works contractors (individual).	B(MW)R 10(1)(a)
BA26A	Application for renewal of registration of registered minor works contractor (individual).	B(MW)R 14(1)
BA26B	Application for restoration of name to the register of minor works contractor (individual).	B(MW)R 18(1)
BA26C	Application for registration of additional items of Class III minor works for a registered minor works contractor (individual).	B(MW)R 21(1)
BA26D	Application for review of decision of the Building Authority or recommendation of the Minor Works Contractors Registration Committee in respect of registration of minor works contractor (individual).	B(MW)R 26

Source: Buildings Department, Hong Kong, SAR. Refer to www.bd.gov.hk for further information.

SUMMARY OF BUILDING REGULATIONS FOR HONG KONG

DESCRIPTION	NUMBER OF REGULATIONS
Administration	48
Appeal	13
Construction	46
Demolition Works	14
Energy Efficiency	5
Minor Works	96
Minor Works (Fees)	20
Inspection and Repair	35
Oil Storage Installations	15
Planning	74
Private Street and Access Roads	28
Refuse Storage and Material Recovery Chambers and Refuse Chutes	30
Standards of Sanitary Fitments, Plumbing, Drainage Works and Latrines	97
Ventilating Systems	8

Source: Buildings Ordinance, Hong Kong, SAR
Refer to www.legislation.gov.hk for further information.

PERCENTAGE SITE COVERAGE AND PLOT RATIOS FOR HONG KONG

DEFINITION

Class A Site : Not being a class B or class C site, that abuts on one specified street not less than 4.5 m wide or on more than one such street.

Class B Site : A corner site that abuts on 2 specified streets neither of which is less than 4.5 m wide.

Class C Site : A corner site that abuts on 3 specified streets none of which is less than 4.5 m wide.

OPEN SPACE ABOUT DOMESTIC BUILDINGS

Item	Class of site	Open space required
1.	Class A site	Not less than one-half of the roofed-over area of the building
2.	Class B site	Not less than one-third of the roofed-over area of the building
3.	Class C site	Not less than one-quarter of the roofed-over area of the building

Source: Buildings Ordinance, Hong Kong, SAR
Refer to www.legislation.gov.hk for further information.

(Cont'd)

PERCENTAGE SITE COVERAGE AND PLOT RATIOS FOR HONG KONG

Height of Building in metres	DOMESTIC BUILDINGS					
	Percentage site coverage			Plot Ratio		
	Class A site	Class B site	Class C site	Class A site	Class B site	Class C site
Not over 15 m	66.6	75	80	3.3	3.75	4.0
15 m to 18 m	60	67	72	3.6	4.0	4.3
18 m to 21 m	56	62	67	3.9	4.3	4.7
21 m to 24 m	52	58	63	4.2	4.6	5.0
24 m to 27 m	49	55	59	4.4	4.9	5.3
27 m to 30 m	46	52	55	4.6	5.2	5.5
30 m to 36 m	42	47.5	50	5.0	5.7	6.0
36 m to 43 m	39	44	47	5.4	6.1	6.5
43 m to 49 m	37	41	44	5.9	6.5	7.0
49 m to 55 m	35	39	42	6.3	7.0	7.5
55 m to 61 m	34	38	41	6.8	7.6	8.0
Over 61 m	33.33	37.5	40	8.0	9.0	10.0

Source: Buildings Ordinance, Hong Kong, SAR
Refer to www.legislation.gov.hk for further information.

NON-DOMESTIC BUILDINGS					
Percentage site coverage			Plot Ratio		
Class A site	Class B site	Class C site	Class A site	Class B site	Class C site
100	100	100	5	5	5
97.5	97.5	97.5	5.8	5.8	5.8
95	95	95	6.7	6.7	6.7
92	92	92	7.4	7.4	7.4
89	90	90	8.0	8.1	8.1
85	87	88	8.5	8.7	8.8
80	82.5	85	9.5	9.9	10.2
75	77.5	80	10.5	10.8	11.2
69	72.5	75	11.0	11.6	12.0
64	67.5	70	11.5	12.1	12.6
60	62.5	65	12.2	12.5	13.0
60	62.5	65	15	15	15

CHINA: GREEN BUILDINGS, CLIMATE CHANGE AND REGULATORY DEVELOPMENTS

Overview

China promulgated its first national *Green Building Evaluation Standard* in 2014. In promoting green buildings, China and all other countries share the same underlying sustainability goals, namely, environmental protection, reduction of wastes, well-being of building users, conservation of energy, adapting and mitigating climate change impacts. Now that climate change is a forefront issue for all governments and businesses worldwide, decarbonisation and adapting to renewable energies are becoming the measurements, drivers and direction of the development of green buildings in China.

For a number of years China has been the world's largest emitter of carbon dioxide and other greenhouse gases. Hence it was a very significant moment for the global climate change movement that President Xi Jinping of China announced at the 75th Session of the UN General Assembly in September 2020 that China will target to peak its carbon emissions by 2030 and to attain carbon neutrality by 2060. In fact, historically, China has always been highly proactive and supportive of international developments in climate change and decarbonisation. When the three most important international conventions for climate change were agreed and promulgated by the United Nations, namely, the 1992 *UN International Intergovernmental Panel on Climate Change*, the 1997 *Kyoto Protocol* and the 2015 *Paris Agreement*, China formally acceded to them within one year of their promulgation.

Since China's public announcement of its 2030/2060 decarbonisation commitments, China has issued a series of national policy documents to implement and fulfil its commitments, such as:

- the *Outline of the 14th Five-Year Plan and the Long-Range Objectives Through the Year 2035* (中华人民共和国国民经济和社会发展第十四个五年规划和2035年远景目标纲要) (March 2021)
- the *Opinions on Full Implement of Decarbonisation* (关于完整准确全面贯彻新发展理念做好碳达峰碳中和工作的意见) (September 2021)

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- the *Action Plan for Peaking Carbon Emissions before 2030* (2030年前碳达峰行动方案) (October 2021)

In connection with these macro decarbonisation policy documents, a number of national policy documents have been issued to actively implement decarbonisation in the building and construction sectors, such as:

- the *2020 Green Building Promotion Action Plan* (2020年绿色建筑创建行动方案) (July 2020)
- the *Opinions on Driving Green Developments in Urban and Rural Areas* (关于推动城乡建设绿色发展的意见) (October 2021)

Green Building Certifications

China promulgated its first Green Building Action Plan in 2013, and then promulgated its first national *Green Building Evaluation Standard* scheme in 2014. The latest *Green Building Evaluation Standard* (绿色建筑评价标准) (GB-T50378-2019) was updated in 2019. It provides technical standards for different types of civil buildings. A building can obtain green building rating of Basic-Grade, One-Star, Two-Star to Three-Star (being the highest rating). Similar to other international rating systems, China green building rating is granted in two stages: initially, a tentative rating at the design stage, and then a formal rating after completion of construction.

Currently only limited types of buildings are mandatorily required to achieve a certain green building rating. Pursuant to the 2020 Green Building Promotion Action Plan (绿色建筑创建行动方案) and other policy documents, China targets that 70% and then 100% of all new buildings in China shall attain a green building rating by end of 2022 and 2025 respectively.

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CHINA: GREEN BUILDINGS, CLIMATE CHANGE AND REGULATORY DEVELOPMENTS

Local governments in more developed regions have been more proactive in mandating green building rating. For example, in January 2021, *Guangdong Province has promulgated the Guangdong Provincial Green Building Regulations* (广东省绿色建筑条例) to set higher green building standards, namely:

- Except for self-use residential buildings constructed in rural areas, all new buildings must attain at least Green Building Basic-Grade.
- Local authorities are mandated to incorporate green building standard requirements into the outline zoning plans and land grant documents.
- Developers are required to specify the green building standard in their residential property sale and purchase contracts and post-sale property maintenance warranty documents.
- For the nine cities within the Guangdong Greater Bay Area, the green building requirements will be higher and more proactively implemented. For example, local authorities in these cities are required to gradually start conducting audits on green building ratings granted previously.

Another example, the 2017 *Shenzhen Municipal Green Building Promotion Measures* (深圳市绿色建筑促进办法) has set more demanding green building requirements, namely, all new buildings must attain at least the national One-Star rating or the local Shenzhen Bronze rating, and all new major public or iconic buildings are encouraged to aim for national Two-Star rating or local Shenzhen Gold rating. In February 2021, the *Shenzhen Green Building Regulations* (Consultation Draft) (深圳经济特区绿色建筑条例 (草案征求意见稿)) was published to push for even more stringent local requirements for green building development.

Concurrent with various mandatory requirements to attain green building ratings, local authorities have also been granting financial incentives for green buildings, such as exemption of gross floor area used to construct green building facilities in calculating project plot ratio as well as cash subsidies for projects which can attain higher green building ratings.

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Building Energy Efficiency and Carbon Emissions

Energy conservation and efficiency performance is definitively the most important technical parameter for green buildings. China has established its national legal framework in this area through *1997 Energy Conservation Law* (节约能源法) and the *2008 Civilian Buildings Energy Conservation Regulations* (民用建筑节能条例). All civil buildings are required to meet the relevant mandatory energy conservation standards and specifications for building materials, equipment and techniques, failing which local construction authorities shall not grant relevant approvals at the building design, planning, work commencement or completion stage.

In 2019, *the Building Carbon Emissions Computation Standard* (GB/T51366-2019) (建筑碳排放计算标准) was promulgated. The *General Rules for Building Energy Conservation and Use of Renewable Energies* (建筑节能与可再生能源利用通用规范) (GB 55015-2021) was further issued in September 2021. These General Rules are highly significant in several respects:

- the energy efficiency and carbon emission standards for all building types will be raised quite significantly and mandatorily with effect from 1 April 2022
- national and local authorities will start to set up online platforms to collect, analyse and report carbon emissions data of buildings.

Following China's accession for the *Kyoto Protocol* in 1998, in 2011 China has set up seven local carbon emissions trading exchanges in Beijing, Tianjin, Shanghai, Chongqing, Guangdong, Hubei and Shenzhen. Certain building and hotel projects have been selected to participate in the local carbon emissions trading exchanges in Beijing, Shanghai and Shenzhen on a trial basis.

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CHINA: GREEN BUILDINGS, CLIMATE CHANGE AND REGULATORY DEVELOPMENTS

Based on the experience of these local exchanges, China issued the *Management Measures for Trading of Carbon Emission Rights* (Trial Implementation) (碳排放权交易管理办法(试行)) in 2020 to set up the China National Carbon Emissions Trading Scheme (ETS) in Shanghai. Trading on the National ETS Exchange started in July 2021 while trading on the local exchanges continues. At this stage only the major electricity power generation companies are mandated to participate to trade the carbon emissions quotas at the National ETS Exchange. Other sectors with heavy carbon emissions (such as steel, cement and chemicals) will also be mandated to participate in the National ETS Exchange. If the 2021 *General Rules for Building Energy Conservation and the 2021 Notice for Full Implementation of Decarbonisation* mentioned above are successful in setting up online platforms for the carbon emissions data for the building sector, it will highly facilitate more building projects to trade their carbon emissions in local ETS exchanges, and perhaps also in the National ETS Exchange further down the road.

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Green Finance

China is well aware of the important role of finance in achieving its climate change transition goals. In 2016, the People's Bank of China and various other national ministries issued the *Guiding Opinions on Creating the Green Finance Framework* (关于构建绿色金融体系的指导意见) to set up a supportive policy framework for promoting green finance in China. Since then many national and local regulations and policy documents have been issued in support of green finance in China, e.g. the 2021 *Shenzhen Green Finance Regulations* (深圳经济特区绿色金融条例). Now China is already the second-largest source of green bond and green finance issuance, with a total of USD 44 billion issued in 2020.

In all these national and local regulations, green building is always included as one of the specific sectors to receive green finance support. A principal way for a building project to prove that it can meet the green financing criteria set by regulations and lenders is that it has obtained the required national or local green building rating.

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PROCUREMENT STRATEGIES AND FORM OF CONTRACTS

General

A host of contract procurement approaches have emerged in the past decade. Each procurement approach has characteristics, benefits and restrictions peculiar to it. There is no single approach that fits all situations. The key to a successful procurement arrangement lies in marrying the right procurement approach with the particular contract in question. This calls for a systematic identification of client's requirements and evaluation of the decision criteria relating to the procurement strategy.

Common criteria for procurement selection

Speed – Fast-tracking projects generally favor arrangements that offer opportunities to overlap the design and construction processes e.g. design & build contracting and management contracting.

Cost certainty – Reliability of budgets is one of the prime concerns of most clients. Traditional lump sum bills of quantities and design & build contracting offer the highest degree of price certainty.

Complexity – Projects which are technologically advanced or highly serviced generally favor the use of traditional contracting where the design will be well developed prior to the tendering stage. Procurement arrangements such as construction management and management contracting that allow early involvement of management contractor are also considered suitable for complex projects.

Responsibility – For projects using traditional contracting, the contractor is employed to build what the client's design team has documented. Therefore, any dispute as to quality of works has to be resolved into a design or workmanship issue in the very first place. By contrast, design & build contracts offer the clearest division of responsibility where the design & build contractor will be the sole point of responsibility.

Common standard form of contract in Hong Kong

In 2005, the Hong Kong Institute of Architects, the Hong Kong Institute of Construction Managers and the Hong Kong Institute of Surveyors jointly published a new standard form of building contract which is designed particularly for private projects where bills of quantities are provided.

In 2006, the three institutes published another standard form of building contract tailored for private projects without bills of quantities.

For public works, the conditions of contracts are often based on one of the following standard forms: -

The Government of the HKSAR, General Conditions of Contract for Building Works 1999 Edition

The Government of the HKSAR, General Conditions of Contract for Civil Engineering Works 1999 Edition

The Government of the HKSAR, General Conditions of Contract for Electrical and Mechanical Engineering Works 1999 Edition

The Government of the HKSAR, General Conditions of Design and Build Contracts 1999 Edition

New Engineering Contract (NEC)

NEC is the abbreviation for “New Engineering Contract” which is a suite of contracts published by the Institute of Civil Engineers in the United Kingdom. The Hong Kong Government used to have its own standard forms of contract but now the NEC forms have become increasingly popular in the public sector of Hong Kong. The Development Bureau continually advocated “collaborative partnership” in delivering public works projects in Hong Kong by way of introducing the “New Engineering Contract” (NEC) form aiming to elevate management efficiency and cost effectiveness.

The Permanent Secretary for Development (Works), Mr Lam Sai-hung, said at the UK NEC Awards ceremony that he was pleased to see the successful development of mutual trust and a co-operative culture within the public works sector through the adoption of the NEC, with outstanding performance achieved in the 2021 NEC Awards. The Hong Kong Government stated on its press release of 24 June 2021 that the Development Bureau

PROCUREMENT STRATEGIES AND FORM OF CONTRACTS

piloted the use of the NEC form in public works projects in 2009 and has expanded its application since 2015. As of today (2021 June), more than 300 NECs for public works have been awarded, amounting to over $160 billion.

The NEC form continues to have a significant impact by its extensive usage in different works categories (including building works, civil engineering works etc.) by the Hong Kong Government. The NEC contract suites covers not only construction and engineering contracts between employers and contractors but also professional service contracts for employers to engage consultants or other suppliers under NEC contracts.

The Engineering & Construction Contract (ECC) of the NEC family of contracts contains standard options that cover lump sum contracts, target cost contracts, cost reimbursable contracts and management contracts. The ECC contract claims to be radically different to traditional construction contracts in that it facilitates good management and encourages collaborative working. For instance, both the Project Manager and the Contractor are obliged to give early warnings and to hold early warning meetings to mitigate the effects of change in contract scope. Great emphasis is also given to the programme which has to be accepted by the Project Manager and to be kept updated by the Contractor. The Project Manager is to maintain a Risk Register to record risks that have arisen during the contract and the decisions of how to deal with them.

In 2017, the NEC4 contract suite was published built upon updates to NEC3 contract suite. The NEC3 contracts are updated by taking account on the constructive feedback from users and industry experts with amendments for improvement in flexibility, clarity and ease of contract administration.

Arcadis was the NEC Advisor for Fuk Man Road Nullah Improvement Works – the very first NEC pilot project in Hong Kong. Our work with the project team for that pilot project reveals that it is not only the form of the NEC that brings about the advantages of flexibility and promotion of good project management. The success lies in a change in mindset and attitudes and the establishment of mutual trust among project stakeholders.

Procurement Strategy Table

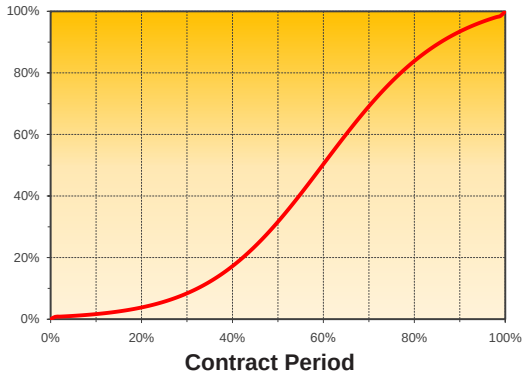
PROJECT CRITERIA		RELATIVE DEGREE OF APPROPRIATENESS			
Parameter	Objectives	Traditional	Management Contracting	Construction Management	Design and Construct
Timing	Early Completion	Low	High	High	High
Cost	Pre construction price certainty	High	Low	Low	High
Quality	Design prestige	High	High	High	Low
Variations	Avoid prohibitive cost of change	High	Moderate	Moderate	Low
Complexity	Technically advance or highly complex building	Moderate	High	High	Low
Responsibility	Single contractual link	Low	Low	Low	High
Professional Responsibility	Need for design team to report to sponsor	High	High	High	Low
Risk Avoidance	Desire to transfer complete risk	Low	Low	Low	High
Damage Recovery	Facility to recover costs direct from contractor	Moderate	Low	Low	High
Buildability	Contractor input to economic construction	Low	High	High	High

CONSTRUCTION WORKDONE FORECAST

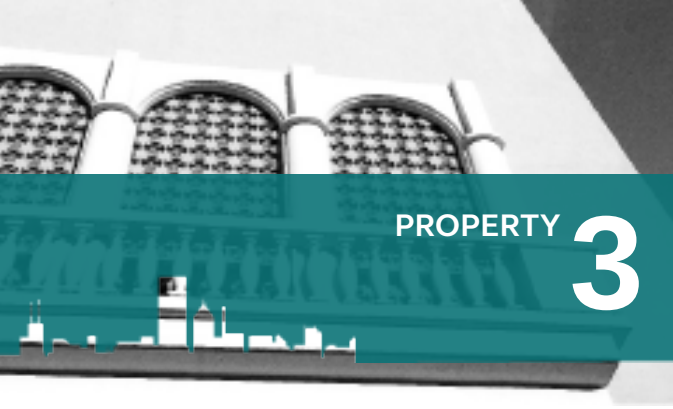
The following graph and table are an indication of the rate of expenditure for construction projects.

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

Construction Workdone Forecast



CONTRACT PERIOD	CUMULATIVE WORKDONE	CONTRACT PERIOD	CUMULATIVE WORKDONE
5%	1%	55%	41%
10%	2%	60%	50%
15%	3%	65%	60%
20%	4%	70%	69%
25%	6%	75%	77%
30%	8%	80%	84%
35%	12%	85%	89%
40%	17%	90%	93%
45%	24%	95%	97%
50%	32%	100%	100%



PROPERTY 3

PROPERTY COMMENTARY 2021

Economy

The Hong Kong economy recovered visibly throughout the year, thanks to the stable local epidemic situation. Economic recovery was mainly led by the strong growth of merchandise exports, with the value of total exports of goods increased by 26.7% YoY for the first 10 months of 2021 as a whole. GDP grew 5.4% YoY in the third quarter of 2021, after an increase of 7.6% YoY in the preceding quarter. The labour market continued to improve alongside the revival of local economic activity. The unemployment rate declined to 4.1% in the rolling three-month period between September and November, edged down 0.2 percentage points compared with the previous period ending in October, and it was the lowest since the pandemic began in early 2020. Private consumption went up by 7.1% YoY in Q3.

The factors such as the uncertainties over Chinese Mainland economy and China's regulation on technology stocks have weighted on investment sentiment, and Hong Kong stock market underwent a sharp correction. The benchmark Hang Seng Index tumbled nearly 15% in the third quarter of the year.

Despite the stable pandemic situation, the retail sector has not yet fully restored. Nonetheless, supported by the consumption vouchers scheme and the improved labour market, the total retail sales increased by 12% YoY in the first 10 months of 2021 to HK$288.9 billion, reflecting a buoyant local consumption sentiment. On the other hand, the inbound tourism remained frozen amid travel restrictions. The total number of inbound tourist arrivals between January and October in 2021 plunged 98% YoY from 3.56 million to 72,458. Average hotel occupancy recorded 62% in the first 10 months of 2021, compared with 44% same period last year, suggesting the local staycation trend have somewhat helped the hotel industry to generate more business amid the pandemic.

Provided by : Knight Frank

In August, the Hong Kong government predicted the GDP to rise by 6.4% in 2021, compared to an earlier forecast range of 5.5%-6.5%. As long as the local epidemic situation remains under control, the local economic recovery should continue in 2022. However, the concerns over emerging Omicron variant may pose further uncertainty to the resumption of the economic normalcy.

Residential

Bolstered by the firm end-user demand, low interest rate environment and the gradually improving local economy, the purchase sentiment in residential market was strong over the first eleven months of 2021. According to the government statistics, a total of 69,152 residential transactions were recorded over the period, surged 28.5% YoY. First-hand property projects have drawn keen interests from the local homebuyers as indicated by the brisk sales and the massive oversubscriptions of new projects. A total of 16,136 primary units were sold between January and November in 2021, up 22.2% compared with the same period last year.

Supported by the resilient local demand and more new home projects could be launched in the near term, the buying power in the residential market, in particular the primary market, will persist. More potential buyers might take the opportunity to get on the property ladder amid the current low interest rate environment. However, as home prices are fluctuating around historical high in the second half of 2021, and up to 10,000 new units could be launched in the next one to two quarters, some potential homebuyers will hold out for better options.

Going forward, we expect transaction activity, especially in the first-hand market, to maintain its positive momentum as demand remains firm. We expect the mass housing prices to go up by 0% to 3% in 2022, while the luxury prices to increase 3% to 5% given the expected reopening of border. With more new projects launches and various

Provided by : Knight Frank

(Cont'd)

PROPERTY COMMENTARY 2021

finance schemes offered by the developers, more purchasing power in the secondary market will shift to the primary market, and thus we forecast the transaction volume ratio of first-hand to second-hand homes to be around 30:70 in 2022, and the total residential transaction volume to be approximately 60,000 to 65,000 units next year.

Office

With the stabilized economic situation, the signal of bottoming-out is more visible in the overall leasing market since Q3 2021. The average rent of Hong Kong Island and Kowloon for the first 11 months of 2021 recorded a moderate yearly drop of 5.2% and 4.2% respectively, according to Knight Frank Research.

As the current rent level in CBD is on par with that in the post-global financial crisis in 2010, the trend of "recentralisation" has been more obvious in the second half of 2021. Given the improved business sentiment, some tenants in the financial services sector, previously located in non-CBD areas, are looking to maintain a presence in Central.

Contrary to the common perception that the pandemic-induced work-from-home arrangements would reduce demand for office spaces, our global (Y)our Space Report has revealed that around 70% of Hong Kong headquartered enterprises planned to increase their office space in the next three years. The result demonstrates that office space remains widely recognized as an important element to Hong Kong enterprises even during the pandemic.

Meanwhile, driven by the growing demand for hybrid workspace, more landlords have joined the bandwagon of operating their own co-working space during 2021.

Provided by : Knight Frank

For instance, during the year, Shanghai-based Shimao Property Holdings opened "The Center Space", a 23,600-sq-ft co-working space on the 76th floor of The Center, while Hongkong Land unveiled its two-floor Centricity Flex, with 25,000 sq ft of space, on the 17th and 18th floor of Edinburgh Tower.

Looking ahead, as Central's rental premium over the rest of the market has narrowed, we expect the leasing momentum in Central to remain upbeat, supporting an upward rental trend on Hong Kong Island. On the other hand, since tenants will continue to seize the opportunity to relocate their offices from Hong Kong Island to the other Grade-A office buildings with larger floor plates in Kowloon at more affordable rents, we expect the rent in Kowloon will also record a slight upward adjustment in 2022.

Retail

Hong Kong's retail market witnessed a gradual recovery in 2021, underpinned by the improving economic performance and labour market. According to the latest official statistics, total retail value reached HK$289 billion in the first ten months of 2021, up 8.5% compared to the same period last year.

The F&B sector saw a significant recovery compared to last year, owing to the relaxation of social distancing restrictions and the stable local epidemic situation. The value of total receipts of the restaurant sector in Q3 2021 soared by 43.8% YoY to HK$24.5 billion. In Q1–Q3 2021, restaurant receipts totalled HK$67.6 billion, increasing by 12.9% YoY.

The sales value of luxury goods totalled HK$31.8 billion for January to October 2021, rose by 29.2% from the same period last year. This reflects that the luxury segment has rebounded from the trough in 2020 when the total sales value merely totalled HK$30.5 billion for the whole year.

Meanwhile, it is noteworthy that the local e-commerce market continued to grow. Online retail sales soared

PROPERTY COMMENTARY 2021

41.7% in the first 10 months of the year compared with the same period in 2020. The pandemic has induced a rapid development of e-commerce, leading to a common adoption of omnichannel retailing. On top of physical stores, many retailers also make use of their online platforms to boost sales.

Transactions for retail property rebounded in 2021. The sales number of retail transactions in January to November of 2021 surged by 72% YoY while the total consideration in the same period also increased by 76% YoY.

As the city has largely resumed normal economic activity, and people have returned to their normal way of life, we expect the F&B sector to outperform in the retail market given the common dine-out habits of Hong Kong people. This will underpin demand for retail shops in the long term. In the coming year, the gradual recovery of the overall retail market is expected to continue, which would support a stable trend in the retail rents.

Industrial

The abolition of Doubled Ad Valorem Stamp Duty (DSD) since November 2020 has largely boosted the non-residential property transactions. Both industrial transaction number and volume recorded significant increase in 2021. For the first ten months in 2021, a total of 3,020 flatted factories transactions with the amount of HK$22.4 billion were recorded, rocketed 86.5% and 111.6% respectively.

Apart from the traditional industrial buildings, more investors showed their appetite on the data centre properties in Hong Kong. For instance, a real estate investment trust DigitalBridge purchased PCCW's data centre business for US$750 million and Mapletree Investments acquired a site in Fanling for HK$813 million for their data center construction, reflecting the strong demand for specialized usage and facilities.

Provided by : Knight Frank

Thanks to the rapid growth of e-commerce, the leasing demand of industrial market was strong in 2021, with demand mainly driven by the logistics and cold storage sector. For example, a tenant rented 110,000 sq ft of space at Goodman Tuen Mun Distribution Centre in Tuen Mun while a cold storage tenant rented 110,000 sq ft of space at Hutchison Logistics Centre in Kwai Chung at around HK$15 per sq ft per month.

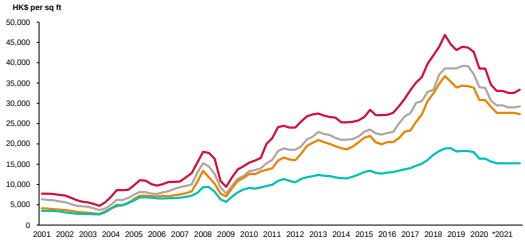
In Q3, the overall industrial rents in Hong Kong was on par with the previous quarter, averaging at HK$13.5 per sq ft per month, according to Knight Frank Research. For general industrial buildings, the average rent increased by 2.4% on a quarterly basis in Q3. The area of Fanling, Sheung Shui, Sha Tin Wan saw the largest growth in rents which rose by 2.7% QoQ.

According to the statistics from the Rating and Valuation Department, the new completion of 173,000 sqm will be provided to the industrial property market in 2022. With the existing strong leasing demand and stable vacancy rate, we expect that the new supply will gradually gather leasing momentum and will be absorbed by e-commerce and logistics sectors as cold storage usage in the coming year.

Provided by : Knight Frank

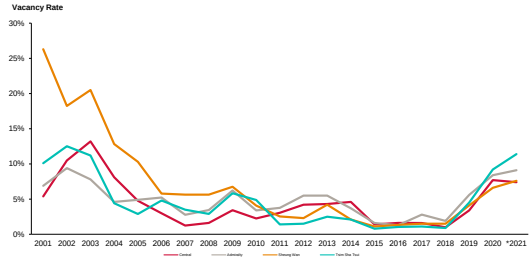
PROPERTY INDICATORS

HONG KONG GRADE-A OFFICE PRICE



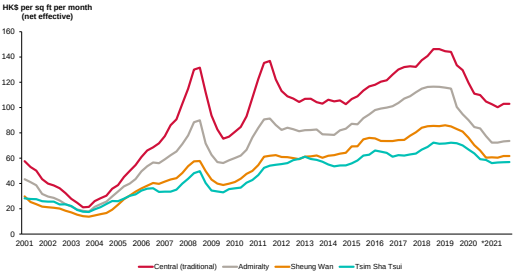
* November figures
Source: Knight Frank Research

HONG KONG GRADE-A OFFICE VACANCY RATES



* November figures
Source: Knight Frank Research

HONG KONG GRADE-A OFFICE RENTAL VALUES



* November figures for 2021
Source: Knight Frank Reserach

HONG KONG GRADE-A OFFICE SUPPLY

Source: Rating and Valuation Department

GROSS FLOOR AREA (GFA) CALCULATIONS IN HONG KONG

FEATURE	BUILDING (PLANNING) REGULATION	REMARKS
General floor area	Accountable	Area within outer surface of external walls.
Basement	Accountable	
Balcony / utility platform *	Accountable	Non-accountable if for residential buildings and with not less than 40% of the perimeter faces into open air, max 50% area can be exempted.
Curtain wall / cladding	Non-accountable	Non-accountable if: 1. The curtain wall system itself does not form part of the structural system of the parent building; 2. The system does not result in any additional floor area at a floor level; 3. The projection of the system from the outer face of the structural elements does not exceed 200mm for a domestic building and 250mm for non-domestic building; 4. The external reflectance of the glass used in the system does not exceed 20%; and; 5. Safe access and facilities are provided for the cleaning, maintenance and repair of the system.
External wall finishes (including bay windows) *	Non-accountable	Non-structural precast facades may, subject to conditions, be excluded from GFA calculation.
Plant rooms@	Non-accountable	Subject to justification with reasonable plant layouts.
Staircases and lift shafts	Accountable	Except staircases and lift shafts solely serving non-accountable areas.
Covered public carparking space	Accountable	Underground public car parking space can be exempted.
Covered private carparking space	Non-accountable	Applicable only for spaces serving users of the building required under local standard and built below ground. Only 50% area can be exempted if above ground.

Lobby *	Accountable	Concession may be granted for lift lobbies subject to conditions.
Refuge floor	Non-accountable	
Loading and unloading bay	Non-accountable	Applicable if required under local standard/lease and built on ground floor or below ground. Only 50% area can be exempted if above ground.
Refuse storage chambers, refuse storage, refuse chutes, refuse hopper rooms	Non-accountable	
Covered area on roof-tops	Accountable	Non-accountable for plant rooms and staircases serving non-accountable area only.
Recreational facilities *	Accountable	Non-accountable subject to conditions.
Spaces for watchmen and management staff *	Accountable	Non-accountable subject to conditions.
Modular Integrated Construction	Accountable	Concession maybe granted to 6% of the MiC floor area upon submission of an application

* Total concessions of these areas are subject to a cap of 10% of the total GFA and prerequisites with sustainability designs.
@ Non-mandatory or non-essential plant room, such as A/C plant room, AHU room, are subject to a cap of 10% of the total GFA and prerequisites with sustainability designs.

Disclaimer : *GFA calculations are subject to various legislation and practice notes. All cases of accountable or non-accountable GFA are subject to individual conditions. The above presents a brief summary only and users are advised to seek professional advice from authorized persons. Arcadis herewith disclaims any liability that may arise from unsolicited use of the information given above.*

GROSS FLOOR AREA (GFA) CALCULATIONS IN PRC

FEATURE	NATIONAL STANDARD - STANDARD MEASUREMENT FOR CONSTRUCTION AREA OF BUILDING (GB/T 50353-2005)	REMARKS FOR BEIJING, SHANGHAI AND GUANGZHOU
General floor area	Accountable	Area within outer surface of external insulation. Shanghai : External insulation is exempted from calculation of plot ratio.
Basement	Accountable	1. Beijing: Non-accountable 2. Shanghai : Non-accountable. 3. Guangzhou : Accountable for GFA except where the floor space is solely for plant rooms or carpark.
Balcony / utility platform	Accountable	
Curtain wall / cladding	Accountable	Except decorative type of curtain wall.
External wall finishes (including bay windows)	Non-accountable	
Plant rooms	Accountable	
Staircases and lift shafts	Accountable	
Covered public carparking space	Accountable	
Covered private carparking space	Accountable	
Lobby	Accountable	

Canopy	Accountable	Non-accountable subject to width of the canopy not exceeding 2.1m.
Refuge floor	Accountable	1. Shanghai : Non-accountable. 2. Guangzhou : Only refuge areas on refuge floor are non-accountable.
Space below elevated ground floor	Accountable	Non-accountable for GFA if for the usage of walkway, green, public amenities or similar public function.
Covered walkways	Accountable	
Loading and unloading bay	Accountable	Non-accountable if not roofed over.
Refuse storage chambers, refuse storage, refuse chutes, refuse hopper rooms	Accountable	Non-accountable if not roofed over.
Floor space inside sloping roof	Accountable	Non-accountable if clear height does not exceed 1.2m.
Covered area on roof-tops	Accountable	1. Shanghai : Non-accountable if the area of the construction on roof-top does not exceed 1/8 of the area of the typical floor. 2. Guangzhou: Staircase, lift lobby and water tank room on roof-tops are exempted from GFA
Recreational facilities	Accountable	
Spaces for watchmen and management staff	Accountable	
External staircases	Accountable	Non-accountable if not roofed over.

Disclaimer : *GFA calculations are subject to various legislation and practice notes. All cases of accountable or non-accountable GFA are subject to individual conditions. The above presents a brief summary only and users are advised to seek professional advice from authorized persons. Arcadis herewith disclaims any liability that may arise from unsolicited use of the information given above.*

CONSTRUCTION FLOOR AREA (CFA) DEFINITION

The construction floor area measured from drawings is defined as covered floor areas fulfilling the functional requirements of the building measured to the outside face of the external walls or external perimeter.

It includes floor areas occupied by:

- partitions
- columns
- stairwells
- lift shafts
- plant rooms
- water tanks
- balconies
- utilities platforms
- vertical ducts
- service floors higher than 2.2m and the like

But excludes floor areas occupied by:

- bay windows
- planters projecting from the building, and
- the areas covered by canopies, roof eaves and awnings

Sloping surfaces such as staircases, escalators and carpark ramps are to be measured flat on plan.

The measurement of construction floor area is as defined by Arcadis.

OTHER INFORMATION 4

UTILITY COSTS FOR SELECTED ASIAN CITIES

CITY	EXCHANGE RATE	ELECTRICITY	
		DOMESTIC	COMMERCIAL/ INDUSTRIAL
	US$1=	US$/kWh	US$/kWh
Hong Kong	HK$ 7.79	0.11	0.13
Macau	MOP 8.01	0.17	0.17
Shanghai	RMB 6.40	0.153(peak) / 0.048(normal)	5.316 (Basic Tariff) / 0.092 (Summer) / 0.087 (Non-Summer)
Beijing	RMB 6.40	0.068 - 0.110	0.190 - 0.1921 (peak) / 0.118 - 0.120 (normal)
Guangzhou	RMB 6.40	0.091 - 0.138	0.091 - 0.105
Chongqing	RMB 6.40	0.080 - 0.128	0.087 - 0.102

The above costs are at **4th Quarter 2021** levels.

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$ 0.13/kWh;
  1,000 - 1,800kWh = US$ 0.15/kWh; 1,800 - 2,600kWh = US$ 0.19/kWh;
  2,600 - 3,400kWh = US$ 0.22/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$ 0.53/m^3;
  43 - 62m^3 = US$ 0.83/m^3; Above 62m^3 = US$ 1.16/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** 92# = US$1.178/litre; 95# = US$1.245/litre

WATER		FUEL		
DOMESTIC	COMMERCIAL/ INDUSTRIAL	DIESEL	LEADED	UNLEADED
US$/m³	US$/m³	US$/litre	US$/litre	US$/litre
0.83	0.59	2.25	N/A	2.62
0.56 - 0.91	0.75	1.77	N/A	1.59
0.539 - 0.911	0.78	1.12	N/A	1.25
0.694 - 1.251	1.251 - 1.319	1.30	N/A	1.46
0.309 - 0.619	0.79	1.13	N/A	1.18
0.520 - 0.877	0.68	1.13	N/A	1.245

Basis of Charges in Shanghai, China

- **Electricity -** Domestic *(Charge on yearly consumption)* :
  0 - 3,120kWh = US$ 0.096/kWh (peak) / US$ 0.048/kWh (normal);
  3,120 - 4,800kWh = US$ 0.106/kWh (peak) / US$ 0.053/kWh (normal);
  Above 4,800kWh = US$ 0.153/kWh (peak) / US$ 0.076/kWh (normal)
- **Electricity -** Commercial/Industrial
  In dual tariff system; and in rate of 10 kVa
- **Unleaded Fuel** = Unleaded fuel rate is for Unleaded 95#

Basis of Charges in Beijing, China

- **Electricity -** Domestic (below 1kV) :
  1 - 240kWh = US$0.068/kWh; 241 - 400 kWh = US$0.075/kWh;
  Above 400kWh = US$0.110 / kWh
- **Electricity -** Commercial/Industrial (1-10kV) :
  Central Districts: US$0.192/kWh(peak); US$0.120/kWh(normal)
  Other Districts= US$0.190/kWh(peak); US$0.118/kWh(normal)
- **Water -** Domestic:
  1 - 180m3 = US$0.694/m³; 181 - 260m3 = US$0.972/m³
  Above 261m³ = US$1.251/m³
- **Water -** Commercial/Industrial :
  Central Districts: US$1.319/m³; Other Districts= US$1.251/m³

Basis of Charges in Guangzhou, China

- **Unleaded Fuel** = Unleaded fuel rate is for Unleaded gasoline 92#
  95# = US$1.283/litre; 98# = US$1.461/litre

(Cont'd)

UTILITY COSTS FOR SELECTED ASIAN CITIES

CITY	EXCHANGE RATE	ELECTRICITY	
		DOMESTIC	COMMERCIAL/ INDUSTRIAL
	US$1=	US$/kWh	US$/kWh
Singapore	S$ 1.35	0.18	0.18
Kuala Lumpur	RM 4.15	0.053 - 0.138	0.092 - 0.123
Bangkok	BAHT 33.889	0.069 - 0.130	0.091 - 0.094
Manila	PHP 50.77	0.142 - 0.210	0.177
Ho Chi Minh	VND 23,450	0.12	0.11/0.06
Bangalore*	INR 74.39	0.075 - 0.107	0.092 - 0.135
New Delhi*	INR 74.39	0.021 - 0.108	0.161
Jakarta#	IDR 14,288	0.101	0.101

The above costs are at **4th Quarter 2021** levels.

* The data is provided by Arkind LS Private Limited, an Arcadis Alliance partner.

\# The data is provided by PT Lantera Sejahtera Indonesia.

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

- Electricity tariff is based on low tension power supply.
- [2]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
- [4]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 27 October 2021.
- Unleaded Fuel = 98 Unleaded petrol as at 27 October 2021.

Basis of Charges in Kuala Lumpur, Malaysia

- Fuel = Rates for 11-17 November 2021. Unleaded petrol Ron 95.
- Electricity (Commercial/Industrial): 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
2.03[8]/ 2.73[9]	2.03	1.57	N/A	2.34
0.137 - 0.482	0.499 - 0.549	0.518	N/A	0.494
0.251 - 0.426	0.280 - 0.467	0.874	N/A	0.930
0.474 - 0.707	2.41	1.030	N/A	1.162
0.27	0.84/0.52	0.88	N/A	1.14
0.590 - 0.738	1.48	1.155	N/A	1.385
0.07 - 0.59	0.50 - 2.36	1.167	N/A	1.398
0.073 - 0.521	0.477 - 1.025	0.910	N/A	0.630

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

Basis of Charges in Manila, Philippines

- **Electricity**
  Domestic : 50kWh - 652kWh
  Commercial/Industrial : 34,351kWh
- **Water**
  Domestic : 17m³ - 35m³
  Commercial/Industrial : 13m³

Basis of Charges in Jakarta, Indonesia

- Domestic group in Indonesia covers residence, religious building, non-profit organization building and governement hospital
- Commercial group in Indonesia covers luxury residence, apartment, offices, hotel, commercial building and factories.

PUBLIC HOLIDAYS

	2022
HONG KONG	
New Year's Day	01 Jan
Lunar New Year (Day 1)	01 Feb
Lunar New Year (Day 2)	02 Feb
Lunar New Year (Day 3)	03 Feb
Ching Ming Festival	05 Apr
Good Friday	15 Apr
The day following Good Friday	16 Apr
Easter Monday	18 Apr
The day of following Labour Day	02 May*
The day following Birthday of the Buddha	09 May*
Tuen Ng / Dragon Boat Festival	03 Jun
HKSAR Establishment Day	01 Jul
The 2nd day following Chinese Mid-Autumn Festival	12 Sep*
National Day	01 Oct
Chung Yeung Festival	04 Oct
The 1st weekday after Christmas Day	26 Dec
The 2nd weekday after Christmas Day	27 Dec*

* *As the festivals in 2022 falls on Sunday, the day following it is designated as a general holiday in substitution*

	2022
CHINA	
New Year's Day	01 Jan
	02 Jan
	03 Jan
Chinese New Year's Eve	31 Jan
Chinese New Year[$]	01 Feb
	06 Feb
Ching Ming Festival	03 Apr
	04 Apr
	05 Apr
Labour Day*	30 Apr
	04 May
Tuen Ng / Dragon Boat Festival	03 Jun
	04 Jun
	05 Jun
Mid-Autumn Festival	10 Sep
	11 Sep
	12 Sep
National Day[#]	01 Oct
	07 Oct

[$] *01-06 February 2022 are holidays*

* *30 Apr-04 May 2022 are holidays*

[#] *01-07 October 2022 are holidays*

(Cont'd)

PUBLIC HOLIDAYS

	2022
MACAU	
New Year's Day	01 Jan
Lunar New Year's Eve (Afternoon)	31 Jan*
Lunar New Year's Day	01 Feb
The 2nd day of Lunar New Year	02 Feb
The 3rd day of Lunar New Year	03 Feb
Cheng Ming Festival	05 Apr
Good Friday	15 Apr
The day before Easter	16 Apr
The rest day for Easter	18 Apr@
Labour Day	01 May
The rest day for Labour Day	02 May@
Birthday of the Buddha	08 May
The rest day of Birthday of the Buddha	09 May@
Tuen Ng / Dragon Boat Festival	03 Jun
The day following Chinese Mid-Autumn Festival	12 Sep@
National Day	01 Oct
The rest day for National Day	03 Oct
Chung Yeung Festival	04 Oct
The rest day for the day following National Day	05 Oct@
All Soul's Day	02 Nov
Feast of Immaculate Conception	08 Dec
Macao S.A.R. Establishment Day	20 Dec
Winter Solstice	22 Dec
Christmas Eve	24 Dec
Christmas Day	25 Dec
The rest day of Christmas Day	26 Dec@
	27 Dec@

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

@ As the festivals in 2022 falls on Saturday / Sunday, the day following it is designated as a general holiday in substitution

	2022
INDIA	
New Year's Day	01 Jan
Chandrama Ugadi	02 Apr
May day	01 May
Ramzan	03 May
Ganesh Chaturthi	31 Aug
Gandhi Jayanti	02 Oct
Vijay Dashmi	05 Oct
Diwali	24 Oct
Christmas Day	25 Dec

The data is provided by Arkind LS Private Limited, an Arcadis Alliance Partner

INDONESIA	
New Year's Day	01 Jan
Chinese New Year's (Imlek)	01 Feb
Ascension of Prophet Muhammad	28 Feb
Hindu Day of Quiet (Nyepi)	03 Mar
Good Friday	15 Apr
International Labour Day	01 May
Idul Fitri	02 May
	03 May
Waisak Day	16 May
Ascension Day of Jesus Christ	26 May
Pancasila Day	01 Jun
Idul Adha Day	09 Jul
Hijriyah New Year	30 Jul
National Independence Day	17 Aug
Prophet Muhammad's Birthday	08 Oct
Christmas Day	25 Dec

(Cont'd)

PUBLIC HOLIDAYS

	2022
MALAYSIA	
New Year's Day *	01 Jan
Chinese New Year	01 Feb
	02 Feb^
Labour Day	01 May
Hari Raya Aidilfitri**	03 May
	04 May
Wesak Day	15 May
King/Agong's Birthday	07 Jun
Hari Raya Qurban**	10 Jul
Awal Muharam (Islamic New Year)	30 Jul
National Day	31 Aug
Malaysia Day	16 Sep
Prophet Muhammad's Birthday	09 Oct
Deepavali**	24 Oct^^
Christmas Day	25 Dec

* *Except Johor, Kelantan, Kedah, Perlis & Terengganu*

** *Subject to change*

^ *Except Kelantan & Terengganu*

^^ *Except Sarawak*

	2022
PHILIPPINES	
New Year's Day	01 Jan*
Chinese New Year	01 Feb#
EDSA People Power Revolution	25 Feb#
Araw ng Kagitingan	09 Apr*
Maundy Thursday	14Apr*
Good Friday	15 Apr*
Black Saturday	16 Apr#
Labor Day	01 May*
End of Eid-ul-Fitre (Feast of Ramadhan)	02 / 03 May*
Independence Day	12 Jun*
Eid-ul-Adha	09 / 10 Jul*
Ninoy Aquino Day	21 Aug#
National Heroes Day	29 Aug*
All Saint's Day	01 Nov#
Bonifacio Day	30 Nov*
Feast of the Immaculate Conception of Mary	08 Dec#
Christmas Day	25 Dec*
Rizal Day	30 Dec*

* *Regular Holidays*
\# *Special Non-Working Holidays*

(Cont'd)

PUBLIC HOLIDAYS

	2022
SINGAPORE	
New Year's Day	01 Jan
Chinese New Year	01 Feb
	02 Feb
Good Friday	15 Apr
Labour Day	01 May#
Hari Raya Puasa	03 May
Vesak Day	15 May#
Hari Raya Haji	10 Jul#
National Day	09 Aug
Deepavali	24 Oct
Christmas Day	25 Dec#

 # The following Monday will be a public holiday.

VIETNAM	
New Year's Day	01 Jan
	03 Jan[1]
Lunar New Year	31 Jan
	1-4 Feb
Hung Vuong King Celeration	10 Apr
	11 Apr[2]
Liberation Day of Saigon	30 Apr
International Labour Day	01 May
	2-3 May[3]
National Day	1-2 Sep
Christmas Day	24-25 Dec

 # Substitute

1 - As New Year's Day falls on Saturday (01 Jan) , Monday is designated as a general holiday in substitution

2 - As Hung Vuong King Celeration falls on Sunday (10 Apr) , Monday is designated as a general holiday in substitution

3 - As Liberation Day of Saigon falls on Saturday (30 Apr) and International Labour Day falls on Sunday (01 May) , Monday and Tuesday are designated as a general holiday in substitution

	2022
THAILAND	
New Year	03 Jan[1]
Makha Bucha Day	16 Feb
Chakri Memorial Day	06 Apr
Songkran Festival	13 Apr
Songkran Festival	14 Apr
Songkran Festival	15 Apr
Labour Day	02 May[2]
Coronation Day	04 May
Wisakha Bucha Day	16 May[3]
H.M. Queen Suthida Bajrasudhabi-malalakshana's Birthday	03 Jun
Asarnha Bucha Day	13 Jul
H.M. King Maha Vajiralongkorn's Birthday	28 Jul
H.M. Queen Sirikit The Queen Mother's Birthday / Mother's Day	12 Aug
H. M. King Bhumibol Adulyadej Memorial Day	13 Oct
Chulalongkorn Day	24 Oct[4]
H.M. King Bhumibol Adulyadej's Birthday / Father's Day	05 Dec
Constitution Day	12 Dec[5]
New Year's Eve	31 Dec

1 - As New Year Day falls on Saturday (01 January), Monday is designated as a general holiday in substitution

2 - As National Labour Day falls on Sunday (01 May) , Monday is designated as a general holiday in substitution

3 - As Wisakha Bucha Day falls on Sunday (15 May) , Monday is designated as a general holiday in substitution

4 - As Chulalongkorn Day falls on Sunday (23 October) ; Monday is designated as a general holidays in substitution

5 - As Constitution Day falls on Saturday (10 Dec) , Monday is designated as a general holiday in substitution

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HEALTH & SAFETY MANAGEMENT SYSTEM

bsi.

Certificate of Registration

OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM

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Is included as a location on Certificate number: **OHS 685472**

And BSI location is: 0047847281-002

Operates an Occupational Health and Safety Management System which complies with the requirements of ISO 45001:2018 for the following location activity:

Provision of quantity surveying and construction cost consultancy services and monitoring of construction projects.

[Previously certified to OHS 18001 since 2018-04-13]

For and on behalf of BSI:

Chris Cheung, Head of Compliance & Risk – Asia Pacific

Original Registration Date: **2021-03-10** Expiry Date: **2024-04-12**

...making excellence a habit.™

Based on the recognized international standards of ISO 45001, We have implemented a Health and Safety Management System which is part of our Integrated Management System. Following the success of our Health & Safety accreditation in Hong Kong in 2012, we had rolled out the system across China and Macau, where an H&S coordinator is assigned in each of our Arcadis offices to assist in planning, implementing, monitoring and reporting health and safety issues.

Positive decision making and the right behavioural outcomes underpin our approach to Health & Safety, an ethos which is promoted and reinforced across all levels of our organisation as a priority. Being enveloped in a supportive culture, our staff is encouraged to not only actively identify the H&S related internal and external factors and conditions that could affect, or be affected by, us, but also feel empowered to talk about their mental health and well-being by reaching out to the Arcadis employee assistance programme (EAP).

Committed to making our business a safe, healthy and sustainable place to work, Arcadis strives to excel ourselves to achieve zero incidents in everything we do ensuring the health, safety and well-being of our staff and stakeholders. We also continue to ensure processes, procedures and systems of work are maintained to achieve the highest standards, and continual improvement, in our health and safety performance.

QUALITY MANAGEMENT SYSTEM

The Quality Management System was launched in our Hong Kong office in 1993, and have completed our conversion to the ISO 9001:2015 Standard in 2018. The System and the accreditation of ISO 9001 has also been extended to Macau as well as our eighteen China offices.

bsi.

Certificate of Registration

QUALITY MANAGEMENT SYSTEM

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Original Registration Date: 2018-04-13 Expiry Date: 2024-04-12

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This certificate is valid only if provided original copies in full. Validity of this certificate may be confirmed via the BSI website. This certificate remains the property of BSI and is bound by the conditions of the contract.

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A Member of the BSI Group of Companies.

Arcadis has set annual objectives to ensure client's expectations to be met or exceeded. Performance against these objectives is reviewed while carrying out audits quarterly. The quality management documents are also reviewed regularly and shall be updated as necessary to achieve the ongoing effectiveness of the system. To strive for operation with greater efficiency, we now focus on digitalizing the workflows and processes associated with the documents and quality activities.

Nowadays an effective Quality Management System is one of the core elements in any kind of business. Arcadis makes every effort to provide not merely quantity surveying services but also the highest quality services to meet our clients' requirements.

ENVIRONMENTAL MANAGEMENT SYSTEM

bsi.

Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM

This is to certify that: Arcadis Hong Kong Limited
17/F & 18/F Two Harbour Square
180 Wai Yip Street
Kwun Tong
Kowloon
Hong Kong

Is included as a location on Certificate number: **EMS 635471**

And BSI location id: 0067647281-002

Operates a Environmental Management System which complies with the requirements of ISO 14001:2015 for the following location activity:

Provision of quantity surveying and construction cost consultancy services and monitoring of construction projects.

For and on behalf of BSI:

Chris Cheung, Head of Compliance & Risk – Asia Pacific

Original Registration Date: **2019-04-13** Expiry Date: **2024-04-12**

...making excellence a habit.

This certificate is not the legal certificate and is for presentation purpose only.
Refer to the legal certificate for the validity of certificate and scope.
This certificate remains the property of BSI and is bound by the conditions of the contract.

Information and Contact: BSI Pacific Limited, 23/F Flex, Cambridge House, Taikoo Place, 979 King's Road, Island East, Hong Kong
A Member of the BSI Group of Companies.

As a socially responsible company, we care about our environment and are committed to conducting all our activities in an environmental friendly manner. With our management system certified to ISO 14001, we have an ambition of reducing our operations' carbon footprint in alignment with limiting global warming to 1.5°C and even achieve net zero by 2035.

In 2020, we set up an Asia Core Sustainability Team to help drive and implement the Asia Sustainability Strategy in each of our markets in Asia. This year a series of Sustainability Knowledge Café sessions, sharing environmental topics such as waste management and climate change, have already been held by inviting all interested staff to join via Teams Meeting. To show our concern over environment, our environmental data is now treated at the same level of importance as our financial data and a year-end external audit for such data will be carried out.

For Arcadis, environmental protection and resource conservation are our high-priority corporate goals. To do our best towards saving the environment, we continue to devise more environment friendly standards and practices to make the most of every opportunity we get.

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