

# Construction Cost Handbook **PHILIPPINES 2021**

Arcadis Philippines Inc.



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**Handbook Cover Photos:**

- 1. Rockwell Center**
- 2. The Aurelia**  
**Architect: Skidmore, Owings & Merrill**
- 3. Cebu Cordova Link Expressway**  
**Architect: Dissing+Weitling Architecture**
- 4. Lake Mainit Hydropower Project**

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 anticipated **Manila costs in 4th Quarter 2020.**



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## 2020

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### ARCADIS PHILIPPINES INC.

Arcadis is a global Design & Consultancy firm for natural and built assets. Applying our deep market sector insights and collective design, consultancy, engineering, project and management services we work in partnership with our clients to deliver exceptional and sustainable outcomes throughout the lifecycle of their natural and built assets.

Arcadis Philippines Inc. is the country's leading provider of construction consultancy services for natural and built assets. We are a firm recognized for creating value for our clients and improving the quality of life, creating solutions based on a blend of services. We have worked on various projects nationwide, covering both the private and public sectors and our diverse set of services cater for infrastructure, residential, commercial, industrial, education, health care, recreation facilities, hospitality and interior fit outs projects. The company's experience allows it to continue leading and setting the standards for consultancy services within the Philippine Construction Market.

### Key Facts



Offices in Manila and Cebu



300 consultants



Diversified Business Lines: Cost Management | Project & Programme Management | Environmental Sustainability | Water Consultancy | Design & Engineering | PPP & Infrastructure Consultancy | Construction Loan Monitoring



Over 1000 projects nationwide



Over 35 years of experience delivering high performance projects in the Philippines



## OUR CORE VALUES



### People First

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



### Integrity

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



### Client Success

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



### Collaboration

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



### Sustainability

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

## QUALITY POLICY STATEMENT

Our policy is to be the leading Cost Management, Environmental Sustainability, Water Consultancy, Project and Program Management firm in the Philippines providing the highest level of excellence in professionalism and integrity, working on modern, leading edge projects – integrating and coordinating each of our business lines.

Each process within the Company that determines the quality of our services shall be managed and controlled in a planned and systematic manner in accordance with our quality system documents with the highest integrity, impartiality and independency.

We see our quality system as a valuable tool and mechanism to promote, instill, further develop and bring about opportunities for improvement to our staff and our internal processes.

Essential to an effective quality system is our belief in continuous investment in professional development and structured training of our staff at all levels in core skills and knowledge.

All staff members are required to comply with this policy statement, be responsible for the quality of their work, and provide consistently high standard of service to our clients.



# CONSTRUCTION COST DATA

# 1

Construction Costs for Selected  
Asian Cities

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M & E Costs for Selected Asian Cities

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Construction Costs for Philippines

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M & E Services Costs for Philippines

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Construction Cost Specification

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Major Rates for Selected Asian Cities

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Retail Prices of Basic Construction  
Materials for Philippines

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Unit Cost for Ancillary Facilities  
for Philippines

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M & E Major Plant Costs for Philippines

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Fit-out Costs for Philippines

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Kitchen Equipment Costs  
for Philippines

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## CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	US\$/m <sup>2</sup> CFA			
	MANILA	HONG KONG	SINGAPORE	KUALA LUMPUR
<b><u>DOMESTIC</u></b>				
Apartments, high rise, average standard	1,009 - 1,422	2,990 - 3,460	1,360 - 1,505	305 - 590*
Apartments, high rise, high end	1,363 - 2,590	3,870 - 4,520	2,095 - 3,090	710 - 1,410
Terraced houses, average standard	983 - 1,203	4,080 - 4,720	1,765 - 1,950	220 - 350*
Detached houses, high end	1,909 - 3,237	5,970 up	2,245 - 2,940	740 - 1,000
<b><u>OFFICE / COMMERCIAL</u></b>				
Medium/high rise offices, average standard	999 - 1,236	2,950 - 3,390	1,765 - 1,950#	580 - 755*
High rise offices, prestige quality	1,446 - 1,823	3,540 - 4,080	1,985 - 2,130#	900 - 1,280**
Out-of-town shopping centre, average standard	849 - 1,058	2,930 - 3,430	1,985 - 2,060	545 - 725
Retail malls, high end	1,160 - 1,626	3,790 - 4,520	2,095 - 2,280	680 - 1,015
<b><u>HOTELS</u></b>				
Budget hotels - 3-star, mid market	1,269 - 1,415	3,750 - 4,000	2,205 - 2,390	1,015 - 1,420
Business hotels - 4/5-star	1,430 - 2,389	3,880 - 4,530	2,830 - 3,160	1,340 - 2,210
Luxury hotels - 5-star	1,965 - 3,783	4,530 - 5,210	2,830 - 3,160	1,935 - 2,475

<b>INDUSTRIAL</b>						
Industrial units, shell only (Conventional single storey framed units)	566 - 633	N/A	770 - 940	320 - 440		
Owner operated factories, low rise, light weight industry	761 - 951	2,270 - 2,850	N/A	430 - 530		
<b>OTHERS</b>						
Underground/basement car parks (<3 levels)	594 - 783	3,200 - 3,830	955 - 1,270	310 - 540		
Multi storey car parks, above ground (<4 levels)	504 - 725	1,910 - 2,270	660 - 940 <sup>^</sup>	220 - 350		
Schools (primary and secondary)	744 - 1,026	2,490 - 2,680	N/A	250 - 315+		
Students' residences	787 - 1,010	2,850 - 3,210	1,620 - 1,730	295 - 370 <sup>^^</sup>		
Sports clubs, multi purpose sports/leisure centres (dry sports)	1,259 - 1,831	3,740 - 4,270	2,020 - 2,130	595 - 740		
General hospitals - public sector	1,512 - 1,753	4,750 - 5,280	2,830 - 2,940	850 - 1,170		
Exchange Rate Used : US\$1 =	Php48.94	HK\$ 7.75	\$ 1.36	RM4.11		

Rates are net of GST, exclusive of contingencies and cost impact arising from COVID-19 pandemic.

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

<sup>^</sup> Open on all sides with parapet

# 6 - 12 units per floor, 46m<sup>2</sup> - 83m<sup>2</sup> per unit, excluding air-conditioning, kitchen cabinets and home appliances

<sup>^</sup> Excluding air-conditioning, kitchen cabinets and home appliances

\* Exclude tenant fit-out and raised floor

\*\* Exclude tenant fit-out

+ Schools with standard government provisions

<sup>^^</sup> Student hostels to university standard

The above costs are at 4th Quarter 2020 Levels, inclusive of preliminaries unless otherwise stated

Manila Rates are inclusive of 12% VAT but excluding Management Contract Fee

Hong Kong Rates are exclusive of contingencies

Offices of average standard are built to the following provisions:

(i) Curtain wall/window wall facade

(ii) Tenant are with screeded floor, painted wall and ceiling

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

(Cont'd)

## CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES

### CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES (Cont'd)

BUILDING TYPE	US\$/m <sup>2</sup> CFA				
	BANGKOK	MACAU	JAKARTA	INDIA	HO CHI MINH
<b>DOMESTIC</b>					
Apartments, high rise, average standard	800 - 947	2,308 - 2,823	834 - 944	585 - 665	638 - 791
Apartments, high rise, high end	1,066 - 1,312	3,223 - 4,926	1,149 - 1,297	880 - 1,060	812 - 931
Terraced houses, average standard	500 - 614	3,934 - 4,694	443 - 576	405 - 425	430 - 505
Detached houses, high end	866 - 1,046	4,798 - 6,242	1,202 - 1,343	530 - 560	491 - 599
<b>OFFICE / COMMERCIAL</b>					
Medium/high rise offices, average standard	800 - 947	2,657 - 3,430	822 - 912	460 - 500	746 - 864
High rise offices, prestige quality	999 - 1,279	3,430 - 3,753	1,295 - 1,434	580 - 610	861 - 1,173
Out-of-town shopping centre, average standard	683 - 880	2,502 - 3,753	708 - 783	450 - 490	N/A
Retail malls, high end	916 - 963	3,934 - 4,746	780 - 845	630 - 675	697 - 913
<b>HOTELS</b>					
Budget hotels - 3-star, mid market	1,249 - 1,378	3,495 - 3,959	1,430 - 1,689	865 - 960	1,384 - 1,694
Business hotels - 4/5-star	1,599 - 1,827	4,746 - 5,673	1,950 - 2,106	1,350 - 1,600	N/A
Luxury hotels - 5-star	1,866 - 2,159	5,673 - 6,706	2,071 - 2,336	1,705 - 1,870	1,748 - 2,098

<b>INDUSTRIAL</b>									
Industrial units, shell only (Conventional single storey framed units)	533 - 664	N/A	380 - 414	365 - 420	306 - 386				
Owner operated factories, low rise, light weight industry	N/A	N/A	413 - 456	385 - 450	347 - 457				
<b>OTHERS</b>									
Underground/basement car parks (<3 levels)	600 - 797	2,076 - 3,044	587 - 721	295 - 320	633 - 756				
Multi storey car parks, above ground (<4 levels)	200 - 325	1,148 - 1,509	380 - 414	245 - 265	407 - 447				
Schools (primary and secondary)	N/A	2,295 - 2,657	N/A	305 - 340	535 - 584				
Students' residences	N/A	1,818 - 2,115	N/A	335 - 370	535 - 687				
Sports clubs, multi purpose sports/leisure centres (dry sports)	N/A	N/A	1,200 - 1,798	620 - 650	791 - 846				
General hospitals - public sector	N/A	N/A	N/A	675 - 740	N/A				
Exchange Rate Used : US\$1 =	BAHT 30.275	MOP 7.98	IDR 14,458	INR 74.39	VND 23,500				

The above costs are 4th Quarter 2020 levels, inclusive of preliminaries unless otherwise stated.

Macau Rates are exclusive of contingencies and any management contract fee

Ho Chi Minh

Rates are net of VAT and contingencies

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

Bangkok

Rates exclude VAT and contingencies

The data for Jakarta is provided by PT Lantera Sejahtera Indonesia

Jakarta

(Cont'd)

## CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES

### CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES (Cont'd)

BUILDING TYPE	US\$/m <sup>2</sup> CFA			
	SHANGHAI =	BEIJING =	SHENZHEN/ GUANGZHOU =	CHONGQING/ CHENGDU
<b><u>DOMESTIC</u></b>				
Apartments, high rise, average standard	740 - 816	652 - 716	627 - 690	603 - 718
Apartments, high rise, high end	1,672 - 1,822	1,579 - 1,798	1,009 - 1,104	976 - 1,231
Terraced houses, average standard	1,023 - 1,114	933 - 1,011	940 - 1,090	833 - 985
Detached houses, high end	1,799 - 1,908	1,793 - 1,871	1,803 - 2,049	1,061 - 1,212
<b><u>OFFICE / COMMERCIAL</u></b>				
Medium/high rise offices, average standard	941 - 1,243	912 - 1,228	876 - 976	958 - 1,108
High rise offices, prestige quality	1,220 - 1,669	1,482 - 2,017	1,280 - 1,544	1,210 - 1,629
Out-of-town shopping centre, average standard	N/A	695 - 929	844 - 926	773 - 989
Retail malls, high end	1,294 - 1,669	1,257 - 1,730	1,226 - 1,714	1,152 - 1,613
<b><u>HOTELS</u></b>				
Budget hotels - 3-star, mid market	1,039 - 1,267	1,028 - 1,267	1,110 - 1,221	1,038 - 1,281
Business hotels - 4/5-star	1,674 - 2,267	1,719 - 2,269	1,794 - 2,561	1,867 - 2,331
Luxury hotels - 5-star	2,264 - 2,707	2,188 - 2,816	2,439 - 2,688	2,301 - 2,756



<b>INDUSTRIAL</b>					
Industrial units, shell only (Conventional single storey framed units)	293 - 358	287 - 350	327 - 390	471 - 593	
Owner operated factories, low rise, light weight industry	453 - 566	555 - 636	N/A	N/A	
<b>OTHERS</b>					
Underground/basement car parks (<3 levels)	776 - 1,082	794 - 873	579 - 924	457 - 642	
Multi storey car parks, above ground (<4 levels)	398 - 555	478 - 483	413 - 456	363 - 449	
Schools (primary and secondary)	593 - 749	553 - 714	459 - 505	483 - 535	
Students' residences	434 - 592	391 - 553	290 - 320	337 - 490	
Sports clubs, multi purpose sports/leisure centres (dry sports)	1,001 - 1,229	947 - 955	800 - 880	765 - 842	
General hospitals - public sector	1,529 - 1,972	1,245 - 1,559	1,212 - 1,515	1,225 - 1,530	
Exchange Rate Used : US\$1 =	RMB 6.60	RMB 6.60	RMB 6.60	RMB 6.60	

The above costs are 4th Quarter 2020 levels, inclusive of preliminaries unless otherwise stated.

Beijing, Shanghai, Guangzhou/Shenzhen, Chongqing/Chengdu

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

## M & E COSTS FOR SELECTED ASIAN CITIES

### M&E COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	MANILA=	HONG KONG	SINGAPORE*	KUALA LUMPUR
	(PHP/m <sup>2</sup> )	(HK\$/m <sup>2</sup> )	(S\$/m <sup>2</sup> )	(RM/m <sup>2</sup> )
<b><u>MECHANICAL SERVICES</u></b>				
Offices	4,000 - 7,150	1,900 - 2,600	153 - 249	330 - 495
Industrial *	800 - 1,600	200 - 300	34 - 117	90 - 190
Hotels	3,500 - 11,190	2,000 - 2,500	215 - 278	315 - 595
Shopping Centres	2,890 - 7,070	2,100 - 2,600	147 - 246	310 - 480
Apartment	1,390 - 4,450	800 - 2,000up	90 - 170	125 - 210
<b><u>ELECTRICAL SERVICES</u></b>				
Offices	3,500 - 7,690	1,700 - 2,400	158 - 258	300 - 465
Industrial **	2,000 - 3,500	650 - 850	55 - 136	155 - 195
Hotels	4,900 - 10,200	1,900 - 2,500	277 - 367	310 - 550
Shopping Centres	3,060 - 6,600	1,700 - 2,400	160 - 304	305 - 465
Apartment	3,600 - 6,300	1,000 - 2,100up	112 - 236	115-215
<b><u>HYDRAULIC SERVICES</u></b>				
Offices	1,230 - 2,200	700 - 850	26 - 55	45 - 70
Industrial	800 - 1,400	500 - 650	18 - 36	45 - 55
Hotels	2,250 - 6,820	1,800 - 2,700	122 - 172	185 - 275

Shopping Centres	1,220 - 1,650	700 - 900	46 - 80	35 - 40
Apartment	2,250 - 4,100	1,300 - 2,000	79 - 143	55 - 100
<b><u>FIRE SERVICES</u></b>				
Offices	980 - 1,720	550 - 700	33 - 56	65 - 85
Industrial	1,000 - 2,500	400 - 500	23 - 51	55 - 70
Hotels	1,100 - 2,120	600 - 850	28 - 55	65 - 100
Shopping Centres	1,090 - 1,730	550 - 700	37 - 56	60 - 80
Apartment	980 - 1,350	100 - 600	24 - 51	20 - 30
<b><u>LIFTS / ESCALATORS</u></b>				
Offices	1,800 - 4,930	700 - 1,100	63 - 162	135 - 355
Industrial	0 - 730	550 - 750	41 - 104	55 - 180
Hotels	1,800 - 3,500	550 - 850	49 - 82	105 - 295
Shopping Centres	1,600 - 3,010	850 - 1,000	56 - 90	100 - 120
Apartment	850 - 3,440	450 - 850	41 - 113	70 - 110

Costs are at 4th Quarter 2020 levels, exclusive of contingencies unless otherwise stated.

Note:

Manila: Transformer, included in Electrical Services

Singapore: Rates are nett of GST, excluding BAS and cost impact arising from

COVID-19 pandemic

Hong Kong: -nil-

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

(Cont'd)

## M&amp;E COSTS FOR SELECTED ASIAN CITIES

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

BUILDING TYPE	BANGKOK <sup>##</sup>	MACAU	JAKARTA <sup>=</sup>	INDIA	HO CHI MINH
	(BAHT/m <sup>2</sup> )	MOP/m <sup>2</sup>	(IDR'000/m) <sup>2</sup>	INR/m <sup>2</sup>	VND('000)/m <sup>2</sup>
<b><u>MECHANICAL SERVICES</u></b>					
Offices	4,400 - 4,800	N/A	1,013 - 1,166	5,110 - 6,995	2,132 - 3,035
Industrial *	1,550 - 1,600	N/A	459 - 733	2,400 - 4,465	N/A
Hotels	4,600 - 5,200	2,590 - 2,990	1,044 - 1,356	5,920 - 7,000	N/A
Shopping Centres	4,600 - 4,800	2,350 - 2,940	892 - 1,071	5,215 - 7,130	N/A
Apartment	4,300 - 4,500	900 - 1,200	997 - 1,266	2,690 - 3,765	1,601 - 2,193
<b><u>ELECTRICAL SERVICES</u></b>					
Offices	3,400 - 3,800	N/A	890 - 1,092	4,620 - 6,930	2,204 - 2,641
Industrial **	1,950 - 2,200	N/A	580 - 722	2,720 - 4,925	N/A
Hotels	3,800 - 4,500	2,590 - 3,090	843 - 1,161	5,125 - 7,625	N/A
Shopping Centres	2,800 - 3,200	2,590 - 2,940	712 - 897	4,405 - 6,430	N/A
Apartment	2,800 - 3,350	1,000 - 1,290	939 - 1,097	2,330 - 3,330	1,938 - 2,443
<b><u>HYDRAULIC SERVICES</u></b>					
Offices	780 - 900	N/A	216 - 311	800 - 1,345	340 - 630
Industrial	750 - 790	N/A	137 - 211	550 - 1,050	N/A
Hotels	1,400 - 1,650	1,790 - 2,190	986 - 1,161	4,210 - 6,910	N/A

Shopping Centres	790 - 950	600 - 790	195 - 301	1,200 - 2,365	N/A
Apartment	1,200 - 1,400	1,490 - 1,990	997 - 1,181	1,900 - 2,865	660 - 770
<b><u>FIRE SERVICES</u></b>					
Offices	780 - 850	N/A	296 - 411	1,290 - 1,835	734 - 1,209
Industrial	730 - 750	N/A	148 - 211	590 - 885	N/A
Hotels	780 - 890	910 - 1,120	327 - 406	1,500 - 2,090	N/A
Shopping Centres	780 - 820	610 - 810	274 - 321	1,235 - 1,555	N/A
Apartment	750 - 850	250 - 300	311 - 338	690 - 895	515- 646
<b><u>LIFTS / ESCALATORS</u></b>					
Offices	1,100 - 1,400	N/A	s580 - 1,171	1,020 - 1,340	680 - 1,300
Industrial	N/A	N/A	N/A	680 - 880	N/A
Hotels	1,100 - 1,400	610 - 810	697 - 1,087	1,530 - 2,225	N/A
Shopping Centres	300 - 450	460 - 710	321 - 865	1,790 - 2,290	1,390 - 1,960
Apartment	600 - 800	460 - 610	707 - 881	920 - 1,200	770 - 1,120

Costs are at 4th Quarter 2020 levels, exclusive of contingencies unless otherwise stated.

Note:

Macau:

India:

Bangkok:

Jakarta:

Based upon nett enclosed area and nett of VAT  
The data for Jakarta is provided by PT Lantera Sejahtera Indonesia

-nil-

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

(Cont'd)

## M&amp;E COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	SHANG HAI	BEIJING	SHENZHEN / GUANGZHOU	CHONGQING / CHENGDU
	(RMB/m <sup>2</sup> )	(RMB/m <sup>2</sup> )	(RMB/m <sup>2</sup> )	(RMB/m <sup>2</sup> )
<b><u>MECHANICAL SERVICES</u></b>				
Offices	822 - 1,045	783 - 1,212	775 - 1,150	758 - 1,030
Industrial *	182 - 307	172 - 283	155 - 285	146 - 242
Hotels	1,040 - 1,356	960 - 1,236	1,080 - 1,350	970 - 1,333
Shopping Centres	1,102 - 1,160	814 - 980	715 - 910	929 - 1,050
Apartment	330 - 436	144 - 464	152 - 410	157 - 313
<b><u>ELECTRICAL SERVICES</u></b>				
Offices	645 - 728	475 - 859	540 - 795	470 - 687
Industrial **	323 - 457	329 - 464	320 - 459	273 - 374
Hotels	703-898	726 - 972	715 - 980	606 - 864
Shopping Centres	561-703	495 - 697	500 - 690	530 - 687
Apartment	272-399	261 - 410	285 - 500	237 - 354
<b><u>HYDRAULIC SERVICES</u></b>				
Offices	115 - 171	98 - 144	103 - 184	89 - 126
Industrial	92 - 135	98 - 144	89 - 124	89 - 126
Hotels	389 - 535	381 - 495	390 - 500	343 - 470

Shopping Centres	145 - 195	144 - 206	114 - 168	106 - 157
Apartment	177 - 240	175 - 236	150 - 280	106 - 187
<b><u>FIRE SERVICES</u></b>				
Offices	241 - 338	186 - 273	230 - 350	250 - 303
Industrial	167 - 278	155 - 232	143 - 272	136 - 242
Hotels	306 - 412	226 - 387	285 - 425	263 - 364
Shopping Centres	273 - 407	226 - 387	248 - 383	263 - 384
Apartment	58 - 108	72 - 139	72 - 185	61 - 116
<b><u>LIFTS / ESCALATORS</u></b>				
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	303 - 460
Apartment	173 - 306	177 - 292	130 - 450	146 - 253

Costs are at 4th Quarter 2020 levels, exclusive of contingencies unless otherwise stated.

Note:

Shanghai:

-nil-

\* Generally without A/C.

Beijing:

-nil-

\*\* Excludes special power supply.

Guangzhou/ShenzHen:

-nil-

Chongqing/Chengdu:

-nil-

## CONSTRUCTION COSTS FOR PHILIPPINES

### CONSTRUCTION COSTS FOR PHILIPPINES

BUILDING TYPE	PESO/m <sup>2</sup>	
	BUILDING	SERVICES
<b><u>DOMESTIC</u></b>		
Apartments, high rise, average standard	40,360 - 56,112	9,040 - 13,500
Apartments, high rise, high end	54,527 - 107,133	12,180 - 19,640
Terraced houses, average standard	45,201 - 53,865	2,910 - 5,000
Detached houses, high end	84,348 - 142,074	9,060 - 16,340
<b><u>OFFICE / COMMERCIAL</u></b>		
Medium/high rise offices, average standard	37,390 - 44,100	11,510 - 16,380
High rise offices, prestige quality	56,000 - 65,523	14,770 - 23,690
Out-of-town shopping centre, average standard	31,710 - 36,905	9,860 - 14,870
Retail malls, high end	45,846 - 61,091	10,930 - 18,470
<b><u>HOTELS</u></b>		
Budget hotels - 3-star, mid market	48,547 - 51,031	13,550 - 18,200
		TOTAL
		49,400 - 69,612
		66,707 - 126,773
		48,111 - 58,865
		93,408 - 158,414
		48,900 - 60,480
		70,770 - 89,213
		41,570 - 51,775
		56,776 - 79,561
		62,097 - 69,231



Business hotels - 4/5-star	55,225 - 92,220	14,750 - 24,700	69,975 - 116,920
Luxury hotels - 5-star	78,554 - 151,300	17,630 - 33,830	96,184 - 185,130
<b>INDUSTRIAL</b>			
Industrial units, shell only (conventional single story framed units)	23,187 - 23,292	4,500 - 7,700	27,687 - 30,992
Owner operated factories, low rise, light weight industry	32,741 - 36,797	4,500 - 9,730	37,241 - 46,527
<b>OTHERS</b>			
Underground/basement car parks (<3 levels)	24,212 - 28,430	4,860 - 9,870	29,072 - 38,300
Multi storey car parks, above ground(<4 levels)	20,035 - 25,816	4,630 - 9,680	24,665 - 35,496
Schools (primary and secondary)	27,678 - 31,734	8,740 - 18,480	36,418 - 50,214
Students' residences	30,099 - 34,336	8,430 - 15,090	38,529 - 49,426
Sports clubs, multi purpose sports/leisure centres (dry sports) with a/c and including FF&E	53,783 - 77,095	7,820 - 12,530	61,603 - 89,625
General hospitals - public sector	57,820 - 61,380	16,180 - 24,410	74,000 - 85,790

Costs are at 4th Quarter 2020 levels. Manila building costs are expected to increase by approximately 0.5% per month (compounded) during 2020.

## M&E COSTS FOR PHILIPPINES

BUILDING TYPE	PESO/m <sup>2</sup>					
	TOTAL SERVICES	ELECTRICAL SERVICES	MECHANICAL SERVICES	FIRE SERVICES	LIFTS / ESCALATOR	PLUMBING SERVICES
<b><u>DOMESTIC</u></b>						
Apartments, high rise, average standard	9,040 - 13,500	3,600 - 4,300	1,390 - 2,600	950 - 1,200	850 - 2,300	2,250 - 3,100
Apartments, high rise, high end	12,180 - 19,640	3,900 - 6,300	2,530 - 4,450	950 - 1,350	2,200 - 3,440	2,600 - 4,100
Terraced houses, average standard	2,910 - 5,000	1,400 - 1,800	680 - 1,500	--	--	830 - 1,700
Detached houses, high end	9,060 - 16,340	3,000 - 5,800	3,100 - 4,650	--	--	2,960 - 5,890
<b><u>OFFICE / COMMERCIAL</u></b>						
Medium/high rise offices, average standard	11,510 - 16,380	3,500 - 4,700	4,000 - 5,680	980 - 1,350	1,800 - 3,000	1,230 - 1,650
High rise offices, prestige quality	14,770 - 23,690	4,800 - 7,690	4,500 - 7,150	1,070 - 1,720	2,900 - 4,930	1,500 - 2,200
Out-of-town shopping centre, average standard	9,860 - 14,870	3,060 - 5,100	2,890 - 5,100	1,090 - 1,420	1,600 - 1,800	1,220 - 1,450
Retail malls, high end	10,930 - 18,470	3,600 - 6,000	3,310 - 6,840	1,300 - 1,730	1,450 - 2,300	1,270 - 1,600
<b><u>HOTELS</u></b>						
Budget hotels - 3-star, mid market	13,550 - 18,200	4,900 - 5,800	3,500 - 5,000	1,100 - 1,200	1,800 - 2,600	2,250 - 3,600



Business hotels - 4/5-star	14,750 - 24,700	5,200 - 9,800	4,250 - 6,100	1,200 - 1,500	1,800 - 2,900	2,300 - 4,400
Luxury hotels - 5-star	17,630 - 33,830	5,500 - 10,200	4,950 - 11,190	1,480 - 2,120	2,200 - 3,500	3,500 - 6,820
<b>INDUSTRIAL</b>						
Industrial units, shell only (conventional single story framed units)	4,500 - 7,700	2,000 - 3,500	800 - 1,500	900 - 1,000	0 - 400	800 - 1,300
Owner operated factories, low rise, light weight industry	4,500 - 9,730	2,000 - 3,500	800 - 1,600	900 - 2,500	0 - 730	800 - 1,400
<b>OTHERS</b>						
Underground/basement car parks (<3 levels)	4,860 - 9,870	2,000 - 3,500	900 - 2,250	900 - 1,610	260 - 570	800 - 1,940
Multi storey car parks, above ground (<4 levels)	4,630 - 9,680	1,800 - 3,300	650 - 2,210	1,020 - 1,960		1,160 - 2,210
Schools (primary and secondary)	8,740 - 18,480	3,300 - 4,900	1,450 - 6,580	900 - 1,370	1,600 - 2,330	1,490 - 3,300
Students' residences	8,430 - 15,090	3,600 - 4,300	850 - 2,440	850 - 1,570	1,140 - 3,130	1,990 - 3,650
Sports clubs, multi purpose sports/leisure centres (dry sports) with a/c and including FF&E	7,820 - 12,530	2,900 - 3,770	1,800 - 2,870	480 - 1,030	960 - 2,210	1,680 - 2,650
General hospitals - public sector	16,180-24,410	5,000-8,000	5,320-7,780	1,350-2,100	1,990-2,800	2,520-3,730

Costs are at 4th Quarter 2020 levels.

## CONSTRUCTION COST SPECIFICATION

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

The costs per square meter are based on construction floor areas measured to the outside face of the external walls / external perimeter including lift shafts, stairwells, plant rooms, water tanks, and the like.

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

The standards for each category of building vary from country to country and do not necessarily follow those of Manila.

All costs are in US\$/m<sup>2</sup> CFA. Fluctuation in exchange rates may lead to changes in construction costs expressed in U.S. Dollars.

FF&E refers to loose furniture, fixtures and equipment. FF&E is excluded from office, residential and retail project costs, but are included in hotels and country club project costs.

### DOMESTIC

Average standard apartment buildings of 6-8 flats per floor, 50m<sup>2</sup>-150m<sup>2</sup> per flat, façade comprising textured paint and punch window, internal finishes comprising wood finish, plaster and paint and painted rubbed concrete ceiling to residential units and local ceramic tiles to toilets.

Luxury residential façade comprised of window wall, textured paint with stone accents, finished with



homogeneous tiles, wood cladding and covered timber ceiling to lobby, combination of wood planks, plaster and paint and gypsum board to residential units and homogeneous tiles to toilets.

Air conditioning, gensets, automatic sprinkler system, complete plumbing and disposal system, complete fire alarm and detection system, CATV system are allowed for luxury apartments and prestige houses.

Services to standard apartment also include for paging system and Davit type gondola. Services to luxury residential also include CCTV cameras on lobby, track mounted type gondola and helipad provision.

#### **OFFICE/COMMERCIAL**

Based on building 30-40 storeys high with floor plate minimum 1,000 m<sup>2</sup> per level. Average standard offices and shopping centres have bare finish and exclude A/C ducting and light fittings to tenants areas. Prestige offices have curtain wall elevations, stone finished lobbies.

#### **INDUSTRIAL**

Owner operated factories exclude manufacturing equipment, air-conditioning and special services provisions.

#### **HOTELS**

F.F. & E. includes interior decoration and loose furniture, etc. but excludes hotel operator's items (e.g. cutlery, crockery, linen etc.). Includes 1 level of basement.

#### **OTHERS**

Carparks to be multi-storey, above ground. Schools with standard government provisions. Student hostels to university standard. Hospitals include fit-out to nursing rooms, hospital facilities; services i.e., oxygen piping, A/C, genset, ultrapure water system, fire suppression system and special type plumbing fixtures; fit-out to doctor's offices is excluded.

## MAJOR RATES FOR SELECTED ASIAN CITIES

DESCRIPTION	UNIT	MANILA	HONG KONG	SINGAPORE	KUALALUMPUR
		(PHP)	(HK\$)	(S\$)	(RM)
1. Excavating basement ≤ 2.00m deep	m <sup>3</sup>	270	210	20	15 - 26
2. Excavating for footings ≤ 1.50m deep	m <sup>3</sup>	538	190	20	15 - 26
3. Remove excavated materials off site	m <sup>3</sup>	350	290	15.00-20.00	18 - 30
4. Hardcore bed blinded with fine materials	m <sup>3</sup>	1,400-1,600	940	50	72 - 100
5. Mass concrete grade 15	m <sup>3</sup>	4,400	1,050	177.00-187.00	225 - 295
6. Reinforced concrete grade 30	m <sup>3</sup>	4,899	1,150	117.00-122.00	250 - 300
7. Mild steel rod reinforcement	kg	51-55	9.5	1.25-1.35	3.25 - 3.7
8. High tensile rod reinforcement	kg	52-55	9.5	1.25-1.35	3.25 - 3.7
9. Sawn formwork to soffits of suspended slabs	m <sup>2</sup>	950-1,200	400	40	36 - 46
10. Sawn formwork to columns and walls	m <sup>2</sup>	1,200	400	40	43 - 50
11. 112.5mm thick brick walls	m <sup>2</sup>	N/A	390	35 - 40	43 - 50
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m <sup>2</sup>	1,500	1,000	43	70 - 90

13. Aluminium casement windows, single glazed	m <sup>2</sup>	12,500	3,800	290	380 - 600
14. Structural steelwork - beams, stanchions and the like	kg	180	35	4.00-4.50	6.50 - 9.5
15. Steelwork - angles, channels, flats and the like	kg	160	42	4.00-4.50	6.50 - 9.5
16. 25mm cement and sand (1:3) paving	m <sup>2</sup>	650	155	21	17 - 26
17. 20mm cement and sand (1:4) plaster to walls	m <sup>2</sup>	500-700	160	22	18 - 28
18. Ceramic tiles bedded to floor screed (measured separately)	m <sup>2</sup>	1,800	400	74	55 - 80
19. 12mm fibrous plasterboard ceiling lining	m <sup>2</sup>	1,400-1,645	570	30	36 - 46
20. Two coats of emulsion paint to plastered surfaces	m <sup>2</sup>	500-800	90	3.50-4.00	3.40 - 5.00
<b>Average expected preliminaries</b>	<b>%</b>	<b>12-18</b>	<b>10 - 15</b>	<b>12-15</b>	<b>6 - 15</b>

The above costs are based on lump sum fixed price contract rate exclusive of preliminaries and contingencies unless otherwise stated.

Manila:  
 Item 13 - Aluminium with anodized finish; 6mm thick  
 Hong Kong:  
 Item 3 - Rate including dumping charges  
 Singapore:  
 Rates are nett of GST  
 Item 5 - Rate for lean concrete blinding

(Cont'd)

## MAJOR RATES FOR SELECTED ASIAN CITIES

DESCRIPTION	UNIT	BANGKOK	MACAU	JAKARTA	INDIA	HO CHI MINH
		(BAHT)	(MOP)	IDR '000	(INR)	(VND)
1. Excavating basement ≤ 2.00m deep	m <sup>3</sup>	120 - 140	150	65	230	72,400
2. Excavating for footings ≤ 1.50m deep	m <sup>3</sup>	120 - 140	180	100	215	72,400
3. Remove excavated materials off site	m <sup>3</sup>	120 - 150	150	50	NA	84,700
4. Hardcore bed blinded with fine materials	m <sup>3</sup>	650 - 750	1,300	650	4,570	280,900
5. Mass concrete grade 15	m <sup>3</sup>	2,300 - 2,500	1,500	950	6,180	1,606,400
6. Reinforced concrete grade 30	m <sup>3</sup>	2,800 - 3,200	1,400	1,135	7,735	1,912,291
7. Mild steel rod reinforcement	kg	25 - 28	7.5	11	67	17,864
8. High tensile rod reinforcement	kg	24 - 27	7.5	11	64	17,988
9. Sawn formwork to soffits of suspended slabs	m <sup>2</sup>	450 - 500	280	200	700	225,750
10. Sawn formwork to columns and walls	m <sup>2</sup>	450 - 500	280	195	753	257,250
11. 112.5mm thick brick walls	m <sup>2</sup>	650 - 750	450	250	1,140	312,780
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m <sup>2</sup>	1,200	N/A	300	1,765	401,110 - 597,600



13. Aluminium casement windows, single glazed	m <sup>2</sup>	7,000	4,000	1,650	6,230	6,315,000
14. Structural steelwork - beams, stanchions and the like	kg	60 - 75	30	26	130	48,650
15. Steelwork - angles, channels, flats and the like	kg	60 - 75	40	26	130	48,650
16. 25mm cement and sand (1:3) paving	m <sup>2</sup>	200 - 240	120	90	493	94,000
17. 20mm cement and sand (1:4) plaster to walls	m <sup>2</sup>	220 - 260	150	100	405	144,000
18. Ceramic tiles bedded to floor screed (measured separately)	m <sup>2</sup>	1,200	450	200	1,765	674,180
19. 12mm fibrous plasterboard ceiling lining	m <sup>2</sup>	750 - 850	650	215	1,400	245,700
20. Two coats of emulsion paint to plastered surfaces	m <sup>2</sup>	140 - 180	200	35	220	91,000
<b>Average expected preliminaries</b>	<b>%</b>	<b>12 - 18</b>	<b>10</b>	<b>8-10</b>	<b>9-13</b>	<b>8-12</b>

The above costs are based on lump sum fixed price contract rate exclusive of preliminaries and contingencies unless otherwise stated.

Bangkok: Rates are nett of VAT

Macao: -nil

Ho Chi Minh: Rates are nett of VAT

India:  
All rates above are Supply & 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

Jakarta: The data for Jakarta is provided by PT Lantera Sejahtera Indonesia

(Cont'd)

## MAJOR RATES FOR SELECTED ASIAN CITIES

DESCRIPTION	UNIT	SHANG HAI	BEIJING	SHENZHEN / GUANGZHOU	CHONGQING / CHENGDU
		(RMB)	(RMB)	(RMB)	(RMB)
1. Excavating basement ≤ 2.00m deep	m <sup>3</sup>	30	33	40	35
2. Excavating for footings ≤ 1.50m deep	m <sup>3</sup>	30	35	40	35
3. Remove excavated materials off site	m <sup>3</sup>	190	120	110	65
4. Hardcore bed blinded with fine materials	m <sup>3</sup>	190	190	190	180
5. Mass concrete grade 15	m <sup>3</sup>	660	610	740	530
6. Reinforced concrete grade 30	m <sup>3</sup>	700	650	800	560
7. Mild steel rod reinforcement	kg	5.4	5.6	6	5.5
8. High tensile rod reinforcement	kg	5.4	5.6	6	5.5
9. Sawn formwork to soffits of suspended slabs	m <sup>2</sup>	95	90	90	65
10. Sawn formwork to columns and walls	m <sup>2</sup>	90	85	85	60
11. 112.5mm thick brick walls	m <sup>2</sup>	100	80	100	80
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m <sup>2</sup>	N/A	N/A	NA	NA

13. Aluminium casement windows, single glazed	m <sup>2</sup>	700	815	700	670
14. Structural steelwork - beams, stanchions and the like	kg	10	11	12.5	10
15. Steelwork - angles, channels, flats and the like	kg	8.5	9.5	11.5	9
16. 25mm cement and sand (1:3) paving	m <sup>2</sup>	35	32	36	30
17. 20mm cement and sand (1:4) plaster to walls	m <sup>2</sup>	35	32	36	30
18. Ceramic tiles bedded to floor screed (measured separately)	m <sup>2</sup>	160	145	155	140
19. 12mm fibrous plasterboard ceiling lining	m <sup>2</sup>	160	162	165	150
20. Two coats of emulsion paint to plastered surfaces	m <sup>2</sup>	40	32	35	35
<b>Average expected preliminaries</b>	<b>%</b>	<b>6-12</b>	<b>5-12</b>	<b>7-10</b>	<b>6-12</b>

The above costs are based on lump sum fixed price contract rate exclusive of preliminaries and contingencies unless otherwise stated.

Shanghai: Item 11 - Rate for 120mm thick concrete block walls

Guangzhou/Shenzhen:

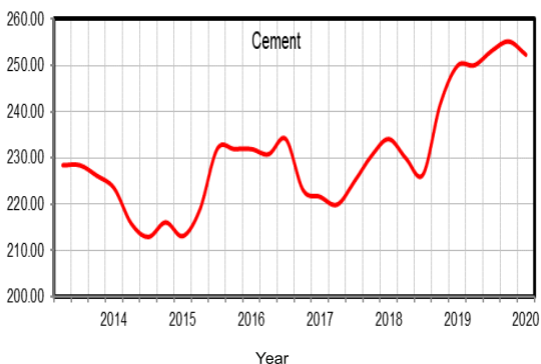
-nil-

Beijing, Chongqing/Chengdu: Item 13 - rate for double glazed window

## RETAIL PRICES OF BASIC CONSTRUCTION

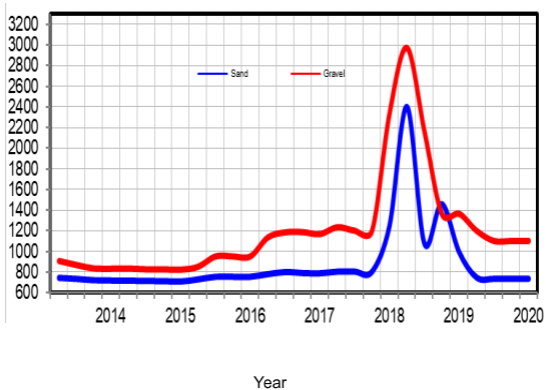
### Cement

Php / bag (40kg)



### Aggregates

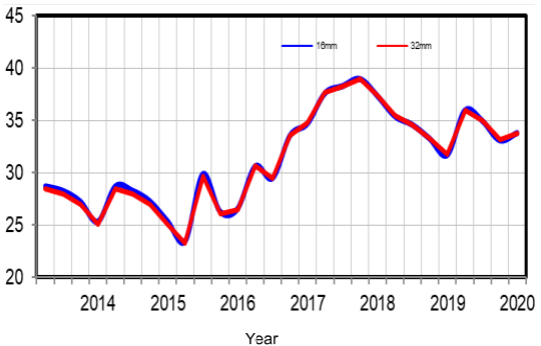
Php / m<sup>3</sup>



## MATERIALS FOR PHILIPPINES

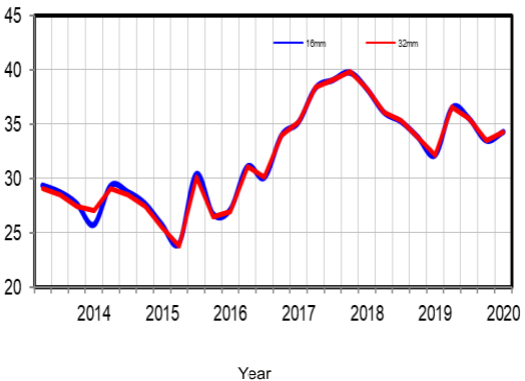
### Reinforcing Bar (Intermediate Grade - Grade 40; 275 MPa)

Php / kg



### Reinforcing Bar (High Yield Grade - Grade 60; 400 MPa)

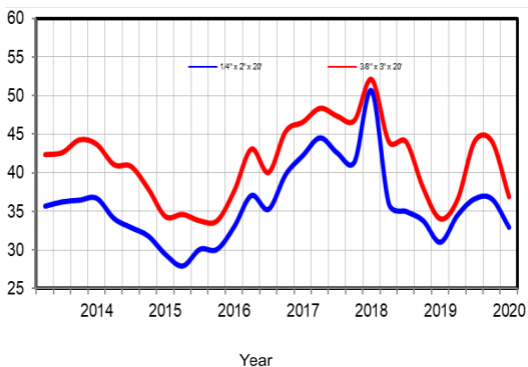
Php / kg



## RETAIL PRICES OF BASIC CONSTRUCTION

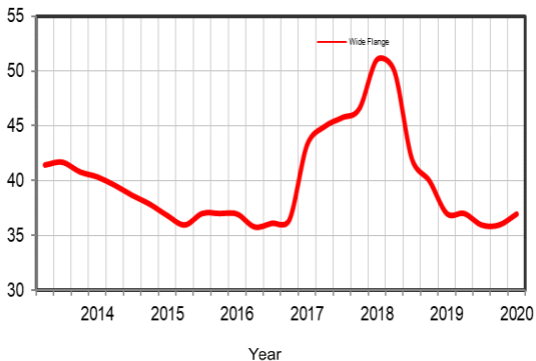
### Structural Steel (Angle Bar; A36)

Php / kg



### Structural Steel (Wide Flange)

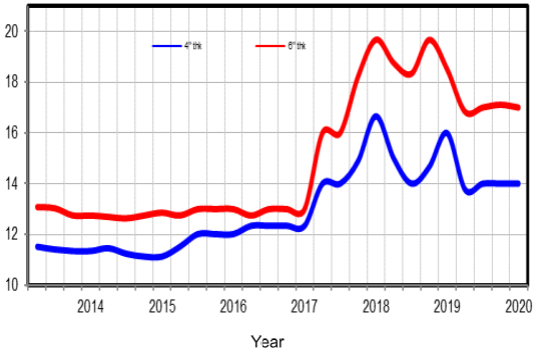
Php / kg



## MATERIALS FOR PHILIPPINES

### Ordinary Concrete Hollow Blocks

Php / piece



## UNIT COSTS FOR ANCILLARY FACILITIES FOR PHILIPPINES

DESCRIPTION	UNIT	PESO
<b>SQUASH COURTS</b>		
Single court with glass backwall including associated mechanical and electrical services but including any public facilities (enclosing structure not included)	per court	1,500,000
<b>TENNIS COURTS</b>		
Single court on grade with acrylic surfacing completed with chain link fence	per court	2,000,000
Single court on grade with artificial turf surfacing including chain link fence	per court	2,500,000
Extra for lighting	per court	500,000
<b>SWIMMING POOLS</b>		
Half Olympic (25m x 16m) 6-lanes outdoor swimming pool built in ground, fully tiled, complete with 5m wide deck and associated equipment	per pool	14,000,000
Half Olympic (25m x 16m) 6-lanes indoor swimming pool with suspended structure (enclosing structure not included) fully tiled and completed with 5m wide deck, including mechanical ventilation and associated equipment.	per pool	18,000,000
Extra for heating equipment	per pool	1,500,000
Extra for salt chlorine generator	per pool	500,000
Amenity pool outdoor approx. 300m <sup>2</sup> swimming pool with kiddie pool & jacuzzi (pooldeck & structure not included) fully tiled including associated equipment & pool lighting	per pool	10,000,000 - 15,000,000
<b>BASKETBALL COURTS</b>		
Exposed court, approximately 975m <sup>2</sup> including player benches and excluding equipment	per court	6,000,000 - 10,500,000
Covered court approximately 975m <sup>2</sup> , including metal viewing seats, built-furnitures, provision for T&B, etc*	per court	20,000,000 - 40,000,000

\*includes provision for forward/rear fold ceiling mounted basketball goal.  
2020 4Q Rates



DESCRIPTION	UNIT	PESO
<b>PLAYGROUND EQUIPMENT</b>		
Outdoor playground equipment comprising various activities and safety mat	per set	500,000 - 1,500,000
<b>SAUNAS</b>		
Sauna room for 4-6 people complete with all accessories (enclosing structure not included)	per room	500,000
<b>STEAM BATHS</b>		
Steam bath for 4-6 people complete with all accessories (enclosing structure not included)	per room	800,000
<b>GOLF COURSES</b>		
(Based on 'Average Cost Model' of an 18 hole golf course in Asia) excluding fairway construction and rough hydroseeding	per hole	30,000,000
Including fairway construction and rough hydroseeding	per hole	35,000,000
<b>GOLF SIMULATOR</b>		
Complete golf simulation system complete with projector, high impact projection screen, artificial grass putting turf, putting green cup and control computer with software overall size 4m x7m x 3m high (enclosing structure not included)	per set	3,000,000 - 4,500,000

## M & E MAJOR PLANT COSTS FOR THE PHILIPPINES

DESCRIPTION	UNIT	COST (Php)
1. Water cooled chiller; conventional bearing	per TR	19,000-36,000
2. Water cooled chiller; magnetic bearing	per TR	37,000-50,000
3. Air-cooled chillers	per TR	34,500-46,000
4. Cooling Towers; induced draft	per GPM	2,900-5,000
5. Air Handling Units (AHU)	per TR	18,500-35,000
6. Packaged Water-Cooled Chiller units (PWCU)	per TR	23,000-43,700
7. Fire Pumps; electric motor driven; up to 180 psi	per GPM	1,900-4,900
8. Fire Pumps; electric motor driven; 180 to 295 psi	per GPM	4,400-9,600
9. Fire Pumps; diesel engine driven; up to 180 psi	per GPM	2,500-5,400
10. Fire Pumps; diesel engine driven; 180 to 295 psi	per GPM	4,600-10,600
11. Air to Water Heat Pumps (KW based on heating capacity)	per KW	32,200-43,300
12. Generator (Low Voltage-400V)	per KVA	8,500-10,500
13. Generator (Medium Voltage-4160V)	per KVA	11,000-12,577
14. Power transformers, with built-in primary protections; padmount	per KVA	2,500-5,000
15. Power transformers, with built-in primary protections; silicon oil filled	per KVA	1,300-4,400
16. Power transformers, with built-in primary protections; cast resin	per KVA	2,000-6,000
17. Hot Water Storage Tank with Heating Coil	per Gallon	3,000-5,700

**NOTE:**

1. Rates are based on direct supply of imported equipment and materials by the developer.
2. Rates include all government imposed taxes, import duties brokerage fees and allowances for local materials and installation cost.

DESCRIPTION	UNIT	COST (Php)
18. Sewage Treatment Plant, Sequencing Batch Reactor (SBR); including civil works (no piling and located within the building)	per m <sup>3</sup> /day	30,000-40,000
19. Kitchen Waste Water Treatment; Gas Energy Mixing (GEM); including civil works (no piling and located within the building)	per m <sup>3</sup> /day	93,000-111,000
20. Desalination System; Reverse Osmosis up to 200 CMD	per m <sup>3</sup> /day	68,000-101,000
21. Desalination System; Reverse Osmosis 200 CMD to 600 CMD	per m <sup>3</sup> /day	35,000-74,000
22. Elevator; 1000 kgs, 1 to 2 mps (no skip floors; less than 10 floors)	cost/stop	550,000 - 1,400,000
23. Elevator; 1350 kgs, 2.5 to 3 mps (no skip floors; 10 to 20 floors)	cost/stop	885,000-1,155,000
24. Elevator; 1350 kgs, 2.5 to 3 mps (no skip floors; 20 to 30 floors)	cost/stop	700,000-885,000
25. Elevator; 1350 kgs, 2.5 to 3 mps (no skip floors; 30 to 40 floors)	cost/stop	550,000-744,000
26. Elevator; 1600 kgs, 4 mps (no skip floors; 20 to 30 floors)	cost/stop	760,000-1,085,000
27. Elevator; 1600 kgs, 4 mps (no skip floors; 30 floors to 40 floors)	cost/stop	660,000-881,900
28. Elevator; 1600 kgs, 5 mps (no skip floors; 40 floors to 45 floors)	cost/stop	1,180,000-1,284,000

3. Rates exclude preliminaries and contingencies.

4. Rates are based on fixed price tenders received in 4th Quarter 2020.

5. The cost per unit of the equipment is higher at lower capacity

## FIT-OUT COSTS FOR PHILIPPINES

DESCRIPTION	PESO/m <sup>2</sup>
<b>HOTELS</b>	
Public Areas (Front of House):	
3-star Hotel	26,000 - 33,000
4-star Hotel	40,000 - 55,000
5-star Hotel	55,000 - 98,000
Guest Rooms:	
3-star Hotel	17,000 - 26,000
4-star Hotel	51,000 - 65,000
5-star Hotel	65,000 - 98,000
Notes:	
<ol style="list-style-type: none"> <li>Includes built-in furniture floor, wall and ceiling, finishes, drapery, sanitary fittings, and special lightings.</li> <li>Excludes partitioning, loose furniture, artworks, M&amp;E works, building shell, operational items and equipment (e.g. cutlery, crockery, linen, television, refrigerator, etc.) opening, expenses, stage requirement, and computer systems.</li> <li>Blended cost of hotel main lobby, lounges, banquet rooms, meeting rooms, pre function rooms, corridors, public restrooms, enclosed amenity areas, VIP Club, lift lobbies, etc. for Public Areas (Front of House)</li> </ol>	
<b>COMMERCIAL</b>	
Shopping centers	27,000 - 38,000
Notes:	
<ol style="list-style-type: none"> <li>Mall / Public areas; excluding tenant area</li> <li>See notes 1, 2, &amp; 3 below</li> </ol>	

### NOTE:

- Costs are at December 2020 Levels
- Costs include wall, floor, ceiling furnishes, doors, FF&E, preliminaries.  
Forex US\$1:48.94
- Costs exclude operational equipment and supplies, structure, external enclosure, major M&E plant, financing and developers costs, professional and marketing fees.



DESCRIPTION	PESO/m <sup>2</sup>
<b>OFFICES</b>	
Standard offices*	
Shell & Core	30,400 - 52,800
Warmshell provided by Developer	27,500 - 48,300
Executive offices**	
Shell & Core	52,800 - 88,000
Warmshell provided by Developer	48,300 - 83,100
Banking lobby***	62,000 - 73,000
*Medium quality systems furniture	
**High quality furniture and finishes	
***Imported stone finishes; double volume spaces	
Notes: See notes 1, 2 & 3 below Shell & Core - includes built-in furniture, loose furniture, artworks, floor, wall and ceiling finishes, sanitary fittings, and special lightings. Warmshell - includes built-in furniture, loose furniture, artworks, floor and wall finishes, sanitary fittings, and special lightings; raised flooring and ceiling finish is provided by the developer.	
<b>RESTAURANT</b>	
General dining restaurant	27,000 - 45,000
Fine dining restaurant	45,000 - 112,000
Note: Includes furniture, floor, wall and ceiling finishes, minor alteration to air-conditioning and fire services installation to suit layout, exhaust for kitchen but excludes exhaust flue, operational items (e.g. cutlery, crockery, linen, utensils, etc.)	

**NOTE:**

1. Costs are at December 2020 Levels
2. Costs include wall, floor, ceiling furnishes, doors, FF&E, preliminaries.  
Forex US\$1:48.94
3. Costs exclude operational equipment and supplies, structure, external enclosure, major M&E plant, financing and developers costs, professional and marketing fees.

## FIT-OUT COSTS FOR PHILIPPINES

DESCRIPTION	PESO/m <sup>2</sup>
<b>THEATRES/CINEMAS</b>	
Theatres *	54,000 - 103,000
Cinemas ** * Includes stage rigging equipment, draperies, AV equipment projectors, screens, acoustics and seatings ** Includes screens, projection equipment, seats, finishes, ticketing booth	63,000 - 90,000
<b>AUDITORIUMS</b>	43,000 - 70,000
<b>BUSINESS CLUBS</b>	56,000 - 220,000
<b>BAR / BILLIARDS *</b>	35,000 - 44,000
* Excluding kitchen equipment	

### NOTE:

1. Costs are at December 2020 Levels
2. Costs include wall, floor, ceiling furnishes, doors, FF&E, preliminaries.  
Forex US\$1:48.94
3. Costs exclude operational equipment and supplies, structure, external enclosure, major M&E plant, financing and developers costs, professional and marketing fees.

## KITCHEN EQUIPMENT COSTS FOR PHILIPPINES

DESCRIPTION	COST (Php)
BUSINESS CLUB 500 - 900 m <sup>2</sup> floor area	22M - 50M
EXECUTIVE DINING 200 - 400 m <sup>2</sup> floor area	22M - 50M
4 STAR HOTEL 50 - 150 rooms	41M - 92M
5 STAR HOTEL 200 - 500 rooms	140M - 240M
OFFICE CANTEEN 200 - 300 m <sup>2</sup> floor area	10M - 20M





# GENERAL CONSTRUCTION DATA

# 2

Trends in Construction Cost for Philippines

Construction Value

Construction Activity

Lead Time of Different Packages

Utility Costs for Selected Asian Cities

Estimating Rules of Thumb

Progress Payments

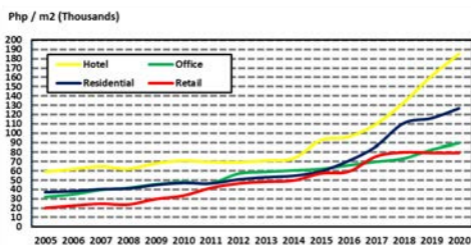
Construction Materials Wholesale  
Price Index 2020

Minimum Wage

Annual Average of Construction Materials  
Wholesale Price Index (CMWPI) in NCR

Tender Price Index

### TRENDS IN CONSTRUCTION COSTS FOR PHILIPPINES



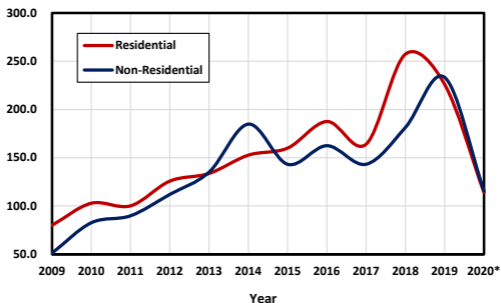
#### Building Construction Cost (Php/m<sup>2</sup>)

Year	Hotels	Office	Residential	Retail	US\$ to Php
2005	58,941	32,225	36,907	19,831	55.09
2006	61,577	34,894	37,973	22,322	51.31
2007	64,608	39,688	40,149	24,459	46.15
2008	62,042	41,806	40,917	23,572	44.47
2009	67,908	45,732	44,779	29,535	47.64
2010	70,822	48,042	46,914	33,156	45.11
2011	69,301	46,738	46,345	41,581	43.31
2012	69,175	57,009	50,675	46,452	42.23
2013	70,885	59,000	53,058	48,389	42.45
2014	73,252	60,600	54,606	49,723	44.40
2015	92,371	62,111	59,609	57,334	45.50
2016	95,935	66,015	70,764	59,366	47.49
2017	109,628	69,809	86,291	75,808	50.40
2018	132,917	73,199	110,958	80,203	52.66
2019	161,217	82,497	116,191	79,537	51.05
2020	185,130	89,213	126,773	79,561	48.94

Note: The figures used on the Construction Trends were based on high-end / prestige projects

## CONSTRUCTION VALUE

Construction Value (Php Billions)

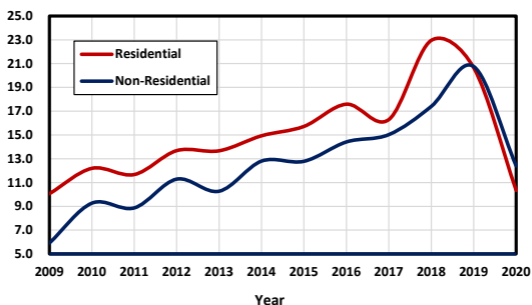


Year	Construction Value Php ('000)	
	Residential	Non-Residential
2009	80,108,885	51,295,024
2010	102,943,619	82,722,312
2011	100,220,969	89,952,721
2012	125,864,536	112,083,457
2013	133,783,612	135,163,094
2014	152,755,734	184,873,176
2015	160,065,906	143,221,467
2016	187,599,731	162,517,347
2017	164,153,250	143,315,470
2018	257,417,054	181,481,663
2019	225,818,368	233,185,922
2020*	113,907,352	115,634,682

\* Forecast Source: [www.psa.gov.ph](http://www.psa.gov.ph)

### CONSTRUCTION ACTIVITY

Usable Floor Area (Millions m<sup>2</sup>)



Year	Usable Floor Area (m <sup>2</sup> )	
	Residential	Non-Residential
2009	10,059,645	5,918,411
2010	12,196,450	9,273,089
2011	11,674,389	8,875,138
2012	13,687,037	11,295,492
2013	13,672,027	10,278,621
2014	14,935,518	12,811,930
2015	15,723,803	12,793,261
2016	17,592,013	14,421,105
2017	16,301,228	15,035,707
2018	22,961,367	17,409,516
2019	20,011,536	20,916,613
2020*	10,938,662	11,325,625

\* Forecast Source: [www.psa.gov.ph](http://www.psa.gov.ph)

## LEAD TIME OF DIFFERENT PACKAGES

Packages	Process Code* (in weeks)			
	A	B	C	D
Insitu Concrete Works	1	1	2	-
Structural Steel Frames	4	2	-	5
Cladding-Curtain Walling	10	2	-	14
Brickwork	1	1	2	-
Roof Finishes - Profiled Metal	3	1	4	4
Windows	2	1	3	6
Drylining, plaster and screeds	1	1	1	-
Demountable partitions	2	1	8	8
General joinery	4	2	3	6
Raised floors	2	1	3	3
Suspended ceilings	2	2	2	4
Decorations (wall coverings)	-	3 to 4	2 to 4	-
Stone wall and floor finishes	3	2	4	5
Passenger lifts (non-standard)	8	3	-	27
Escalators	4	2	-	18
Mechanical Pipework	4	2	1	1
Ductwork	4	2	4	3
Sprinklers	6	2	3	3
Air-conditioning plant	2	2	3	6
Variable air-volume unit	1	1	3	6
Electrical Package	6	3	-	-
Electrical - Panel Box	2	2	-	10
Switchgear	2	2	-	10
Generators (600kW)	4	2	-	13

### LEAD TIME OF DIFFERENT PACKAGES

Light fittings	1	1	6	2
Security Systems	3	3	4	-
Controls	4	3	3	-
Furniture	2	2	4	8
Data and voice cabling	3	2	-	-
Stones	-	-	4 to 8	-
Countertops (Natural)	2	1	4	4
Countertops (Synthetic)	2	1	2	4
Decorative Glass	2	2	4	4
Specialty Water Feature	2 to 4	2	4	4 to 6
Specialty Light Diffuser: Stretched Fabric	2	2	2 to 3	2 to 4
Toilet Fixtures	-	-	-	6 to 8
Glass Reinforced Gypsum	3	2	6	6
Digital Elements (Screens, Software, etc)	2	2	12	8
Fire Suppression	2	1	2	2 to 4
Special Lightings	-	-	2 to 8	-

\*Process Code

Legend

A - Working Drawing

B - Approve Working Drawing

C - Procurement of Materials

D - Manufacture

The lead time provided shall serve only as guide for use in projects, this is due mainly to the variability of factors like local customs processing/clearing, material availability, among others.

Lead times do not refer to any particular building/project type and are based on average time.

For examples:

Air-conditioning plant may require between six and twelve weeks depending on the plant specified or required. Therefore, an average of nine weeks has been used in the table.

## UTILITY COSTS FOR SELECTED ASIAN CITIES

COUNTRY	Exchange Rate Used	ELECTRICITY	
		Domestic	Commercial/Industrial
	US\$=	US\$/kwh	US\$/kwh
Manila	PHP 48.94	0.184	0.172
Hong Kong	HK\$7.75	0.11	0.13
Kuala Lumpur	RM4.11	0.053 - 0.139	0.092 - 0.124
Singapore	S\$1.36	0.16^	0.16^
Jakarta	IDR 14,155	0.102*	0.102**
Bangkok	Baht : 30.275	0.078 - 0.146**	0.103 - 0.105
Shanghai	RMB6.60	"0.093(peak) 0.047(normal)"	"5.155 (Basic Tariff) 0.089(summer) 0.085(non-summer)"
Beijing	RMB 6.6	0.066-0.107	0.184-0.184 (peak) 0.114-0.116 (normal)
Guangzhou	RMB 6.6	0.084-0.143	0.086-0.157
Chongqing	RMB6.60	0.077-0.124	0.084-0.099
Macau	MOP7.98	0.17	0.17
Bangalore	INR 74.39	0.075-0.107	0.092-0.135
New Delhi	INR 74.39	0.021-0.118	0.107
Ho Chi Minh	VND 23,500	0.12	0.11/0.06

Cost are at 4th Quarter 2020 Levels

### Basis of Charges in Manila, Philippines

#### Water

Domestic : 36m<sup>3</sup> - 101m<sup>3</sup>/month  
Commercial/Industrial : 3,750m<sup>3</sup>/month

#### Electricity

Domestic : 231kWh - 2,677 kwh

### Basis of Charges in Hong Kong, China

#### Water

#### Domestic

0 - 12m<sup>3</sup> : Free of Charge  
12 - 43m<sup>3</sup> : US\$0.54/m<sup>3</sup>  
43 - 62m<sup>3</sup> : US\$0.83/m<sup>3</sup>  
Above 62m<sup>3</sup> : US\$1.17/m<sup>3</sup>

#### Electricity (Based on tariff scheme of CLP Holdings Ltd.)

#### Domestic (bi-monthly consumption)

0-400 kWh: US\$0.11/kWh 400-1,000 kWh: US\$0.13/kWh  
1,000-1,800 kWh: US\$0.15/kWh 1,800-2,600 kWh: US\$0.19/kWh  
2,600-3,400 kWh: US\$0.22/kWh 3,400-4,200 kWh: US\$0.23/kWh  
Above 4,200 kWh: US\$0.23/kWh

### Basis of Charges in Bangkok, Thailand

\*\*Electricity (Domestic) = For normal tariff with consumption not exceeding 150kWh per month

\*Fuel (Unleaded) = Gasohol 95

### Basis of Charges in Beijing, China

#### Water

Domestic: 1-180m<sup>3</sup> = US\$0.673; 180-260m<sup>3</sup> = US\$0.943  
261m<sup>3</sup> above = US\$1.213  
Commercial/Industrial : Central Districts: US\$1.279  
Other Districts= US\$1.213

#### Electricity

Domestic: (per month): 1-240 kWh = US\$0.066; 241-400 kWh = US\$0.073  
400 kWh above= US\$0.107

Commercial/Industrial: Central Districts: Peak = US\$0.186, Normal = US\$0.116

Other Districts: Peak = US\$0.184, Normal = US\$0.114

### Basis of Charges in Shanghai, China

#### Water

Domestic: 0-220m<sup>3</sup> = US\$0.523/m<sup>3</sup> 220-300m<sup>3</sup> = US\$0.732/m<sup>3</sup>  
Above 300m<sup>3</sup> = US\$0.883/m<sup>3</sup>

#### Unleaded Fuel

Unleaded fuel rate is for Unleaded 95#.

#### Electricity

Domestic (Charged on yearly consumption):

0-3,120kWh = US\$0.093/kWh(peak) / US\$0.047/kWh(normal); 3,120-4,800kWh = US\$0.103/kWh(peak) / US\$0.051/kWh(normal); Above 4,800kWh = US\$0.148/kWh(peak) / US\$0.074/kWh(normal)

Commercial/Industrial (Charge on yearly consumption):

Electricity in dual tariff system, Rate of 10KVA

## UTILITY COSTS FOR SELECTED ASIAN CITIES

WATER		FUEL		
Domestic	Commercial/ Industrial	Diesel	Leaded	Unleaded
US\$/m <sup>3</sup>	US\$/m <sup>3</sup>	US\$/litre	US\$/litre	US\$/litre
0.508-0.74	2.15	0.732	N/A	0.992
0.83	0.59	1.89	N/A	2.28
0.139 - 0.487	0.504 - 0.555	0.423	N/A	0.394
2.01 <sup>^^</sup> 2.71 <sup>^^^</sup>	2.01 <sup>^^^</sup>	1.19 <sup>^^^</sup>	N/A	1.82 <sup>^^^</sup>
0.074-0.527*	0.483-1.035**	0.664	N/A	0.636
0.281 - 0.477	0.314 - 0.522	0.687	N/A	0.738*
0.523-0.883	0.76	0.78	N/A	0.89
0.673-1.213	1.213-1.279	0.77	N/A	0.88
0.283-0.566	0.49	0.79	NA	0.85
0.504-0.850	0.66	0.76	N/A	0.859
0.56 - 0.91	0.76	1.45	N/A	1.28
0.590-0.738	1.48	1.061	NA	1.17
0.37-1.11	1.475-2.590	1.024	N/A	1.13
0.27	0.86 / 0.49	0.49	NA	0.64

Cost are at 4th Quarter 2020 Levels

### Basis of Charges in Guangzhou, China

#### Unleaded Fuel

Fuel = Unleaded gasoline 97#

### Basis of Charges in Chongqing, China

#### Unleaded Fuel

Unleaded 92# = US\$0.813/litre; Unleaded 95# = US\$0.859/litre

### Basis of Charges in Kuala Lumpur, Malaysia

#### Unleaded Fuel

Unleaded fuel rate is for Unleaded petrol Ron 95.

**Electricity** (Commercial/Industrial): Tariff A & Tariff D (low voltage)

#### Water

Domestic: Rates for Residential with individual meter

### Basis of Charges in Ho Chi Minh, Vietnam

+ All rates are VAT inclusive

### 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<sup>3</sup> for 28m<sup>3</sup> or below, US\$0.64/m<sup>3</sup> for 29m<sup>3</sup> to 60m<sup>3</sup>, US\$0.75/m<sup>3</sup> for 61m<sup>3</sup> to 79m<sup>3</sup> and US\$0.90/m<sup>3</sup> for 80m<sup>3</sup> or above. Other charges (Depending on meter size 15mm - 200mm) : Meter rental = US\$0.34 - 57.64/month

**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 Singapore

\* All rates are nett of GST

<sup>^</sup> Electricity tariff is based on low tension power supply

<sup>^^</sup> Domestic water tariff effective from 1 July 2018. Rate includes water conservation tax, water-borne fee, sanitary appliance fee and is an average for <= 40m<sup>3</sup>

<sup>^^^</sup> Domestic water tariff effective from 1 July 2018. Rate includes water conservation tax, water-borne fee, sanitary appliance fee and is an average for > 40m<sup>3</sup>

<sup>^^^</sup> Non-domestic water tariff effective from 1 July 2018. Rate includes water conservation tax, water-borne fee and sanitary appliance fee.

<sup>^^^</sup> As at 17 November 2020

<sup>^^^</sup> 98 Unleaded petrol as at 17 November 2020



## ESTIMATING RULES OF THUMB

### Densities of Common Materials

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

#### Concrete

Minimum Recommended Cement Factor  
Based on Concrete Strength  
( in bags of 40 kg cement)

Concrete		Ordinary Design Mix		Pumpcrete Design Mix
Psi	Mpa	1 ½"	Gravel Size ¾"	Gravel Size ¾"
8,000	55	21	22	23
7,000	48	19	20	21
6,000	41	17	18	19
5,000	35	15	16	17
4,000	28	11.75	12.75	14.5
3,000	21	9	10	11.5

### Reinforcement

Bar Diameter (mm)	Weight/m (kg/m)	Perimeter (mm)	Area (mm <sup>2</sup> )
6	0.222	18.85	28.27
8	0.395	25.13	50.26
10	0.616	31.42	78.54
12	0.888	37.70	113.10
16	1.579	50.27	201.06
20	2.466	62.83	314.16
25	3.854	78.54	490.88
28	4.834	87.96	615.80
32	6.313	100.53	804.25
36	7.990	113.09	1,017.90
40	9.864	125.66	1,256.64

### ESTIMATING RULES OF THUMB

#### Structure Design - Concrete Ratios

The following is a range of concrete ratios for building superstructure design in Manila:

Concrete/floor area	0.4 m <sup>3</sup> /m <sup>2</sup>	-	0.55 m <sup>3</sup> /m <sup>2</sup>
Formwork/floor area	2.0 m <sup>2</sup> /m <sup>2</sup>	-	3.0 m <sup>2</sup> /m <sup>2</sup>
Reinforcement	180 kg/m <sup>3</sup>	-	280 kg/m <sup>3</sup>

#### Average External Wall/Floor Ratio

Residential Apartments	0.35 m <sup>2</sup> /m <sup>2</sup>
Office, Hotel	0.40 m <sup>2</sup> /m <sup>2</sup>
Industrial	0.40 m <sup>2</sup> /m <sup>2</sup>

#### Average Internal Wall/Floor Ratio

Residential Apartments	1.00 m <sup>2</sup> /m <sup>2</sup>
Office, Hotel	0.50 m <sup>2</sup> /m <sup>2</sup>
Industrial	1.50 m <sup>2</sup> /m <sup>2</sup>

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

	Length (m)	Width (m)	Headroom (m)
Private Cars	5	2.5	2.4
Taxi and Light Vans	5	2.5	2.4
Coaches and Buses	12	3.0	3.8
Lorries	11	3.5	4.1
Container Vehicles	16	3.5	4.5

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

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

#### Average Loads

#### Volume

Lorry (24 ton)	10.0 m <sup>3</sup>
Concrete Truck (24 ton)	5.5 m <sup>3</sup>

### Functional Area Distribution in 5-star Hotels

Functional Area	% of Total Hotel CFA
Front of House	15 - 25%
Guestroom Floors	45 - 60%
Back of House	25 - 30%

### Dimensions of Typical Grade A Office Space

Component	Dimension
Distance from curtain wall to core wall	9 - 13%
Population	9 m <sup>2</sup> usable floor area/person
Average waiting intervals for lifts	30 - 40 s

### Average Lighting Level

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

### ESTIMATING RULES OF THUMB

Average Power Density Building Type	VA/m <sup>2</sup> 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 <sup>2</sup> Cooling Area/RT
Residential	18 - 23
Office	14 - 18
Retail	12 - 14
Hotel	23
School	23

Indicative Dimensions for Sports Grounds		
Building Type	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

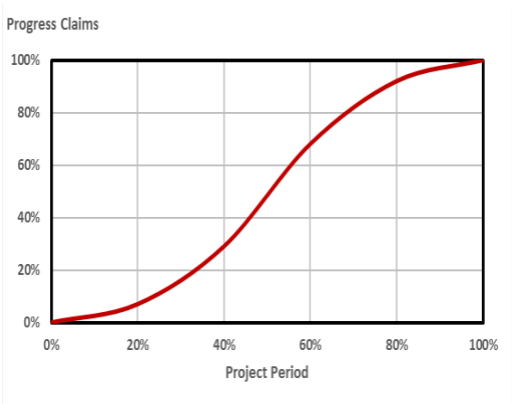
The above dimensions are for a single court with appropriate clearance. No spectator seating or support area has been allowed.

## PROGRESS PAYMENTS

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

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

No account has been made for downpayments or retention.



### PROGRESS PAYMENTS

Contract Period	Cumulative Progress Claims
5%	1%
10%	3%
15%	5%
20%	7%
25%	10%
30%	14%
35%	21%
40%	29%
45%	38%
50%	48%
55%	59%
60%	68%
65%	77%
70%	83%
75%	88%
80%	92%
85%	94%
90%	96%
95%	98%
100%	100%

## CONSTRUCTION MATERIALS WHOLESALE PRICE INDEX IN THE NATIONAL CAPITAL REGION (NCR) 2020

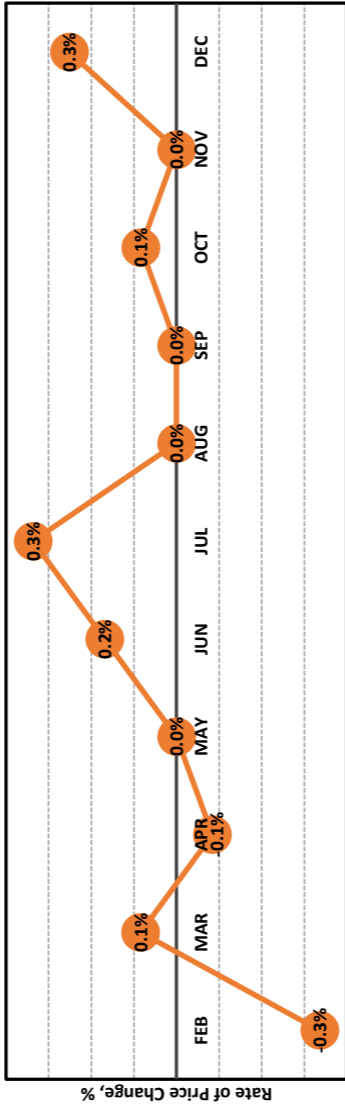
		2020												
2019		Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>ALL ITEMS</b>	<b>118.50</b>	<b>119.10</b>	<b>118.70</b>	<b>118.80</b>	<b>118.70</b>	<b>118.70</b>	<b>118.90</b>	<b>119.30</b>	<b>119.30</b>	<b>119.30</b>	<b>119.30</b>	<b>119.40</b>	<b>119.40</b>	<b>119.70</b>
A. Sand and Gravel	133.30	133.30	133.20	133.20	133.20	133.20	132.70	132.70	133.50	134.00	134.00	134.50	134.50	137.10
B. Concrete Products & Cement	121.70	121.70	121.50	121.50	121.50	121.40	121.90	123.00	123.00	123.00	123.00	122.90	122.90	122.90
C. Hardware	118.00	119.50	119.90	119.90	120.20	120.20	120.30	120.60	120.60	120.60	120.60	120.90	121.20	121.10
D. Plywood	113.80	113.20	113.20	113.20	113.20	113.20	113.40	113.20	113.20	113.20	113.20	113.60	113.60	113.70
E. Lumber	128.00	129.30	130.20	130.20	131.20	131.20	132.40	133.20	133.20	133.20	133.20	132.10	132.70	132.70
F. G.I. Sheet	110.90	111.70	111.80	111.80	111.80	111.80	111.90	111.90	111.90	112.00	112.00	112.00	112.00	112.20
G. Reinforcing & Structural Steel	116.30	116.10	115.20	115.30	115.30	115.30	115.50	115.20	115.20	115.20	115.20	115.10	115.10	115.40
H. Tile Works	118.20	131.80	133.40	133.40	133.40	133.40	133.40	133.40	133.40	133.40	133.40	135.20	135.20	135.20
I. Glass & Glass Products	104.90	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40	112.40
J. Doors, Jamb, and Steel Casement	109.80	109.80	110.20	110.20	110.20	110.20	109.90	109.90	109.90	109.90	109.90	110.00	110.00	110.00

## CONSTRUCTION MATERIALS WHOLESALE PRICE INDEX IN THE NATIONAL CAPITAL REGION (NCR) 2020

ALL ITEMS	2020													
	2019	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
K. Electrical Works	124.20	125.00	124.30	124.30	124.20	124.30	124.90	125.20	125.90	125.90	125.90	126.00	126.00	126.20
L. Plumbing Fixtures & Accessories / Waterworks	125.90	128.10	125.10	125.10	125.10	125.10	125.50	124.50	124.50	124.50	124.50	124.50	123.90	124.20
M. Painting Works	105.20	105.60	105.60	105.60	105.60	105.60	105.40	105.60	105.60	105.60	105.70	105.90	105.90	105.90
N. PVC Pipes	111.50	115.50	115.50	115.50	115.50	115.50	115.50	115.50	115.50	115.50	115.50	116.40	116.40	116.80
O. Fuel and Lubricants	120.50	122.90	116.80	116.80	115.40	100.10	99.60	106.10	112.50	112.80	108.70	107.00	106.40	110.70
P. Asphalt	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20
Q. Machinery and Equipment Rental	146.90	146.90	146.90	146.90	146.90	146.90	146.90	146.90	146.90	146.90	146.90	146.90	146.90	146.90



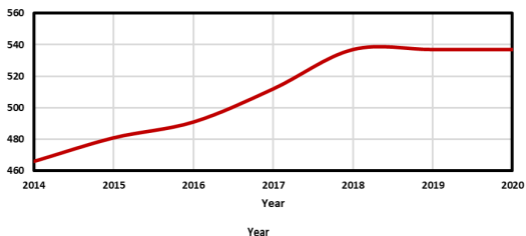
**Construction Materials Wholesale Price Index 2020**  
Monthly Price Movement (2012=100)



Source: Philippine Statistics Authority

## MINIMUM WAGE

Peso per Day



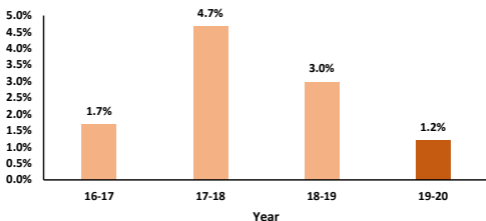
Year	NCR Wage Order No.	Amount of Increase	Peso per Day
08 January 1991	W.O. No. NCR 2	12.00	118.00
16 December 1993	W.O. No. NCR 3	17.00	135.00
01 April 1994	W.O. No. NCR 3	10.00	145.00
02 February 1996	W.O. No. NCR 4	16.00	161.00
01 May 1996	W.O. No. NCR 4	4.00	165.00
06 February 1997	W.O. No. NCR 5	15.00	180.00
01 May 1997	W.O. No. NCR 5	5.00	185.00
06 February 1998	W.O. No. NCR 6	13.00	198.00
31 October 1999	W.O. No. NCR 7	25.50	223.50
01 November 2000	W.O. No. NCR 8	26.50	250.00
05 November 2001*	W.O. No. NCR 9	15.00	265.00
01 February 2002*	W.O. No. NCR 9	15.00	280.00
10 July 2004*	W.O. No. NCR 10	20.00	300.00
16 June 2005	W.O. No. NCR 11	25.00	325.00
11 July 2006	W.O. No. NCR 12	25.00	350.00
28 August 2007	W.O. No. NCR 13	12.00	362.00
14 June 2008	W.O. No. NCR 14	15.00	377.00
28 August 2008	W.O. No. NCR 14	5.00	382.00
23 June 2010	W.O. No. NCR 15	22.00	404.00
26 May 2011	W.O. No. NCR 16	22.00	426.00
03 June 2012	W.O. No. NCR 17	20.00	446.00
01 November 2012	W.O. No. NCR 17	10.00	456.00
04 October 2013	W.O. No. NCR 18	10.00	466.00
04 April 2015	W.O. No. NCR 19	15.00	481.00
02 June 2016	W.O. No. NCR 20	10.00	491.00
05 October 2017	W.O. No. NCR 21	21.00	512.00
05 November 2018	W.O. No. NCR 22	25.00	537.00

\* ECOLA (Emergency Cost of Living Allowance)

Source: National Wages and Productivity Commission,  
Department of Labor and Employment

## ANNUAL AVERAGE OF CONSTRUCTION MATERIALS WHOLESALE PRICE INDEX (CMWPI) IN NCR

**Construction Materials Wholesale Price Index**  
Annual Average Price Movement (2012=100)



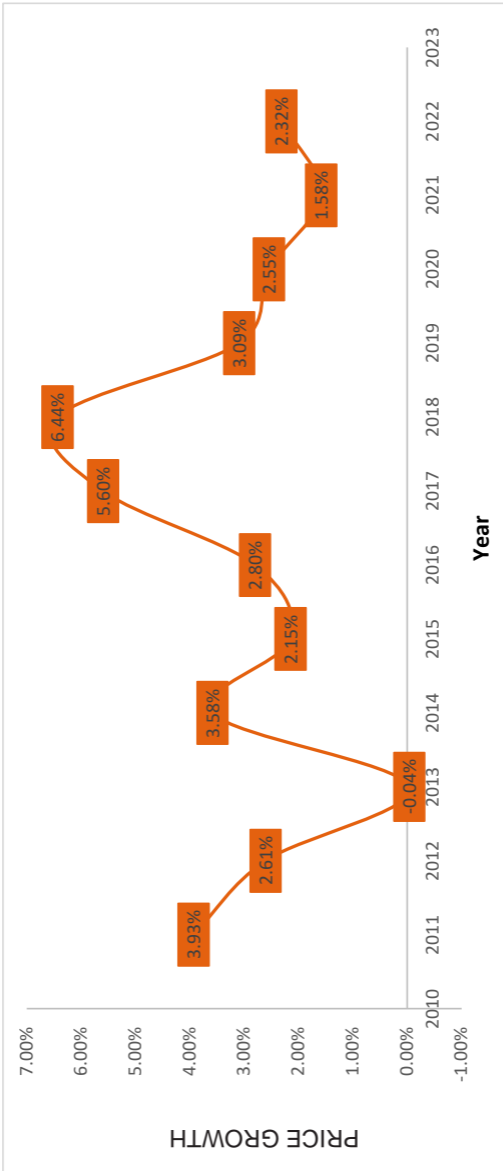
COMMODITY GROUP	2017 Ave.	2018 Ave.	2019 Ave	2020 Ave
ALL ITEMS	109.2	114.3	117.7	119.1
A. Sand and Gravel	116.7	120.7	131.5	133.8
B. Concrete Products & Cement	110.4	115.5	120.6	122.3
C. Hardware	107.7	113.9	115.8	120.4
D. Plywood	108.6	111.7	113.8	113.3
E. Lumber	111.9	120.6	127.0	131.8
F. G.I. Sheet	105.5	107.0	109.8	111.9
G. Reinforcing & Structural Steel	107.8	115.6	116.0	115.3
H. Tile Works	110.1	112.9	115.6	133.7
I. Glass & Glass Products	104.9	104.9	104.9	112.4
J. Doors, Jambs, and Steel Casement	106.6	109.7	109.9	110.0
K. Electrical Works	109.7	117.0	123.3	125.3
L. Plumbing Fixtures & Accessories / Waterworks	117.9	119.4	124.6	125.0
M. Painting Works	103.9	104.7	104.9	105.7
N. PVC Pipes	106.4	107.1	109.5	115.8
O. Fuel and Lubricants	94.6	117.7	120.3	109.9
P. Asphalt	104.2	104.2	104.2	104.2
Q. Machinery and Equipment Rental	146.9	146.9	146.9	146.9

### TENDER PRICE INDEX

Year	Tender Price Index
2010	100
2011	103.93
2012	106.64
2013	106.6
2014	110.42
2015	112.79
2016	115.95
2017	122.44
2018	130.32
2019	134.35
2020	137.77
2021	139.95
2022	143.19

Notes:

- This tender price index data does not consider the construction fluctuations ie prices of plant and equipment, materials, and labor, from the tender date up to the mid-point of the construction period. It is estimated that construction fluctuations would approximately be at 3% – 5% per annum.
- The computation is based on a priced bill of quantities which composed of Civil, Structural, Architectural and MEPF services
- An exponential smoothing algorithm was used on the forecast for Year 2021 and Year 2022







CONSTRUCTION  
MARKET UPDATE

3

General Overview

Construction Sector

### GENERAL OVERVIEW

The uncertain domestic and global environment has challenged the Philippines' Gross Domestic Product (GDP) growth which posted a record full-year contraction of 9.5% in 2020, a reversal from the 6.0% growth in 2019. The underwhelming performance of the economy was largely attributed to the long-standing community lockdown which commenced at the tail-end of Q1 2020 to become among the longest and strictest lockdowns in the world, restricting the country's mobility and business activities. Whilst the economy is poised for a gradual recovery beginning in 2021, return to pre-pandemic vibrancy will likely be stalled by the still weakened household spending, the main component of the economy accounting for more than 70% of GDP. Nonetheless, Fitch Ratings affirmed the Philippines investment grade rating at "BBB" with a stable outlook as it acknowledges favorable recovery prospects.

The local commercial office property market is currently challenged with the growing trend of the blended and hybrid workforce – those who are on work-from-home (WFH) mode and those who are set to return to office. The future of the workplace elsewhere is expected to evolve the way corporate occupiers consume real estate in the mid- to long-term. The pandemic has also altered the growth trajectory of the demand coming from the Philippine offshore gaming operators (POGO) and the information technology and business processing management (IT-BPM) companies. The flight of the POGO companies led to an increase in office vacancy in the interim. On the other hand, while the expansion plans from the IT-BPM companies remain on-hold, demand is expected grow in the mid-term as outsourcing has been proven to be an effective business strategy during economic crises.





The growth of the residential condominium sub-sector is seen to be challenged by the economic uncertainties, as demand for overseas Filipinos and foreign workers remain repressed bringing an unstable outlook on remittances coming from overseas Filipinos (OFs). Further, the demand for less dense developments fuels the resurgence of interest in horizontal developments located in nearby areas outside Metro Manila.

The pandemic inhibits retail property sub-sector growth with zero completions and rising vacancy rates in 2020 as the crisis disrupts consumer spending patterns with increased preference towards contactless transactions. Aside from food and beverages, health and fitness, and essential establishments, other retail categories such as clothing and apparel, bags and luggage, and furniture and fixture, among others, grapple with the dramatic decline in footfall. Retail recovery remains heavily dependent on the success of the mass vaccination campaign to counter the ballooning rate of infections which is key to boosting consumer confidence.

Similarly, the diminished tourism activities and the restrictions imposed on accommodation establishments immobilized the hospitality sub-sector with delayed completions likely to be spilled over the next two years, possibly more. The on-going threats of the COVID-19 disease will continue to strain the hospitality sector's performance and delay its revival along with the tourism industry as country borders continue to limit the entry of foreign tourists.

Notwithstanding global disturbances, the industrial sector showed resiliency, buoyed by the accelerated e-commerce growth which increased the demand for standard factory buildings (SFBs). The renewed interest from essential industries also heightens the demand for logistics and

warehousing which counters the weakened demand from manufacturing and external trade industries amidst the unstable global economic situation.

### COMMERCIAL SECTOR

The consolidated office stock for Prime and Grade 'A' developments in Metro Manila reached approximately 8.2 million sq.m. by end-2020. Taguig City (with major business districts such as Bonifacio Global City, McKinley Hill, McKinley West and ARCA South) corners approximately 30% of the total Prime and Grade 'A' stock. Makati City (consisting of the Makati CBD and its fringe areas) account for approximately 18%, while Pasig City and Quezon City captured 16% and 15% of the total Prime and Grade 'A' stock, respectively. The consolidated office stock in Metro Manila grew by 376,000 sq.m. in 2020 – which accounts for only 45% of the scheduled completions for the year and lower by 57% from the average new completions over the last three (3) years.

Despite easing the community quarantine restrictions in Q3 2020, the transactions in Q4 2020 failed to pull the overall performance of the sector for the year, as net absorption fell to -25,000 sq.m. This is largely due to the continued flight of the POGO firms and related service providers, as well as the re-opening of previously committed office spaces due to the indefinite suspension of the expansion plans of the IT-BPM companies.

The average net rents in Prime and Grade 'A' developments in Metro Manila managed to post a 2.3% year-on-year (YoY) increase, despite posting a 0.1% quarter-on-quarter (QoQ) decline during Q4 2020. While average rents in the main CBDs, particularly Makati CBD and Bonifacio Global City (BGC) were relatively unchanged, the QoQ decline was mainly due to the downward adjustments in the asking rents of developments located outside of



these main CBDs.

Cushman & Wakefield Research forecasts the average net rents of Prime and Grade 'A' developments in Metro Manila through 2021 to remain within the current range of PHP1,000 to PHP1,100 per sq.m. per month. The average net rents for developments within the main CBDs are likely to remain unchanged, while average net rents for developments located outside the main CBDs will continue to adjust downwards, albeit at a lower rate, due to the continued flight of POGO companies and stalled expansion plans of IT-BPM companies.

Overall vacancy rates also increased by 145 basis points to 7.8% by end-2020, driven mainly by the continued flight of the POGO locators. The re-opening of previously committed spaces in recently completed buildings due to indefinitely suspended expansion plans is also pushing vacancy rates further upwards.

## **RESIDENTIAL CONDOMINIUM SECTOR**

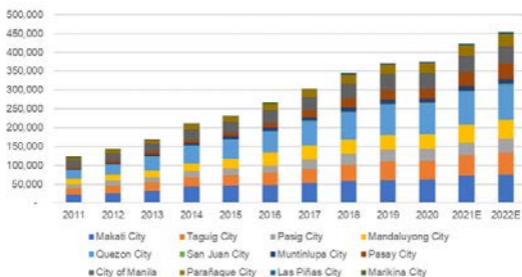
By end-2020, the total supply of completed residential condominium units in Metro Manila reached approximately 375,000 units. Due to the restrictions in movements that affected the schedule of constructions and pushed back the completion dates of developments, the total number of completed residential condominium units in 2020 was down by more than 75% from the average number of completed developments in the last five (5) years.

The major property developers have scaled back on launching new residential condominium projects. Earlier in 2020, there were approximately 30,000 residential condominium units earmarked to be launched. On the other hand, there were significant interests in adding new horizontal development projects in their portfolio. Demand and supply of residential condominium developments

in the traditional business districts are seen to shift to horizontal developments located in adjacent urban areas as a result of blended work set-up and increasing preference towards less dense living environment/set-up.

Average monthly rents of residential condominium developments have softened by as much as 10% by end-2020 and are estimated in the range of PHP400 to PHP1,400 per sq.m. per month within Metro Manila. Rental rates in Makati CBD and BGC are estimated to be in the higher end of the range between PHP750 to PHP1,400 per sq.m. per month.

**Figure 1. Total Number of Residential Condominium Units in Metro Manila (2011-2022E)**



Source: Cushman & Wakefield Research

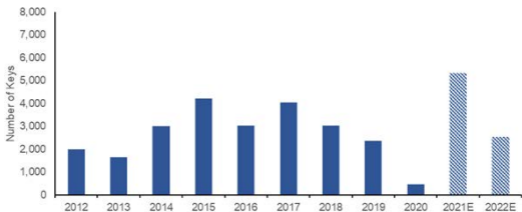
### Hotels and Serviced Apartments Sector

The hotel and serviced apartment property sub-sector faced a major setback in 2020 with a total of only 448 new keys in 2020, a drop by 81% from the recorded new completions in 2019 of around 2,358 keys. All of these completions were delivered before the onset of the community quarantine in the first quarter of the year while around 2,900 keys originally scheduled for 2020 were moved to the next two years. The total supply of hotel and accommodation rooms now stands to around 42,100, of which more than half are located in Makati City (22%), Pasay City (19%), and City of Manila (17%).



The total supply is expected to reach 49,900 keys upon the completion of roughly 7,800 keys up to 2022. The majority of these upcoming new supply will be coming from Parañaque City (25%), Quezon City (20%), and Pasay City (17%). Among the most anticipated openings include the Grand Westside Hotel and Kingsford Hotel Bayshore City in Parañaque City, the Westin Manila Bayshore in Pasay, and Mövenpick Hotel & Residences and Wyndham Garden in Quezon City, among others

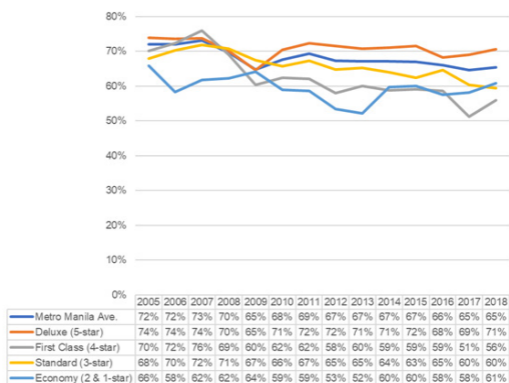
**Figure 2. Number of New Hotels and Serviced Residences in Metro Manila (2012-2022E)**



Source: Cushman & Wakefield Research

Meanwhile, the vibrancy of the travel and tourism industry was cut short by the on-going domestic and international travel restrictions as the pandemic progresses. After an outstanding foreign visitor arrivals record in 2019 which posted a YoY growth of 15% to 8.3 million, from 7.2 million in 2018, arrivals dropped by roughly 84% to only 1.3 million in 2020. The recent decline was the first since 2010 as a result of zero arrivals during the last nine months of 2020 as the Philippines tightens its borders to curb the rate of COVID-19 virus infections. The lackluster performance of the travel and tourism industry dragged hotel occupancy rates below 50% and forced some major developments, such as the Marco Polo Hotel in Davao City and Makati Shangri-La, to suspend operations indefinitely as they yielded to financial pressures.

**Figure 3. Average Occupancy Rates of Hotels in Metro Manila by Hotel Classification (2005-2018)**



Source: Department of Tourism

## Retail Sector

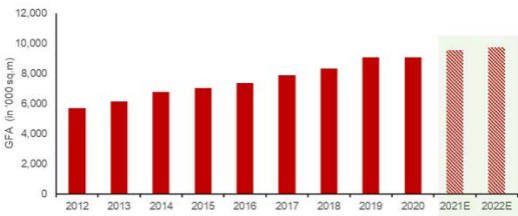
The retail property sub-sector remained lull as the restrictions in construction activities and the developers' decisions to redirect financial resources to more essential uses resulted in zero new retail space completion for the year 2020. Roughly 274,000 sq.m of retail space Gross Floor Area (GFA) originally slated for 2020 completion were moved to the succeeding year, adding to the expected completion in 2021 which is estimated at 504,000 sq.m. By 2021, the total supply of retail space in shopping malls is expected to reach 9.57 million sq.m and by 2022 at 9.74 million sq.m. The bulk of these expected completions up to 2022 are located in Taguig City (29%), Quezon City (28%), and Makati City (15%).

The crisis hit retail footfall to slide below 40% of its pre-pandemic level as consumers continue to shy away from retail establishments. The main drivers of the retail industry performed poorly in 2020 with household spending contracting by 7.9%, unemployment rate at a high level of 8.7%, and overseas Filipino (OF) remittances performing weakly with its 11-month cumulative level falling by 0.9%



from its 2019 level. The gloomy business environment has worsened the retail vacancy which is estimated to reach 14% at the end of 2020. Whilst recovery prospects remain uncertain in the medium to short-short-term, retailers and mall operators are riding the wave of online shopping and contactless transactions popularity through investments in digitization and adaption of omnichannel strategies.

**Figure 4. Mid and High-end Shopping Mall Stock in Metro Manila (2012-2022E)**



## Industrial Sector

The industrial property sub-sector undertakes active expansions particularly in Central Luzon region that delivered roughly 100 hectares of industrial lots in 2020, bringing the total supply of industrial estates in Mega Manila area to around 4,685 hectares. The massive infrastructure developments which seek to further improve the accessibility and connectivity of the regions of Central Luzon and CALABA to Metro Manila continue to attract industrial locators and fuel the growth of industrial and logistics real estate in these areas.

Notwithstanding the pressures of continued global supply chain disruptions and business operation restrictions, the industrial sector remains upbeat owing to the accelerated growth of e-commerce activities that bolstered the demand for logistics facilities. The e-commerce market is projected to reach USD 28 billion in 2025 with a CARG of 30%, according to e-Economy SEA 2020 report by

Google, Temasek and Bain & Company. Moreover, the renewed demand from the groceries market along with food and beverages, pharmaceutical companies, and other essentials further buoy the industrial sector against generally dampened domestic and global business environment and weakened manufacturing activity which slipped by 9.5% in 2020.

Rental rates and capital values remained in an upward trajectory despite the completion of new industrial parks, opening up new supply of serviced lands and warehouse facilities. The selling prices of industrial land in newly completed industrial estates by major developers outside of Metro Manila reaching PHP 8,000 per sq.m., while asking rental rates are expected to grow at an annual average rate of 5% despite a moderate increase in vacancy rates.

## COMPANY PROFILE

Cushman & Wakefield (C&W) (NYSE: CWK) is a leading global real estate services firm that delivers exceptional value by putting ideas into action for real estate occupiers and owners. Cushman & Wakefield is among the largest real estate services firms with approximately 53,000 employees in 400 offices and 60 countries. In 2019, the firm had revenue of \$8.8 billion across core services of property, facilities and project management, leasing, capital markets, valuation and other services.

C&W in the Philippines headquartered in Bonifacio Global City in Taguig City was established in 2012 as a fully owned entity after operating for 12 years through a local partner/affiliate. To learn more, visit [www.cushmanwakefield.com](http://www.cushmanwakefield.com) or follow @Cushwake on Twitter.



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FINANCIAL

4

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## PHILIPPINES KEY DATA

POPULATION	
Population (2019)	108.3 M
Population (2020)	110.0 M
Urban Population*	48.00%
Population under 15	30.3%
Population over 65	5.5%
Ave. Annual Growth Rate (2015-2020)	1.6%
GEOGRAPHY	
Land Area	300,000 km <sup>2</sup>
Agricultural Area (2016)	41.5%
Capital City	Manila
(population Metropolitan Manila - Census 2015)	12.88M
(population Manila - Census 2015)	1.78M
ECONOMY 2020	
Monetary Unit	Peso
Average Headline Inflation Rate (2012=100)	
(Full Year 2020)	2.60%
Gross Domestic Product (GDP)	
(Full Year 2020)	Php17,975,997 (in mil)
GDP per Capita (Full Year 2020)	Php 163,496
CONSTRUCTION 2020	
Gross Value of Construction Output (Full Year 2020)	Php 2,340,119 (in mil)
Net Value of Construction Output (Full Year 2020)	Php 1,189,416
Net Value of Construction Output as a proportion of the GDP (Full Year 2020)	6.6%

\* Population on Philippine Cities only

\* Projection

Source: National Accounts of the Philippines  
Philippine Statistical Yearbook  
Philippine Statistics Authority  
World Bank



## ECONOMIC HIGHLIGHTS

### 4TH QUARTER 2020

Philippine GDP posts -8.3 percent in the fourth Quarter 2020; -9.5 percent for full-year 2020

The Philippine Gross Domestic Product (GDP) posted a growth rate of -8.3 percent in the fourth quarter of 2020, resulting in the -9.5 percent full-year growth rate for 2020.

On the other hand, contributors to the decline of the GDP growth for the fourth quarter of 2020 were Construction at -25.3 percent; Other Services at -45.2 percent; and Accommodation and Food Service Activities at -42.7 percent.

Among the major economic sectors, Agriculture, Forestry, and Fishing (AFF) registered -2.5 percent growth rate in the fourth quarter of 2020, while Services and Industry posted -8.4 percent, and -9.9 percent respectively. On an annual basis, the growth rates are as follows: AFF at -0.2 percent, followed by Services at -9.1 percent, and Industry at -13.1 percent.

On the expenditure side, the Government Final Consumption Expenditure (GFCE) posted positive growth of 4.4 percent in the fourth quarter of 2020. Household Final Consumption Expenditure (HFCE) declined by -7.2 percent, along with the Gross Capital Formation (GCF) at -29.0 percent; Exports, -10.5 percent; and Imports, -18.8 percent. For full-year 2020, GFCE grew by 10.4 percent; HFCE at -7.9 percent; GCF at -35.8 percent; Exports at -16.7 percent; and Imports at -21.9 percent.

The Net Primary Income (NPI) from the Rest of the World, and the Gross National Income (GNI) have corresponding growth rates of -53.2 percent, and -12.0 percent in the fourth quarter of 2020, while full-year 2020 growth rates of NPI and GNI were at -27.3 percent, and -11.1 percent respectively.

Source: National Accounts of the Philippines  
Philippine Statistics Authority ([www.psa.gov.ph](http://www.psa.gov.ph))

## FINANCIAL DEFINITIONS

### Discount Rate

The rate of return a developer expects when investing in a project (i.e. opportunity cost).

### Internal Rate Of Return (IRR)

The IRR may be defined as the interest rate that equates the present value of expected future cash flows to the cost of the investment. The IRR can be compared to the Discount Rate.

### Net Present Value (NPV)

The NPV is the present value of all future cash flows, discounted back to today's values at the Discount Rate. The NPV indicates in today's dollars the profit or loss a developer makes above or below his required profit (based on nominated Discount Rate).

### 72 Rule

The approximate number of years required to double your capital can be calculated by dividing the interest rate into 72.

e.g. If interest rate = 10% p.a.  
Then  $72 / 10 = 7.2$  years  
It will take approximately 7.2 years to double your capital if it is invested at 10% p.a.

## FINANCIAL FORMULAE

Future value of \$1

$$FV = PV (1+i)^n$$

Future value of \$1 per period

$$FV = PMT [((1+i)^n - 1), i]$$

Sinking Fund  
 (the amount required to be  
 put away periodically to  
 realize some future sum)

$$PMT = FV [i, ((1+i)^n - 1)]$$

Present value of \$1.

$$PV = FV[1, (1+i)^n]$$

Present value of \$1 per period.

$$PV = PMT [((1+i)^n - 1), (i(1+i)^n)]$$

Annuity with a PV of \$1  
 (mortgage bond formula)

$$PMT = PV [i(1+i)^n, ((1+i)^n - 1)]$$

- PV = present value
- FV = future value
- PMT = payment amount
- n = period (e.g. 10 years with monthly payments,  $n = 10 \times 12 = 120$ )
- i = interest rate per period  
 (e.g. 12% p.a. compounded monthly;  $i = 12\% \div 12 \text{ months} = 1\% \text{ per period}$ )

## MORTGAGE REPAYMENT TABLE

Based on:

- 1,000 units of currency
- Interest compounded monthly
- Equal monthly repayments

Interest p.a.	Repayment Years			
	5	10	15	20
5%	18.87	10.61	7.91	6.60
6%	19.33	11.10	8.44	7.16
7%	19.80	11.61	8.99	7.75
8%	20.28	12.13	9.56	8.36
9%	20.76	12.67	10.14	9.00
10%	21.25	13.22	10.75	9.65
11%	21.74	13.78	11.37	10.32
12%	22.24	14.35	12.00	11.01
13%	22.75	14.93	12.65	11.72
14%	23.27	15.53	13.32	12.44
15%	23.79	16.13	14.00	13.17
16%	24.32	16.75	14.69	13.91
17%	24.85	17.38	15.39	14.67
18%	25.39	18.02	16.10	15.43
19%	25.94	18.67	16.83	16.21
20%	26.49	19.33	17.56	16.99
21%	27.05	19.99	18.31	17.78
22%	27.62	20.67	19.06	18.57
23%	28.19	21.35	19.82	19.37
24%	28.77	22.05	20.58	20.17
25%	29.35	22.75	21.36	20.98

Example

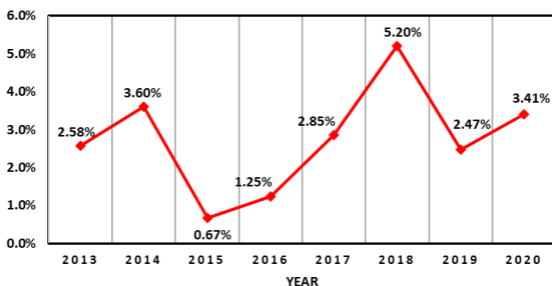
Borrow \$1,000,000 to be repaid monthly at 10% p.a. over 10 years.

$$\begin{aligned} \text{Repayments} &= 1,000,000 / 1,000 \times \$13.22 \\ &= \$13,220 \text{ per month} \end{aligned}$$



## CONSUMER PRICE INDEX

### % CHANGE IN CPI



Year	Index	% Change
2013	102.6	2.58%
2014	106.3	3.60%
2015	107.0	0.67%
2016	108.4	1.25%
2017	111.5	2.85%
2018	117.3	5.20%
2019	120.2	2.47%
2020	124.3	3.41%

Note: Base Date 2012 = 100

Source: Philippine Statistics Authority

## EXCHANGE RATES CURRENCY

Approximate Rates prevailing as at 29 December 2020

COUNTRY	CURRENCY	Foreign Currency in PHP	PHP in Foreign Currency	US\$ in Foreign Currency
Australia*	dollar	36.40	0.03	1.32
Bahrain*	dinar	127.55	0.01	0.38
Brunei*	dollar	35.98	0.03	1.33
Canada*	dollar	37.40	0.03	1.28
China*	yuan	7.35	0.14	6.54
Denmark+	kroner	7.89	0.13	6.09
European Currency Unit*	euro	58.69	0.02	0.82
Hong Kong*	dollar	6.19	0.16	7.76
India+	rupee	0.65	1.53	73.55
Indonesia*	rupiah	0.003	294.12	14,128.24
Japan*	yen	0.46	2.16	103.77
Malaysia+	ringgit	11.87	0.08	4.05
New Zealand+	dollar	34.10	0.03	1.41
Norway	kroner	5.56	0.18	8.63

Notes:

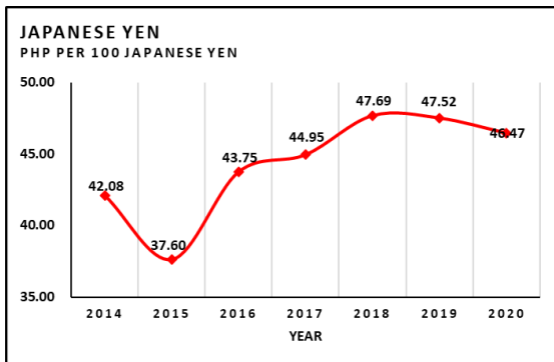
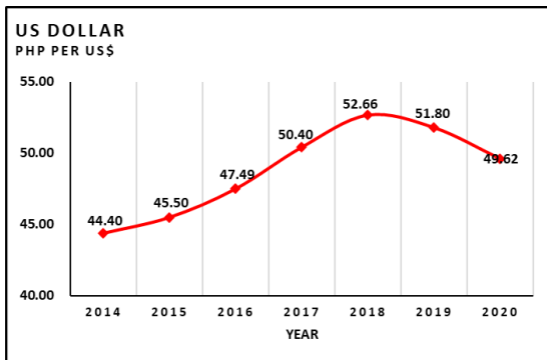
\* Convertible currencies with BSP

+ Non convertible currencies with BSP

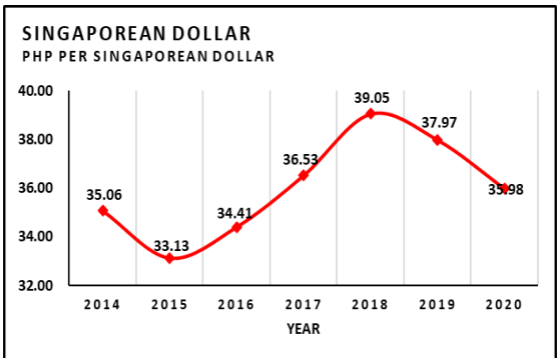
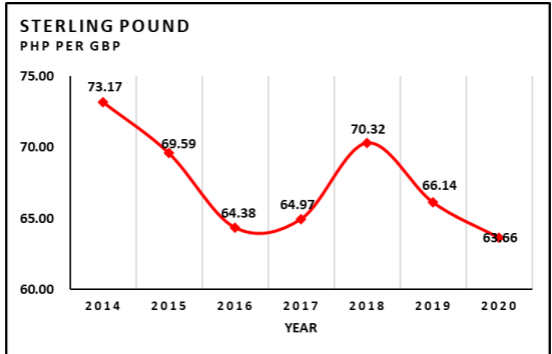
COUNTRY	CURRENCY	Foreign Currency in PHP	PHP in Foreign Currency	US\$ in Foreign Currency
Pakistan+	rupee	0.30	3.34	160.33
Saudi Arabia*	rial	12.80	0.08	3.75
Singapore*	dollar	36.12	0.03	1.33
South Africa+	rand	3.28	0.30	14.64
South Korea*	won	0.04	22.78	1,094.21
Sweden+	kroner	5.82	0.17	8.26
Switzerland*	franc	54.07	0.02	0.89
Taiwan+	NT dollar	1.71	0.59	28.12
Thailand*	baht	1.59	0.63	30.16
United Arab Emirates (UAE)*	dirham	13.08	0.08	3.67
United Kingdom*	pound	64.62	0.02	0.74
United States of America*	dollar	48.04	0.02	1.00

Source: BSP Reference Rate  
 XE Currency Converter

## CURRENCY CHARTS

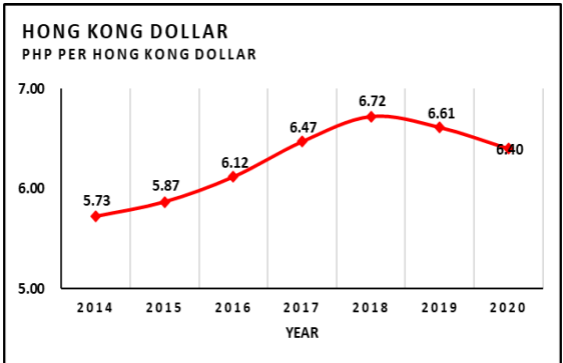
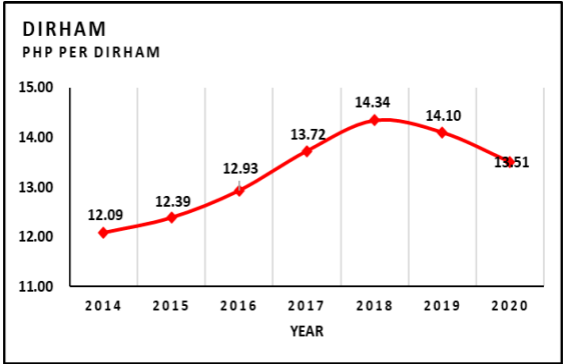


*Note: Yearly Average Rate*

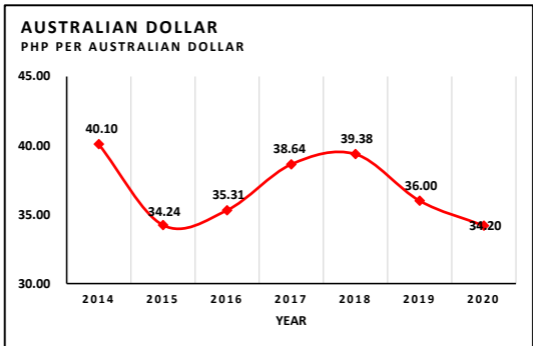
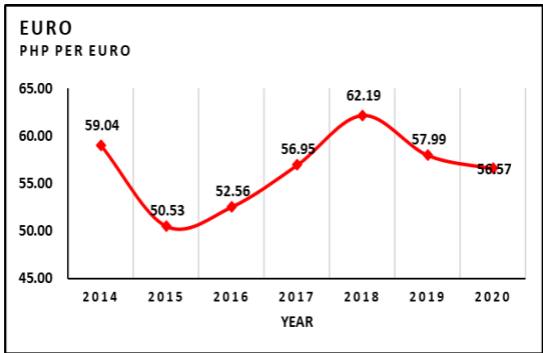


(Cont'd)

**CURRENCY CHARTS**



*Note: Yearly Average Rate*



(Cont'd)

## PRIME RATES

Approximate rates prevailing in 4th Quarter 2020

COUNTRY	RATE (%)
China**	4.75
Hong Kong	5.00
India	8.75
Macau	5.25
Malaysia^^	5.51
Philippines	6.03
Singapore	5.25
Thailand#	6.15
United Kingdom	0.10
United States of America	3.25
Vietnam##	4.50
Jakarta\$\$	4.50

China\* = 5-year Benchmark Lending Rate

India\$ = The data is provided by Arkind LS Private Limited, an Arcadis Alliance Partner

Malaysia^ = Base Lending Rate (average based on 16 financial institutions)

Thailand # = Minimum Loan Rate % per annum (average based on local bank)

United Kingdom\*\* = Bank Rate (Bank of England base rate)

Vietnam## = Min and in VND per year

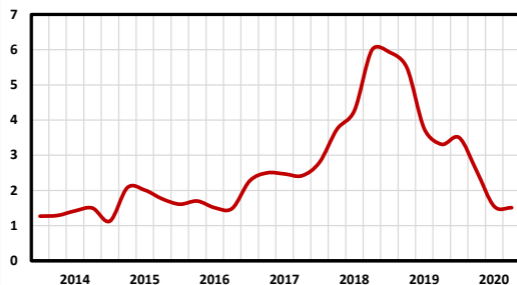
Jakarta\$\$ = The data for Jakarta is provided by PT Lantera Sejahtera Indonesia



## MANILA REFERENCE RATE

Approximate rates prevailing in 4th Quarter 2020

Manila Reference Rate (%)



### PHILIPPINE CENTRAL BANK MANILA REFERENCE RATE

DATE	(%)
Mar 2014	1.27
Jun 2014	1.29
Sep 2014	1.42
Dec 2014	1.50
Mar 2015	1.13
Jun 2015	2.08
Sep 2015	2.01
Dec 2015	1.76
Mar 2016	1.61
Jun 2016	1.70
Sep 2016	1.51
Dec 2016	1.49
Mar 2017	2.27
Jun 2017	2.50
Sep 2017	2.47
Dec 2017	2.42
Mar 2018	2.80
Jun 2018	3.74
Sep 2018	4.27
Dec 2018	5.99
Mar 2019	5.93
Jun 2019	5.49
Sep 2019	3.75
Dec 2019	3.31
Mar 2020	3.50
Jun 2020	2.55
Sep 2020	1.55
Dec 2020	1.51

Note: Based on all maturities.





## OTHER INFORMATION

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[Arcadis Professional Services  
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[Environmental Sustainability](#)

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[Arcadis Asia Sectors & Services](#)

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[Arcadis Philippines Leadership Team](#)

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PHILIPPINE MAP



## PUBLIC HOLIDAYS

	2021
<b>PHILIPPINES</b>	
New Year's Day	01 January*
Chinese New Year	12 February#
EDSA Revolution Anniversary	25 February#
Maundy Thursday	01 April*
Good Friday	02 April*
Black Saturday	03 April#
Araw ng Kagitingan	09 April*
Labor Day	01 May*
End of Eid-ul-Fitre (Feast of Ramadan)	12/13 May*
Independence Day	12 June*
Eid-ul-Adha	19/20 July*
Ninoy Aquino Day	21 August#
National Heroes Day	30 August*
All Saints' Day	01 November#
Bonifacio Day	30 November*
Immaculate Conception	08 December#
Christmas Day	25 December*
Rizal Day	30 December*
<p>* <i>Regular Holidays</i>                      # <i>Special Non-Working Holidays</i></p> <p><i>Note:</i></p> <p><i>Under Proclamation No. 1107, All Soul's Day (Nov. 2), Christmas Eve (Dec. 24) and last day of the year (Dec. 31) have been declared as 'Special Working Days'. This was signed by President Duterte on Feb. 26, 2021.</i></p>	

## PUBLIC HOLIDAYS

	2021
<b>CHINA</b>	
New Year's Day	01 Jan
	02 Jan
	03 Jan
Chinese New Year's Eve	11 Feb
Chinese New Year\$	12 Feb
	17 Feb
Ching Ming Festival	03 Apr
	04 Apr
	05 Apr
Labour Day*	01 May
	05 May
Tuen Ng / Dragon Boat Festival	12 Jun
	13 Jun
	14 Jun
Mid-Autumn Festival	19 Sep
	20 Sep
	21 Sep
National Day#	01 Oct
	07 Oct
<p><i>\$ 12-17 February 2021 are holidays</i>  <i>* 01-05 May 2021 are holidays</i>  <i># 01-07 October 2021 are holidays</i></p>	

	2021
<b>HONG KONG</b>	
New Year's Day	01 Jan
Lunar New Year (Day 1)	12 Feb
Lunar New Year (Day 2)	13 Feb
Lunar New Year (Day 4)	15 Feb*
Good Friday	02 Apr
The day following Good Friday	03 Apr
The day following Ching Ming Festival	05 Apr*
The day following Easter Monday	06 Apr*
Labour Day	01 May
Birthday of the Buddha	19 May
Tuen Ng / Dragon Boat Festival	14 Jun
HKSAR Establishment Day	01 Jul
The day following Chinese Mid-Autumn Festival	22 Sep
National Day	01 Oct
Chung Yeung Festival	14 Oct
Christmas Day	25 Dec
The 1st weekday after Christmas Day	27 Dec*
<p><i>*As the festivals in 2021 falls on Sunday, the day following it is designated as a general holiday in substitution</i></p>	

(Cont'd)

## PUBLIC HOLIDAYS

	2021
<b>MACAU</b>	
New Year's Day	01 Jan
Lunar New Year's Eve (Afternoon)	11 Feb*
Lunar New Year's Day	12 Feb
The 2nd day of Lunar New Year	13 Feb
The 3rd day of Lunar New Year	14 Feb
The rest day for 2nd day of Lunar New Year	15 Feb <sup>®</sup>
The rest day for 3rd day of Lunar New Year	16 Feb <sup>®</sup>
Good Friday	02 Apr
The day before Easter	03 Apr
Ching Ming Festival	04 Apr
The rest day for The day before Easter	05 Apr <sup>®</sup>
The rest day for Ching Ming Festival	06 Apr <sup>®</sup>
Labour Day	01 May
The rest day for Labour Day	03 May <sup>®</sup>
Birthday of the Buddha	19 May
Tuen Ng / Dragon Boat Festival	14 Jun
The day following Chinese Mid-Autumn Festival	22 Sep
National Day	01 Oct
The rest day for National Day	04 Oct
Chung Yeung Festival	14 Oct
All Soul's Day	02 Nov
Feast of Immaculate Conception	08 Dec
Macao S.A.R. Establishment Day	20 Dec
Winter Solstice	21 Dec
Christmas Eve	24 Dec
Christmas Day	25 Dec
The rest day of Christmas Day	27 Dec <sup>®</sup>
New Year's Eve (Afternoon)	31 Dec*

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

*<sup>®</sup>As the festivals in 2021 falls on Saturday / Sunday, the day following it is designated as a general holiday in substitution*



	2021
<b>INDIA</b>	
New Year's Day	01 Jan
Chandrama Ugadi	13 Apr
May day	01-May
Ramzan	14 May
Ganesh Chaturthi	10 Sep
Gandhi Jayanti	02 Oct
Vijay Dashmi	15 Oct
Diwali	04 Nov
Christmas Day	25 Dec
<p><i>The data is provided by Arkind LS Private Limited, an Arcadis Alliance Partner</i></p>	

(Cont'd)

	2021
<b>INDONESIA</b>	
New Year's Day	01 Jan
Chinese New Year's (Imlek)	12 Feb
Ascension of Prophet Muhammad	11 Mar
Hindu Day of Quiet (Nyepi)	14 Mar
International Labour Day	01 May
Good Friday	02 May
Ascension Day of Jesus Christ	13 May
Idul Fitri	15 May
	16 May
Waisak Day	26 May
Pancasila Day	01 Jun
Idul Adha Day	20 Jul
Hijriyah New Year	10 Aug
National Independence Day	17 Aug
Prophet Muhammad's Birthday	18 Oct
Christmas Day	25 Dec

## PUBLIC HOLIDAYS

	2021
<b>MALAYSIA</b>	
New Year's Day*	01-Jan
Chinese New Year	12-Feb
	13-Feb <sup>#</sup>
Labour Day	01-May
Hari Raya Aidilfitri**	13-May
	14-May
Wesak Day	26-May
King/Agong's Birthday	7-Jun
Hari Raya Qurban**	20-Jul
Awal Muharam (Islamic New Year)	10-Aug
National Day	31-Aug
Malaysia Day	16-Sep
Prophet Muhammad's Birthday	19-Oct
Deepavali**	4-Nov <sup>##</sup>
Christmas Day	25-Dec
<p>* Except Johor, Kelantan, Kedah, Perlis &amp; Terengganu</p> <p>** Subject to change</p> <p># Except Kelantan &amp; Terengganu</p> <p>## Except Sarawak</p>	

(Cont'd)

	2021
<b>SINGAPORE</b>	
New Year's Day	1 Jan
Chinese New Year	12 Feb
	13 Feb
Good Friday	2 Apr
Labour Day	1 May
Vesak Day	26 May
Hari Raya Puasa	13 May
National Day	9 Aug
Hari Raya Haji	20 Jul
Deepavali	4 Nov
Christmas Day	25 Dec



## PUBLIC HOLIDAYS

	2021
<b>THAILAND</b>	
New Year	01 Jan
Makha Bucha Day	26 Feb
Chakri Memorial Day	06 Apr
Songkran Festival	13 Apr
Songkran Festival	14 Apr
Songkran Festival	15 Apr
Labour Day	03 May <sup>1</sup>
Coronation Day	04 May
Wisakha Bucha Day	26 May
H.M. Queen Suthida Bajrasudhabimalalakshana's Birthday	03 June
H.M. King Maha Vajiralongkorn's Birthday	26 Jul <sup>2</sup>
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	25 Oct <sup>3</sup>
H.M. King Bhumibol Adulyadej's Birthday / Father's Day	06 Dec <sup>4</sup>
Constitution Day	10 Dec
New Year's Eve	31 Dec

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

\*2 - As H.M. King Maha Vajiralongkorn's Birthday falls on Saturday (24 July) ; Monday is designated as a general holidays in substitution

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

4 - As H.M. King Bhumibol Adulyadej's Birthday falls on Sunday (5 Dec) , Monday is designated as a general holiday in substitution

(Cont'd)

## PUBLIC HOLIDAYS

	2021
<b>VIETNAM</b>	
New Year's Day	1 Jan
Lunar New Year	10-14 Feb
	15-16 Jan <sup>#</sup>
Liberation Day of Saigon	30 Apr
International Labour Day	1 May
National Day	2 Sep
Hung Vuong King Celeration	21 Apr
Christmas Day	24-25 Dec
<i># - Substitute</i>	

## IDD CODES AND TIME DIFFERENCES

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

Source: [www.worldtimeserver.com](http://www.worldtimeserver.com) ; [www.worldtimezone.com](http://www.worldtimezone.com)  
[www.timeanddate.com](http://www.timeanddate.com)

## IDD CODES AND TIME DIFFERENCES

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

Source: [www.worldtimeserver.com](http://www.worldtimeserver.com);  
[www.worldtimezone.com](http://www.worldtimezone.com);  
[www.timeanddate.com](http://www.timeanddate.com)



## CONVERSION FACTORS

UNIT	
<b>LENGTH</b>	
10 mm = 1 cm	12 in = 1 ft
100 cm = 1 m	3 ft = 1 yd
1,000 m = 1 km	1,760 yd = 1 mile
<b>AREA</b>	
10,000 m <sup>2</sup> = 1 ha	9 ft <sup>2</sup> = 1 yd <sup>2</sup>
100 ha = 1 km <sup>2</sup>	4,840 yd <sup>2</sup> = 1 acre
640 acre = 1 mile <sup>2</sup>	640 acre = 1 mile <sup>2</sup>
<b>VOLUME</b>	
1,000 ml = 1 L	0.83 gal. (UK) = 1 gal. (US)
1,000 L = 1 m <sup>3</sup>	8 pt. (US) = 1 gal.(US)
1,000 cm <sup>3</sup> = 1 L	4 qt. (US) = 1 gal. (US)
<b>MASS / FORCE</b>	
9.806 N = 1 kg	1,000 lbs. = 1 kip
1,000 g = 1 kg	16 oz = 1 lb
1,000 kg = 1 tonne	2,224 lb = 1 ton
16 tael = 1 catty	
<b>POWER</b>	
1 w = 1 kw	550 ft-lb/sec = 1hp
1 w = 1VA x pf*	
<b>PRESSURE</b>	
1 Pa = 1 N/m <sup>2</sup>	0.068 atm = 1 psi
1,000 Pa = 1 KPa	14.5 psi = 1 bar
1 Mpa = 1 N/mm <sup>2</sup>	0.491 psi = 1 in. Hg
0.01 kg/cm <sup>2</sup> = 1 Kpa	
<b>TEMPERATURE</b>	
<b>COOLING LOAD</b>	
	3,024 kcal/hr = 1TR
12 BTU/hr = 1TR	1.5 hp = 1TR

Refer to [www.online-unit-converter.com](http://www.online-unit-converter.com), [www.dimensionconverter.com](http://www.dimensionconverter.com) for further information.

## CONVERSION FACTORS

TO IMPERIAL (APPROX)		TO METRIC (APPROX)	
1 in	= 25.400 mm	12 in	= 1 ft
1 ft	= 30.480 cm	3 ft	= 1 yd
1 yd	= 0.914 m	1,760 yd	= 1 mile
1 mile	= 1.609 km		
<b>AREA</b>			
10,000 m <sup>2</sup>	= 1 ha	9 ft <sup>2</sup>	= 1 yd <sup>2</sup>
100 ha	= 1 km <sup>2</sup>	4,840 yd <sup>2</sup>	= 1 acre
		640 acre	= 1 mile <sup>2</sup>
<b>VOLUME</b>			
1,000 ml	= 1 L	0.83 gal. (UK)	= 1 gal. (US)
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0.01 kg/cm <sup>2</sup>	= 1 Kpa		
<b>POWER</b>			
1,000 w	= 1 kw	550 ft-lb/sec	= 1 hp
1 w	= 1 VA x pf*		
<b>TEMPERATURE/ COOLING LOAD</b>			
12,000 BTU/hr	= 1 TR	3,024 kcal/hr	= 1 TR
		1.5 hp	= 1 TR



## ARCADIS PROFESSIONAL SERVICES COST AND COMMERCIAL MANAGEMENT

- Preliminary cost advice and cost planning
- Advice on the type of contractual arrangements to be used
- Advice on obtaining tenders
- Preparation of tendering documents
- Negotiation with contractors
- Visiting site and valuation of works in progress
- Assessing the cost of proposed variations
- Attending site and other meetings
- Preparation of financial statements
- Settlement of final cost with contractors and sub-contractors
- Advice on contractor's claims
- Cost engineering
- Evaluation and operation of serial (maintenance) contracts
- Financial evaluation of "package" bid contracts
- Cost and contract research
- Advice on litigation
- Life Cycle Costing
- Lender's Technical Advisory
- Procurement Advisory
- Reinstatement Valuation
- Due Diligence
- 5D BIM Management

### ARCADIS PROFESSIONAL SERVICES COST AND COMMERCIAL MANAGEMENT

#### Budget Formulation

- Construction Feasibility Studies
- Budget Formulation
- Analysis of cost/design options
- Cost Planning
- Value engineering
- Cash flow evaluations
- Cost monitoring and/or cost control of construction works
- Project management or coordination
- Reinstatement assessments for fire insurance
- Quantifying mechanical and electrical installation works
- Quantifying civil engineering works
- Definition and operation of plant procurement programmes
- Tax treatment of construction expenditure
- Research and consultancy in all aspects of construction economics
- Interior decoration and fitting-out works
- Preparations of fixed asset registers
- Environmental certification



## ENVIRONMENTAL SUSTAINABILITY

### Overview of Leadership in Energy & Environmental Design (LEED)

The U.S. based Leadership in Energy & Environmental Design (LEED) Green Building System is a voluntary third-party rating system in which credits are earned for satisfying specified green building criteria. Projects are evaluated within six environmental categories, as follows:

- Sustainable Sites
- Water Efficiency
- Energy & Atmosphere
- Materials & Resources
- Indoor Environmental Quality
- Innovation & Design

Certified, Silver, Gold and Platinum levels of green building certification are awarded based on the total points earned.

### Pre Design

Sustainable design solutions is more efficient and economical if identified and integrated into the project at an early stage.

- Assist in team selection
- Evaluate sustainable concepts and technologies that are applicable to the project.
- Conduct a LEED Design Charette
- Register the project to LEED Online

### ENVIRONMENTAL SUSTAINABILITY

#### Design

Establishing clear LEED goals during this stage will ensure that requirements are accounted for in the project cost.

- Manage the LEED process by monitoring team responsibilities.
- Conduct plan reviews to check if all LEED requirements are incorporated.
- Develop Green Specifications.
- Perform cost analysis when recommending high-cost strategies.
- Liaise with USGBC and GBCI.
- Manage the preparation of LEED documentation for Design Phase Review and ensure these are according to the criteria.
- Develop a whole building simulation to demonstrate the projected annual energy savings of the project.
- Provide technical support (including calculation methodologies and advise in benefits and implications of sustainable measures) to the team.

#### Construction

Normally, a third of the target points are assigned to the Construction team. Proper monitoring and implementation of the agreed green building measures are key in earning/ achieving these targets.

- Provide pre-bid conferences and contractor training
- Evaluate compliance and progress through submittals and reports from contractor.
- Inspect site condition if according to approved guidelines.
- Liaise with USGBC and GBCI
- Manage the preparation of LEED documentation for Construction Phase (final) Review.

## Operations

- Perform post-occupancy project audits - lessons

## Being part of LEED

### Global Linkage and Credentials

Arcadis Philippines Inc. is a member of US Green Building Council (USGBC) and the Philippine Green Building Council (PhilGBC).

Our environmental sustainability team composed of highly skilled architects and engineers, has the most number green professional accreditation than any other company - a combination of LEED AP's, LEED GA's and Certified BERDE Professionals. The team is further strengthened by a group of building energy analysts.

Building energy analysis includes:

- Identification of energy reduction and cost saving measures for new and existing buildings
- Development of final models for use in LEED NC / green building certification
- Our simulation service includes: whole building simulation, artificial light simulation, daylight simulation.



### ENVIRONMENTAL SUSTAINABILITY

#### Energy Modeling

An energy model is a computer simulation based on building design, envelope, orientation, schedule, controls and energy-using systems to predict comparative consumption and expenditures.

#### BERDE Consultancy

The rating schemes include the minimum requirements and the attainable points for BERDE. You can achieve a BERDE Certificate upon completion of the formal BERDE Assessment and Certification process, complying with the requirements, and achieving the minimum cumulative score.

#### WELL Consultancy

**WELL** is composed of over one hundred Features that are applied to each building project, and each **WELL** Feature is designed to address issues that impact the health, comfort, or knowledge of occupants through design, operations and behavior.



## Green Building Facts

- An up-front investment of 5-7% in green building design, on average, results in life cycle savings of 20% of the total construction cost.

*Source: The Costs and Financial Benefits of Green Buildings:  
A report to California's sustainable Building Task Force,  
October 2003.*

- Operating cost decrease by 9%
- Decreased Operating Costs Over Five Years: 13%-14%
- Increased Building Value for Green versus Non-Green Projects: 7%-8%
- Increased Asset Value for Green versus Non-Green Projects 7%
- Payback Time for Green Investments – 6%-8% Years

*Source: World Green Building Trends 2016 Developing Markets  
Accelerate Global Green Growth SmartMarket Report, 2016*

- By reducing potable water use consumption inside and outside, green buildings can reduce up to 40% of water use.

*Source: Poplar Network*

- The emissions savings potential of green buildings is said to be as much as 84 gigatonnes of CO<sub>2</sub> (GtCO<sub>2</sub>) by 2050, through direct measures in buildings such as energy efficiency, fuel switching and the use of renewable energy
- The building sector has the potential to make energy savings of 50% or more in 2050, in support of limiting global temperature rises to 2°C (above pre-industrial levels)

*Source: World Green Building Council*

- Green buildings reduce energy use by an average of 15-20%

### PROJECT & PROGRAMME MANAGEMENT

#### OUR APPROACH

We provide advice and consulting services at strategic, policy and operational levels, concentrating on three key areas:

- Project Feasibility
- Project Set-up
- Project Delivery

Our multidisciplinary team is skilled in change management, process improvement, procurement, sustainability, economics, market analysis and research. In everything we do, we are committed to creating value for our clients by:

- Working collaboratively with them
- Developing a deep understanding of their needs and aspirations
- Providing tailor-made solutions
- Being accessible and responsive

#### PROJECT MANAGEMENT

Integrated Project Management is based on four distinctive phases in the project life cycle:

##### 1. Business Needs and Project Inception

In the early stages of a project, Arcadis Philippines Inc. creates the conditions for success by defining a set of value drivers based on an understanding of all stakeholder interests and requirements.



We consider needs, identify risk and can assist with business planning. Where appropriate, we assist with the development of master plans, option appraisals, overseeing of site acquisitions, management of planning consents and advice on funding strategies. We work with clients to manage the appointment of suitable consultants, including the agreement of services and fees.

## 2. Project Strategy & Development

At the early development stage we compile strategic and design briefs and produce an overall project execution plan. We oversee the production of costs to agree budgets and provide a detailed master programme for project delivery. We recommend the most appropriate procurement strategy and manage the selection of the best value construction team. We provide a single point of contact for the client when dealing with third parties, contractors and suppliers.

## 3. Project Control & Delivery

Prior to commencing, we make sure that a commercially viable solution has been agreed, that all contracts are administered in the correct form and that necessary management procedures are in place. We set up systems and processes to enable the sharing of information, management of change and identification of potential risks to successful project delivery. We monitor quality, time and costs and provide leadership to the team, resolving issues, liaising with third parties, and reporting on progress as agreed with the client.

### PROJECT & PROGRAMME MANAGEMENT

#### 4. Commissioning & Asset Management

In the final stages of the project, we monitor commissioning, agree completion, settle final accounts and enable the smooth transition of the asset through to ongoing management.

Post-handover, we instigate project reviews and feed lessons learned to the client.

### PLANNING

The planning and programming team is a multifunctional group of professionals who are dedicated to the primary management requirement of planning and programming. Our approach is to assist in controlling progress, not simply monitoring it.

#### Benefits

Professional planning and programming

- Enhances management's understanding of progress and assists trade-offs and decision making
- Reduces uncertainty in project completion deadlines
- Avoids costly time overruns
- Provides expert advice that designers and clients understand
- Gives high quality clear outputs that make a real contribution to project success
- Enables corrective action advice to mitigate programme slippages and variations



## WATER CONSULTANCY

### OUR APPROACH

Having acquired and consolidated a number of major international consulting firms, Arcadis now has a technical and managerial resource unmatched in the Philippines. These resources, include the world leaders in Flood Management, Seismic Engineering, and Climate Change Adaption, all areas of concerns becoming increasingly high-profile in the Philippines.

Our resources and pedigree differentiate us in our capacity to provide comprehensive environmental engineering and management consulting services to solve our client's increasingly complex water challenges, and enable us to go beyond individual projects, or even programs, and fill the roles of trusted advisor and business partner.

We can create solutions that endure at every phase of the water cycle, however some of our specialized services include:

### Water Supply and Treatment

Providing safe water to meet growing demand and increasingly stringent water quality standards, while protecting the environment by providing wastewater treatment systems against a backdrop of ever intensifying population densities.

### WATER CONSULTANCY

#### Conveyance

Planning, design and construction services for new and rehabilitated trunk sewers, force mains, interceptors, pumping stations and tunnels.

#### Water Management

Philippines is not only prone to natural calamity and perennial flooding, but is also now recognized as vulnerable to consequences of climate change that will affect water and food security. With our experts in water management, having lead projects such as New Orleans and New York flood defenses, Arcadis aims to enhance the quality, safety and adaptability of urban and coastal, river and ecosystems of the Philippines.

#### Water for Industry

Our industrial specialists have a thorough understanding of facility operations and waste generating practices. For a company planning new production operations or updating existing plant, we strive to develop water/wastewater management strategies that meet regulatory and production objectives.



## Business Advisory

To optimize our clients' ability to manage critical infrastructure by driving better business outcomes, through:

- Asset Valuation
- Regulatory Compliance Review
- Capital Improvement Planning
- Water Demand Projections
- Social and Environmental Feasibility Studies

## PPP and Infrastructure Consultancy

Here at Arcadis Philippines, we understand that major infrastructure projects are by nature complicated in more ways than one. Being marred with uncertainties and prone to risks, these types of developments require solutions that are cost-effective, sustainable, efficient and delivered where risks are identified at the onset and effectively managed throughout the project's life cycle.

Being a strong player in the infrastructure industry with significant and in-depth positions in roads, rail, ports and airports, Arcadis can help both the public and private sector to lay the foundations for a better future.

### Our Local Services:

- Cost Management
- Environmental Accreditation
- Development Management
- Project Management
- Construction Management
- Water Consultancy
- Conveyance and Network Consultancy

### Our Global Services:

- Architectural Design
- Landscape Architecture
- Performance Driven Design
- Comprehensive Planning
- Sustainable Urban Development
- Transportation Planning
- Urban Planning
- Asset Strategy and Performance
- Business Transformation and Resiliency
- Investment and Finance
- Technology and Information
- Civil Engineering
- Structural Engineering





## QUALITY SYSTEM ISO 9001:2015

Arcadis Philippines Inc. recognises the importance of Quality Assurance especially in a country where Quantity Surveying is not a well recognized profession and quality service is of paramount importance. The establishment of a standard quality control system for all aspects of the services being provided, coupled with our in-house staff training programmes, ensures that Arcadis Philippines Inc. continues to provide the best services available to our clients.

The Certification for ISO 9001:2015 and ISO 14001:2015 was issued by BSI (British Standard Institution). BSI is the business standards company that helps over 80 clients worldwide adopt standards of best practice and turn them into habits of excellence. BSI was appointed by Royal Charter as the world's first national Standards Body to develop standards for the UK and was a founding member of the International Organization for Standardization (ISO). BSI is responsible for originating many of the world's most commonly used standards incl. ISO 9001 and publishes over 2,500 product specification and business process standards annually. These standards address today's issues from sustainable events to nano-technology; spanning sectors including aerospace, construction, healthcare and IT.



### QUALITY SYSTEM ISO 9001:2015 QUALITY MANAGEMENT SYSTEM

Arcadis Philippines Inc. operates Quality Management System that complies with the requirements of ISO 9001:2015 for the following scope of services:

- Quantity Surveying
- Environmental Sustainability and Services
- Development Management Services that includes our Programme and Project Management Services
- Water Services.

The current certification is valid until 12 April 2021. We had our re-certification audit last 14-22 December 2020 and we are currently waiting for the issuance of our updated certification.

Quality Management System plays crucial role in securing optimum performance in every service we deliver. ISO 9001 enables us to manage our processes and actions thereby consistently monitoring and placing preventive controls in place for risks associated to operations



## QUALITY SYSTEM ISO 14001:2015 ENVIRONMENTAL MANAGEMENT SYSTEM

Arcadis Philippines Inc. operates Environmental Management System that complies with the requirements of ISO 14001:2015.

The current certification is valid until 12 April 2021. We had our re-certification audit last 14-22 December 2020 and we are currently waiting for the issuance of our updated certification.



ISO 14001 requires organizations to consider all environmental aspects such as air pollution, water and sewage, issues, waste management, soil contamination, climate change mitigation and adaptation, and resource use and efficiency of its activities and services and determine it has control or influence over a life cycle perspective relevant to its operations. As we strengthen our focus on environmental sustainability, we are proud to comply on this globally accredited standard and together with our clients, help to respond in ever changing environmental conditions properly.

### ARCADIS ASIA SECTORS

#### AUTOMOTIVE

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

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

#### AVIATION

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

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



## **CHEMICALS & PHARMACEUTICALS**

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

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

## **COMMERCIAL DEVELOPERS**

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

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

### **ARCADIS ASIA SECTORS**

#### **FINANCIAL INSTITUTIONS**

Driving better investment and asset performance and improving sustainable returns in current challenging markets is the key focus of our sector specialists. Through utilizing unique market insight, such as our global asset performance benchmarks, our deep technical knowledge, and an unrivalled global track record in working with financial institutions, we are able to define solutions to meet client needs and to enhance their business outcomes.

#### **OIL AND GAS**

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

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

#### **RAIL**

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

In Asia, we have been involved in providing engineering design, cost management, contract administration, risk



management, business advisory and mobility oriented design for numerous metro and high speed rail projects in Hong Kong, Mainland China, Taiwan, Singapore and Malaysia.

## **PORTS AND WATERWAYS**

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

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

## **RETAIL & CONGLOMERATES**

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

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

### ARCADIS ASIA SERVICES

#### BUSINESS ADVISORY

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

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#### COST MANAGEMENT

Be it a high-rise office building, a state-of-the-art rail station or a large scale industrial development, the need to achieve value for money is central to every investment strategy.

Our people understand the need to accurately advise on costs and procurement at planning stage, ensuring a development or program is both economically and environmentally viable for many years to come.

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#### DESIGN & ENGINEERING

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





## **ENVIRONMENT**

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

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## **PROJECT & PROGRAMME MANAGEMENT**

Organizing the creation of the world's largest, most complex and iconic programs of work in the built and natural environment today is no easy task. Budgets, supply chains, health and safety, timeframes and the large number of parties involved can be daunting. At Arcadis, we work alongside our clients to create the right strategy, manage and mitigate risk, and assure the outcomes to meet our clients' business objectives and create exceptional value.

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## **WATER**

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

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