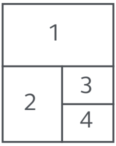
ARCADIS Design & Consultancy for natural and built assets

Construction Cost Handbook
PHILIPPINES 2020

Arcadis Philippines Inc.



Handbook Cover Photos:

1. **Aruga by Rockwell Resort and Residences**
   Architect: Gallego Architects
2. **Pioneer House BGC**
   Architect: Arkitektii Philippines, Inc.
3. **Cebu-Cordova Link Expressway**
   Architect: Dissing+Weitling Architecture
4. **Teresa Treated Water Distribution System**

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 2019**.

3. CONSTRUCTION MARKET UPDATE

4. FINANCIAL

5. OTHER INFORMATION

2019

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ARCADIS Design & Consultancy for natural and built assets

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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. Having worked on various projects nationwide, covering both the private and public sectors. 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

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	US$/m² CFA			
	MANILA	HONG KONG	SINGAPORE	KUALA LUMPUR
DOMESTIC				
Apartments, high rise, average standard	968 - 1,197	3,020 - 3,490	1,340 - 1,485	300 - 585[#]
Apartments, high rise, high end	1,287 - 2,276	3,910 - 4,550	2,065 - 3,045	700 - 1,375
Terraced houses, average standard	942 - 1,153	4,120 - 4,770	1,740 - 1,920	215 - 345[^]
Detached houses, high end	1,830 - 3,103	6,040 up	2,210 - 2,900	730 -990
OFFICE / COMMERCIAL				
Medium/high rise offices, average standard	958 - 1,152	2,950 - 3,410	1,740 - 1,920[#]	570 - 750[*]
High rise offices, prestige quality	1,287 - 1,616	3,550 - 4,120	1,955 - 2,100[#]	855 - 1,265[*]
Out-of-town shopping centre, average standard	814 - 1,014	2,940 - 3,450	1,955 - 2,030	540 - 720
Retail malls, high end	1,112 - 1,558	3,840 - 4,580	2,065 - 2,245	670 - 1,005
HOTELS				
Budget hotels - 3-star, mid market	1,216 - 1,356	3,800 - 4,040	2,175 - 2,355	1,005 - 1,405
Business hotels - 4/5-star	1,371 - 2,290	3,940 - 4,580	2,790 - 3,115	1,325 - 2,190
Luxury hotels - 5-star	1,884 - 3,158	4,580 - 5,270	2,790 - 3,115	1,910 - 2,455

INDUSTRIAL				
Industrial units, shell only (Conventional single storey framed units)	519 - 584	N/A	760 - 930	315 - 435
Owner operated factories, low rise, light weight industry	697 - 872	2,290 - 2,880	N/A	425 - 525
OTHERS				
Underground/basement car parks (<3 levels)	502 - 750	3,200 - 3,840	940 - 1,255	310 - 535
Multi storey car parks, above ground (<4 levels)	483 - 683	1,920 - 2,280	650 - 930^	215 - 345
Schools (primary and secondary)	713 - 984	2,490 - 2,690	N/A	245 - 310+
Students' residences	755 - 968	2,860 - 3,250	1,595 - 1,705	295 - 365^^
Sports clubs, multi purpose sports/leisure centres (dry sports)	1,207 - 1,756	3,750 - 4,320	1,995 - 2,100	585 - 735
General hospitals - public sector	1,450 - 1,665	4,800 - 5,350	2,790 - 2,900	840 - 1,160
Exchange Rate Used : US$1 =	PHP 51.05	HK$ 7.82	S$ 1.38	RM 4.15

The above cost are at 4th Quarter 2019 Levels, inclusive of preliminaries but exclusive of contingencies.

Manila — Rates are exclusive of contingencies & include 12% VAT

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.

Singapore — Rates are nett of GST and exclusive of contingencies
Includes raised floor and ceiling to tenanted areas but excludes office carpets (normally under tenant's fit-out)
^ Open on all sides with parapet

Kuala Lumpur — # 6 - 12 units per floor, $46m^2$ - $83m^2$ per unit; excluding air-conditioning, kitchen cabinets and home appliances
^Excluding air-conditioning, kitchen cabinets and home appliances
* Exclude tenant fit-out
+ Schools with standard government provisions
^^ Student hostels to university standard

(Cont'd)

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES (Cont'd)

BUILDING TYPE	US$/m² CFA			
	BANGKOK	MACAU	INDIA	HO CHI MINH
DOMESTIC				
Apartments, high rise, average standard	801 - 951	2,233 - 2,731	570 - 653	650 - 806
Apartments, high rise, high end	1,068 - 1,319	3,118 - 4,765	860 - 1,035	827 - 948
Terraced houses, average standard	501 - 618	3,805 - 4,541	394 - 414	438 - 514
Detached houses, high end	868 - 1,052	4,641 - 6,038	520 - 544	500 - 610
OFFICE / COMMERCIAL				
Medium/high rise offices, average standard	801 - 951	2,570 - 3,318	430 - 465	760 - 880
High rise offices, prestige quality	1,002 - 1,285	3,318 - 3,630	538 - 570	877 - 1,195
Out-of-town shopping centre, average standard	684 - 885	2,420 - 3,630	420 - 455	N/A
Retail malls, high end	918 - 968	3,805 - 4,591	585 - 632	710 - 930
HOTELS				
Budget hotels - 3-star, mid market	1,252 - 1,385	3,381 - 3,830	808 - 895	1,410 - 1,725
Business hotels - 4/5-star	1,602 - 1,836	4,591 - 5,488	1,258 - 1,491	N/A
Luxury hotels - 5-star	1,869 - 2,170	5,488 - 6,487	1,590 - 1,740	1,780 - 2,137

INDUSTRIAL				
Industrial units, shell only (Conventional single storey framed units)	534 - 668	N/A	336 - 394	312 - 393
Owner operated factories, low rise, light weight industry	N/A	N/A	357 - 420	353 - 465
OTHERS				
Underground/basement car parks (<3 levels)	601 - 801	2,008 - 2,944	285 - 305	645 - 770
Multi storey car parks, above ground (<4 levels)	200 - 327	1,110 - 1,460	227 - 249	415 - 455
Schools (primary and secondary)	N/A	2,220 - 2,570	282 - 320	545 - 595
Students' residences	N/A	1,759 - 2,046	305 - 335	545 - 700
Sports clubs, multi purpose sports/leisure centres (dry sports)	N/A	N/A	595 - 620	806 - 862
General hospitals - public sector	N/A	N/A	653 - 715	N/A
Exchange Rate Used : US$1 =	BAHT 29.96	MOP 8.06	INR 71.11	VND 23,300

The above costs are 4th Quarter 2019 levels. inclusive of preliminaries unless otherwise stated.

Macau	Rates are exclusive of contingencies and any management contract fee	Ho Chi Minh	Rates are nett of VAT and contingencies
India	Rates are based on projects in Bangalore and are nett of GST. Mumbai costs are generally 8% higher.	Bangkok	Rates exclude VAT and contingencies

(Cont'd)

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES (Cont'd)

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

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

The above costs are 4th Quarter 2019 levels. inclusive of preliminaries unless otherwise stated.

Beijing, Shanghai, Guangzhou/Shenzhen, Chongqing/Chengdu

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

M & E COSTS FOR SELECTED ASIAN CITIES

M&E COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	MANILA=	HONG KONG	SINGAPORE*	KUALA LUMPUR
	(PHP/m²)	(HK$/m²)	(S$/m²)	(RM/m²)
MECHANICAL SERVICES				
Offices	4,000 - 6,800	1,880 - 2,650	153 - 249	320 - 490
Industrial *	800 - 1,600	160 - 260	34 - 117	85 - 190
Hotels	3,500 - 11,190	2,100 - 2,550	215 - 278	300 - 590
Shopping Centres	2,890 - 7,070	2,100 - 2,650	147 - 246	300 - 475
Apartment	1,360 - 4,450	850 - 2,000up	90 - 170	120 - 210
ELECTRICAL SERVICES				
Offices	3,500 - 7,200	1,720 - 2,400	158 - 258	290 - 460
Industrial **	2,000 - 3,500	620 - 860	55 - 136	145 - 190
Hotels	4,900 -10,200	1,900 - 2,500	277 - 367	295 - 550
Shopping Centres	3,060 - 6,600	1,750 - 2,400	160 - 304	295 - 460
Apartment	3,600 - 6,300	1,050 - 2,100up	109 - 236	105 - 210
HYDRAULIC SERVICES				
Offices	1,230 - 2,200	700 - 850	26 - 55	35 - 65
Industrial	800 - 1,400	480 - 650	18 - 36	40 - 50
Hotels	2,250 - 6,820	1,800 - 2,800	122 - 172	175 - 270

Shopping Centres	1,220 - 1,650	700 - 900	46 - 80	30 - 35
Apartment	2,250 - 4,100	1,350 - 2,100	79 - 143	50 - 100
FIRE SERVICES				
Offices	980 - 1,560	550 - 700	33 - 56	60 - 80
Industrial	1,000 - 2,500	400 - 500	23 - 51	45 - 65
Hotels	1,100 - 2,030	600 - 850	28 - 55	65 - 90
Shopping Centres	1,090 - 1,730	550 - 700	37 - 56	55 - 80
Apartment	980 - 1,350	100 - 600	25 - 51	15 - 30
LIFTS / ESCALATORS				
Offices	1,800 - 4,930	700 - 1,150	63 - 162	125 - 350
Industrial	0 - 590	550 - 750	41 - 104	55 - 180
Hotels	1,800 - 3,500	550 - 850	49 - 82	100 - 285
Shopping Centres	1,600 - 3,010	850 - 1,000	56 - 90	95 - 120
Apartment	850 - 3,440	450 - 850	41 - 113	65 - 110

Costs are at 4th Quarter 2019 levels, exclusive of contingencies unless otherwise stated.

Note:

* Generally without A/C.

Excludes special power supply.

Manila: Transformer, included in Electrical Services

Hong Kong: -nil-

Singapore: Rates are nett of GST and exclude BAS

(Cont'd)

M&E COSTS FOR SELECTED ASIAN CITIES

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

BUILDING TYPE	BANGKOK##	MACAU	INDIA	HO CHI MINH
	(BAHT/m²)	MOP/m²	INR/m²	VND('000)/m²
MECHANICAL SERVICES				
Offices	4,400 - 4,800	N/A	4,750 - 6,730	2,090 - 2,975
Industrial *	1,550 - 1,600	N/A	2,185 - 3,880	N/A
Hotels	4,600 - 5,200	2,590 - 2,990	5,815 - 6,350	N/A
Shopping Centres	4,600 - 4,800	2,350 - 2,940	4,535 - 5,940	N/A
Apartment	4,300 - 4,500	900 - 1,200	2,590 - 3,210	1,570 - 2,150
ELECTRICAL SERVICES				
Offices	3,400 - 3,800	N/A	4,200 - 5,775	2,320 - 2,780
Industrial **	1,950 - 2,200	N/A	2,470 - 4,105	N/A
Hotels	3,800 - 4,500	2,590 - 3,090	4,660 - 6,355	N/A
Shopping Centres	2,800 - 3,200	2,590 - 2,940	4,005 - 5,360	N/A
Apartment	2,800 - 3,350	1,000 - 1,290	2,120 - 2,775	2,040 - 2,572
HYDRAULIC SERVICES				
Offices	780 - 900	N/A	730 - 1,120	340 - 630
Industrial	750 - 790	N/A	505 - 880	N/A
Hotels	1,400 - 1,650	1,790 - 2,190	3,825 - 5,760	N/A

Shopping Centres	790 - 950	600 - 790	1,090 - 1,970	N/A
Apartment	1,200 -1,400	1,490 - 1,990	1,725 - 2,385	660 - 770
FIRE SERVICES				
Offices	780 - 850	N/A	1,170 - 1,530	720 - 1,185
Industrial	730 - 750	N/A	535 - 735	N/A
Hotels	780 - 890	910 - 1,120	1,360 - 1,740	N/A
Shopping Centres	780 - 820	610 - 810	1,120 - 1,295	N/A
Apartment	750 - 850	250 - 300	625 - 745	490 - 615
LIFTS / ESCALATORS				
Offices	1,100 - 1,400	N/A	975 - 1,240	680 - 1,300
Industrial	N/A	N/A	630 - 815	N/A
Hotels	1,100 - 1,400	610 - 810	1,415 - 2,060	N/A
Shopping Centres	300 - 450	460 - 710	1,655 - 2,120	1,390 - 1,960
Apartment	600 - 800	460 - 610	880 - 1,140	770 - 1,120

Costs are at 4th Quarter 2019 levels, exclusive of contingencies unless otherwise stated.

Note:

Macau: -nil-

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

Bangkok: Based upon nett enclosed area and nett of VAT-

(Cont'd)

M&E COSTS FOR SELECTED ASIAN CITIES

M&E COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	SHANGHAI (RMB/m²)	BEIJING (RMB/m²)	SHENZHEN / GUANGZHOU (RMB/m²)	CHONGQING / CHENGDU (RMB/m²)
MECHANICAL SERVICES				
Offices	814 - 1,035	775 - 1,200	775 - 1,150	750 - 1,020
Industrial *	181 - 304	170 - 280	155 - 285	145 - 240
Hotels	1,040 - 1,356	950 - 1,224	1,080 - 1,350	960 - 1,320
Shopping Centres	1,102 - 1,160	806 - 970	715 - 910	920 - 1,040
Apartment	330 - 436	143 - 459	152 - 410	155 - 310
ELECTRICAL SERVICES				
Offices	639 - 721	470 - 850	540 - 795	465 - 680
Industrial **	320 - 453	326 - 459	320 - 459	270 - 370
Hotels	697 - 890	719 - 962	715 - 980	600 - 855
Shopping Centres	556 - 697	490 - 690	500 - 690	525 - 680
Apartment	270 - 395	258 - 406	285 - 500	235 - 350
HYDRAULIC SERVICES				
Offices	115 - 171	97 - 143	128 - 184	88 - 125
Industrial	92 - 135	97 - 143	89 - 124	88 - 125
Hotels	386 - 613	377 - 490	390 - 500	340 - 465

Shopping Centres	144 - 194	143 - 204	114 - 168	105 - 155
Apartment	176 - 238	173 - 234	150 - 280	105 - 185
FIRE SERVICES				
Offices	239 - 335	184 - 270	230 - 350	248 - 300
Industrial	165 - 276	153 - 230	143 - 272	135 - 240
Hotels	303 - 408	224 - 383	285 - 425	260 - 360
Shopping Centres	271 - 403	224 - 383	248 - 383	260 - 380
Apartment	58 - 108	71 - 138	72 - 152	60 - 115
LIFTS / ESCALATORS				
Offices	294 - 578	294 - 577	295 - 517	310 - 570
Industrial	142 - 410	145 - 400	150 - 440	155 - 360
Hotels	230 - 520	232 - 520	250 - 480	258 - 445
Shopping Centres	342 - 520	327 - 520	325 - 470	300 - 455
Apartment	173 - 306	175 - 289	130 - 500	145 - 250

Costs are at 4th Quarter 2019 levels, exclusive of contingencies unless otherwise stated.

Note:

* Generally without A/C.

** Excludes special power supply.

Shanghai:	-nil-
Beijing:	-nil-
Guangzhou/Shenzhen:	-nil-
Chongqing/Chengdu:	-nil-

CONSTRUCTION COSTS FOR PHILIPPINES

CONSTRUCTION COSTS FOR PHILIPPINES

BUILDING TYPE	PESO/m²		
	BUILDING	SERVICES	TOTAL
DOMESTIC			
Apartments, high rise, average standard	40,360 - 47,582	9,040 - 13,500	49,400 - 61,082
Apartments, high rise, high end	53,526 - 96,575	12,180 - 19,640	65,706 - 116,215
Terraced houses, average standard	45,201 - 53,865	2,910 - 5,000	48,111 - 58,865
Detached houses, high end	84,348 - 142,074	9,060 - 16,340	93,408 - 158,414
OFFICE / COMMERCIAL			
Medium/high rise offices, average standard	37,390 - 42,700	11,510 - 16,100	48,900 - 58,800
High rise offices, prestige quality	50,940 - 59,810	14,750 - 22,690	65,690 - 82,500
Out-of-town shopping centre, average standard	31,710 - 36,905	9,860 - 14,870	41,570 - 51,775
Retail malls, high end	45,846 - 61,091	10,930 - 18,470	56,776 - 79,561
HOTELS			
Budget hotels - 3-star, mid market	48,547 - 51,031	13,550 - 18,200	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 - 127,460	17,630 - 33,740	96,184 - 161,200
INDUSTRIAL			
Industrial units, shell only (conventional single story framed units	22,083 - 22,111	4,400 - 7,700	26,483 - 29,811
Owner operated factories, low rise, light weight industry	31,182 - 35,045	4,400 - 9,455	35,582 - 44,500
OTHERS			
Underground/basement car parks (<3 levels)	20,789 - 28,430	4,860 - 9,870	25,649 - 38,300
Multi storey car parks, above ground(<4 levels)	20,035 - 25,169	4,630 - 9,680	24,665 - 34,849
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 - 60,590	16,180 - 24,410	74,000 - 85,000

Costs are at 4th Quarter 2019 levels. Manila building costs are expected to increase by approximately 0.5% per month (compounded) during 2019.

M&E COSTS FOR PHILIPPINES

M&E COSTS FOR PHILIPPINES

BUILDING TYPE	PESO/m^2					
	TOTAL SERVICES	ELECTRICAL SERVICES	MECHANICAL SERVICES	FIRE SERVICES	LIFTS / ESCALATOR	PLUMBING SERVICES
DOMESTIC						
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
OFFICE / COMMERCIAL						
Medium/high rise offices, average standard	11,510 - 16,100	3,500 - 4,700	4,000 - 5,400	980 - 1,350	1,800 - 3,000	1,230 - 1,650
High rise offices, prestige quality	14,750 - 22,690	4,800 - 7,200	4,500 - 6,800	1,050 - 1,560	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
HOTELS						
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 - 33,740	5,500 -10,200	4,950 -11,190	1,480 - 2,030	2,200 - 3,500	3,500 - 6,820
INDUSTRIAL						
Industrial units, shell only (conventional single story framed units	4,400 - 7,700	2,000 - 3,500	800 - 1,500	800 - 1,000	0 - 400	800 - 1,300
Owner operated factories, low rise, light weight industry	4,400 - 9,455	2,000 - 3,500	800 - 1,600	800 - 2,500	0 - 455	800 - 1,400
OTHERS						
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 2019 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^2 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^2-150m^2 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 coved 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^2 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

FF&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 (PHP)	HONG KONG (HK$)	SINGAPORE (S$)	KUALA LUMPUR (RM)
1. Excavating basement ≤ 2.00m deep	m^3	270	220	20	15 - 25
2. Excavating for footings ≤ 1.50m deep	m^3	538	200	20	15 - 25
3. Remove excavated materials off site	m^3	350	300	15 - 20	18 - 30
4. Hardcore bed blinded with fine materials	m^3	1,400 - 1,600	950	50	72 - 100
5. Mass concrete grade 15	m^3	4,400	1,100	177 - 187	220 - 295
6. Reinforced concrete grade 30	m^3	4,899	1,200	117 - 122	240 - 300
7. Mild steel rod reinforcement	kg	51 - 55	9.7	1.25 - 1.35	3.25 - 3.7
8. High tensile rod reinforcement	kg	52 - 55	9.7	1.25 - 1.35	3.25 - 3.7
9. Sawn formwork to soffits of suspended slabs	m^2	950 - 1,200	410	40	36 - 46
10. Sawn formwork to columns and walls	m^2	1,200	410	40	36 - 46
11. 112.5mm thick brick walls	m^2	N/A	400	35 - 40	42 - 50
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m^2	1,500	1,000	43	70 - 85

13. Aluminium casement windows, single glazed	m^2	12,500	3,800	290	380 - 600
14. Structural steelwork - beams, stanchions and the like	kg	180	35	4 - 4.50	6 - 9
15. Steelwork - angles, channels, flats and the like	kg	160	42	4 - 4.50	6 - 9
16. 25mm cement and sand (1:3) paving	m^2	650	155	21	17 - 26
17. 20mm cement and sand (1:4) plaster to walls	m^2	500- 700	160	22	18 - 26
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	1,800	400	74	50 - 75
19. 12mm fibrous plasterboard ceiling lining	m^2	1,400 - 1,645	580	30	35 - 45
20. Two coats of emulsion paint to plastered surfaces	m^2	500 - 800	90	3.50 - 4	3.4 - 5
Average expected preliminaries	%	12-18	10 - 15	12 - 15	6 - 15

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

13. Aluminium casement windows, single glazed	m^2	7,000	4,000	6,230	6,315,000
14. Structural steelwork - beams, stanchions and the like	kg	60 - 75	35	125	52,650
15. Steelwork - angles, channels, flats and the like	kg	60 - 75	40	125	52,650
16. 25mm cement and sand (1:3) paving	m^2	200 - 240	120	493	94,000
17. 20mm cement and sand (1:4) plaster to walls	m^2	220 - 260	150	405	144,000
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	1,200	450	1,765	674,180
19. 12mm fibrous plasterboard ceiling lining	m^2	750 - 850	650	1,400	245,700
20. Two coats of emulsion paint to plastered surfaces	m^2	140 - 180	200	250	88,900
Average expected preliminaries	%	12 – 18	10	9 - 13	8 - 12

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

Macau: -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.

(Cont'd)

MAJOR RATES FOR SELECTED ASIAN CITIES

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

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

The above costs are 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

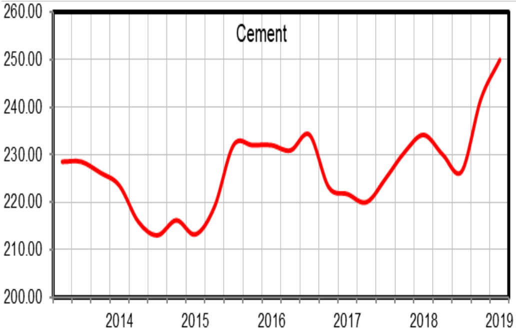
Guangzhou/Shenzhen: -nil-

Beijing,

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

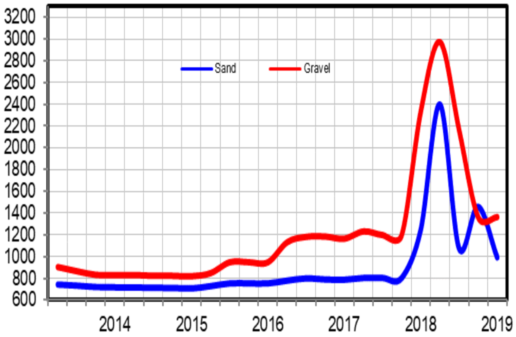
RETAIL PRICES OF BASIC CONSTRUCTION

Cement
Php / bag (40kg)



Year

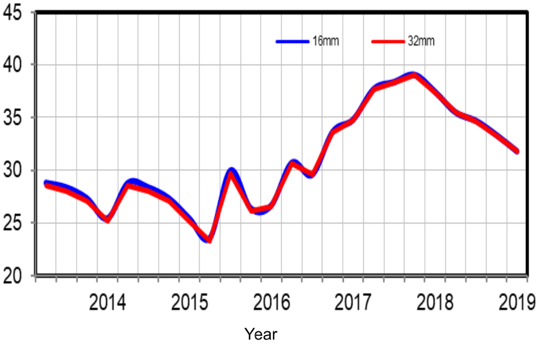
Aggregates
Php / m³



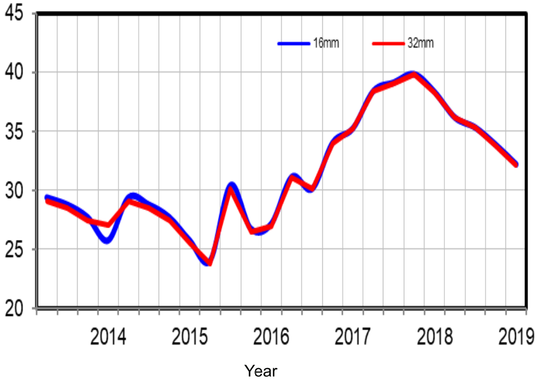
Year

MATERIALS FOR PHILIPPINES

Reinforcing Bar
(Intermediate Grade - Grade 40; 275 MPa)
Php / kg

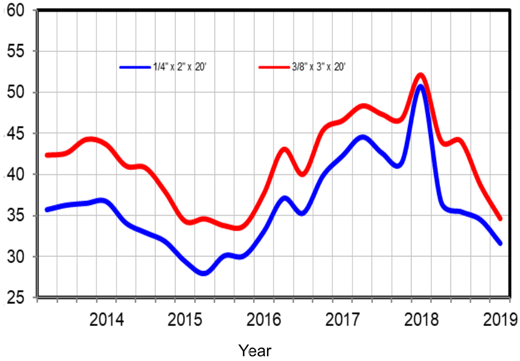


Reinforcing Bar
(High Yield Grade - Grade 60; 400 MPa)
Php / kg

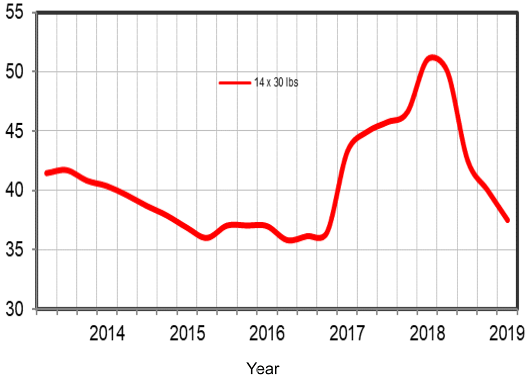


RETAIL PRICES OF BASIC CONSTRUCTION

Structural Steel (Angle Bar; A36)
Php / kg



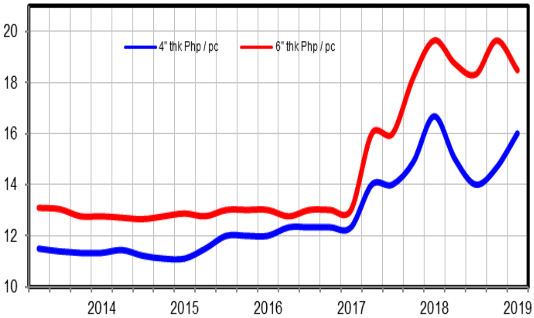
Structural Steel (Wide Flange)
Php / kg



MATERIALS FOR PHILIPPINES

Ordinary Concrete Hollow Blocks

Php / piece



Year

UNIT COSTS FOR ANCILLARY FACILITIES FOR PHILIPPINES

DESCRIPTION	UNIT	PESO
SQUASH COURTS		
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
TENNIS COURTS		
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
SWIMMING POOLS		
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^2 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
BASKETBALL COURTS		
Exposed court, approximately 975m^2 including player benches and excluding equipment	per court	6,000,000 - 10,500,000
Covered court approximately 975m^2, including metal viewing seats, built-in furnitures, provision for T&B, etc*	per court	20,000,000 - 40,000,000

*includes provision for forward/rear fold ceiling mounted basketball goal.
2019 4Q Rates

DESCRIPTION	UNIT	PESO
PLAYGROUND EQUIPMENT		
Outdoor playground equipment comprising various activities and safety mat	per set	500,000 - 1,500,000
SAUNAS		
Sauna room for 4-6 people complete with all accessories (enclosing structure not included)	per room	500,000
STEAM BATHS		
Steam bath for 4-6 people complete with all accessories (enclosing structure not included)	per room	800,000
GOLF COURSES		
(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
GOLF SIMULATOR		
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^3/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^3/day	93,000-111,000
20. Desalination System; Reverse Osmosis up to 200 CMD	per m^3/day	68,000-101,000
21. Desalination System; Reverse Osmosis 200 CMD to 600 CMD	per m^3/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 2019.
5. The cost per unit of the equipment is higher at lower capacity

FIT-OUT COSTS FOR PHILIPPINES

DESCRIPTION	PESO/m²
HOTELS	
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: 1. Includes built-in furniture floor, wall and ceiling, finishes, drapery, sanitary fittings, and special lightings. 2. Excludes partitioning, loose furniture, artworks, M&E works, building shell, operational items and equipment (e.g. cutlery, crockery, linen, television, refrigerator, etc.) opening, expenses, stage requirement, and computer systems. 3. 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)	
COMMERCIAL	
Shopping centers	27,000 - 38,000
Notes: 1. Mall / Public areas; excluding tenant area 2. See notes 1, 2, & 3 below	

NOTE:

1. Costs are at December 2019 Levels
2. Costs include wall, floor, ceiling furnishes, doors, FF&E, preliminaries. Forex US$1:51.05
3. Costs exclude operational equipment and supplies, structure, external enclosure, major M&E plant, financing and developers costs, professional and marketing fees.

DESCRIPTION	PESO/m²
OFFICES	
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.	
RESTAURANT	
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 2019 Levels
2. Costs include wall, floor, ceiling furnishes, doors, FF&E, preliminaries. Forex US$1:51.05
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/m²
THEATRES/CINEMAS	
Theatres *	54,000 -103,000
Cinemas **	63,000 - 90,000
* Includes stage rigging equipment, draperies, AV equipment projectors, screens, acoustics and seatings	
** Includes screens, projection equipment, seats, finishes, ticketing booth	
AUDITORIUMS	43,000 - 70,000
BUSINESS CLUBS	56,000 - 220,000
BAR / BILLIARDS *	35,000 - 44,000
* Excluding kitchen equipment	

NOTE:

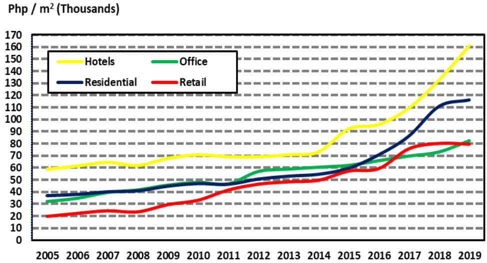
1. Costs are at December 2019 Levels
2. Costs include wall, floor, ceiling furnishes, doors, FF&E, preliminaries.
   Forex US$1:51.05
3. Costs exclude operational equipment and supplies, structure, external enclosure, major M&E plant, financing and developers costs, professional and marketing fees.

KITCHEN EQUIPMENT COSTS FOR PHILIPPINES

DESCRIPTION	COST (Php)
BUSINESS CLUB 500 - 900 m² floor area	22M - 50M
EXECUTIVE DINING 200 - 400 m² floor area	22M - 50M
4 STAR HOTEL 50 - 150 rooms	41M - 92M
5 STAR HOTEL 200 - 500 rooms	140M - 240M
OFFICE CANTEEN 200 - 300 m² floor area	10M - 20M

GENERAL CONSTRUCTION DATA 2

TRENDS IN CONSTRUCTION COSTS FOR PHILIPPINES

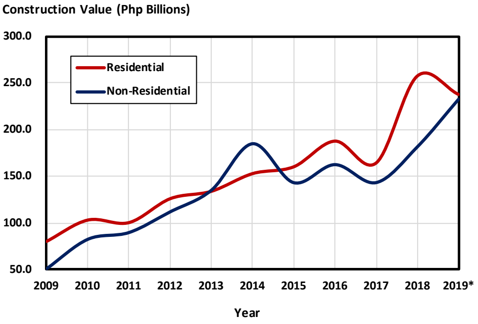


Building Construction Cost (Php/m²)

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

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

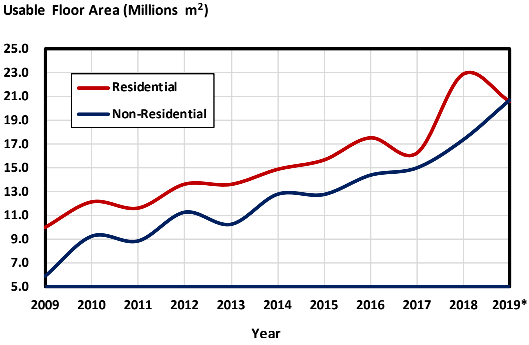
CONSTRUCTION VALUE



Year	Construction Value Php ('000)	
	Residential	Non-Residential
2008	74,892,765	55,930,704
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	187,599,730	162,517,347
2017	164,153,250	143,315,470
2018	257,417,054	181,481,663
2019*	237,709,609	232,347,758

** Forecast Source: www.psa.gov.ph*

CONSTRUCTION ACTIVITY



Year	Usable Floor Area (m^2)	
	Residential	Non-Residential
2008	9,844,829	6,851,270
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*	20,649,151	20,761,039

** Forecast Source: 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$/kwh
Manila	PHP 51.05	**0.18'	**0.16'
Hong Kong	HK$ 7.82	0.11	0.13
Kuala Lumpur	RM 4.15	0.053-0.138	0.092-0.123
Singapore	S$ 1.38	0.17^	0.17^
Bangkok	Baht 29.96	0.078-0.148**	0.104-0.106
Shanghai	RMB 7.00	0.088(peak) / 0.044(normal)	4.860(basic tariff) / 0.084(summer) / 0.080 (non-summer)
Beijing	RMB 7.00	0.070-0.113	0.195-0.197(peak) / 0.121-0.123(normal)
Guangzhou	RMB 7.00	0.085-0.128	0.089-0.124
Chongqing	RMB 7.00	0.074-0.081	0.113-0.121
Macau	MOP 8.06	0.17	0.17
Bangalore	INR 71.11	0.071-0.102	0.088-0.129
New Delhi	INR 71.11	0.020-0.1125	0.102
Ho Chi Minh	VND 23,300	0.13	0.12 / 0.07

Cost are at 4th Quarter 2019 Levels

Basis of Charges in Manila, Philippines

Water
Domestic : 24m³ - 101m³/month
Commercial/Industrial : 3,750m³/month

Electricity
Domestic :190kwh - 2,099 kwh
Commercial/Industrial : 185,404 kwh

Basis of Charges in Hong Kong, China

Water
Domestic
0 - 12m³ : Free of Charge
12 - 43m³ : US$0.54/m³
43 - 62m³ : US$0.83/m³
Above 62m³ : US$1.17/m³

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$0.12/kWh
1,000-1,800 kWh : US$0.15/kWh 1,800-2,600 kWh: US$0.18/kWh
2,600-3,400 kWh : US$0.21/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: 1-180m³ = US$0.714; 181-260m³ = US$1.000
261m³ above = US$1.286
Commercial/Industrial : Central Districts: US$1.357
Other Districts= US$1.286

Unleaded Fuel
Unleaded fuel rate is for Unleaded 97

Electricity
Domestic: (Below 1kv & monthly consumption): 1-240 kWh = US$0.070; 241-400 kWh = US$0.077
400 kWh above= US$0.113

Commercial/Industrial (1-10kV): Central Districts: Peak = US$0.197, Normal = US$0.123
Other Districts: Peak = US$0.195, Normal = US$0.121

Basis of Charges in Shanghai, China

Water
Domestic: 0-220m³ = US$0.493/m³ 220-300m³ = US$0.690/m³
Above 300m³ = US$0.833/m³

Unleaded Fuel
Unleaded fuel rate is for Unleaded 95.

Electricity
Domestic (Charged on yearly consumption):
0-3,120kWh = US$0.088/kWh(peak) / US$0.044/kWh(normal); 3,120-4,800kWh = US$0.097/kWh(peak) / US$0.048/kWh(normal); Above 4,800kWh = US$0.140/kWh(peak) / US$0.070/kWh(normal)

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^3$	US$/$m^3$	US$/litre	US$/litre	US$/litre
**0.39-0.49'	**1.82'	0.88	N/A	1.11
0.83	0.59	1.87	N/A	2.29
0.137-0.482	0.499-0.549	0.525	N/A	0.501
1.99^^ 2.67^^^	1.99^^^^	1.38^^^^^	N/A	1.96^^^^^^
0.284-0.482	0.317-0.528	0.868	N/A	0.900*
0.493-0.833	0.68	0.90	N/A	1.013
0.714-1.286	1.286-1.357	0.91	N/A	1.02
0.285-0.571	0.54	0.92	N/A	1.02
0.500-0.843	0.65	0.778	N/A	0.837
0.56-0.90	0.75	1.80	N/A	1.64
0.562-0.703	1.41	0.965	N/A	1.067
0.35-1.06	1.405-2.467	0.931	N/A	1.033
0.26	0.87 / 0.48	0.79	N/A	0.93

Cost are at 4th Quarter 2019 Levels

Basis of Charges in Guangzhou, China
Unleaded Fuel
Unleaded fuel rate is for Unleaded 97

Basis of Charges in Chongqing, China
Unleaded Fuel
90# = US$0.798/litre; 97# = US$0.893/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)

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

Basis of Charges in Macau, China
Electricity
Electricty tariffs are a composition of demand charges, consumption charges, fuel clause adjustment and government tax.
Water
Domestic: Consumption charge = US$0.56/$m^3$ for 28m^3 or below, US$0.64/$m^3$ for 29m^3 to 60m^3, US$0.75/$m^3$ for 61m^3 to 79m^3 and US$0.90/$m^3$ for 80m^3 or above. Other charges (Depending on meter size 15mm - 200mm) : Meter rental = US$0.34 - 57.64/month

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
- ^ Electricity tariff is based on low tension power supply
- ^^ 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^3
- ^^^ 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^3
- ^^^^ Non-domestic water tariff effective from 1 July 2018. Rate includes water conservation tax, water-bourne fee and sanitary appilance fee.
- ^^^^^ As at 17 October 2019
- ^^^^^^ 98 Unleaded petrol as at 17 October 2019

ESTIMATING RULES OF THUMB

Densities of Common Materials

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

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 $^3/_4$"
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^2)
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^3/m^2	-	0.55 m^3/m^2
Formwork/floor area	2.0 m^2/m^2	-	3.0 m^2/m^2
Reinforcement	180 kg/m^3	-	280 kg/m^3

Average External Wall/Floor Ratio

Residential Apartments	0.35 m^2/m^2
Office, Hotel	0.40 m^2/m^2
Industrial	0.40 m^2/m^2

Average Internal Wall/Floor Ratio

Residential Apartments	1.00 m^2/m^2
Office, Hotel	0.50 m^2/m^2
Industrial	1.50 m^2/m^2

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^3
Concrete Truck (24 ton)	5.5 m^3

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

Average Cooling Load

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

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

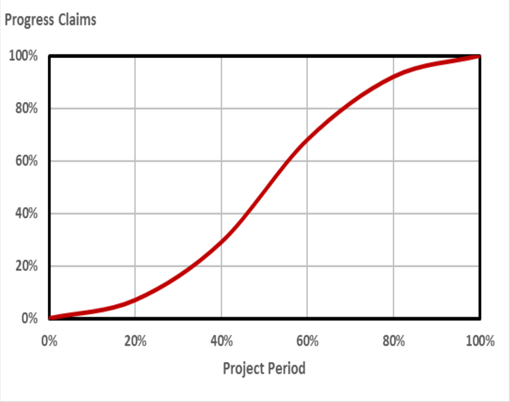
The above dimensions are for a single court with appropriate clearance. No spectator seating or support area has been allowed.

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%

ARCADIS Design & Consultancy for natural and built assets

CONSTRUCTION MATERIALS WHOLESALE PRICE INDEX IN THE NATIONAL CAPITAL REGION (NCR) 2019

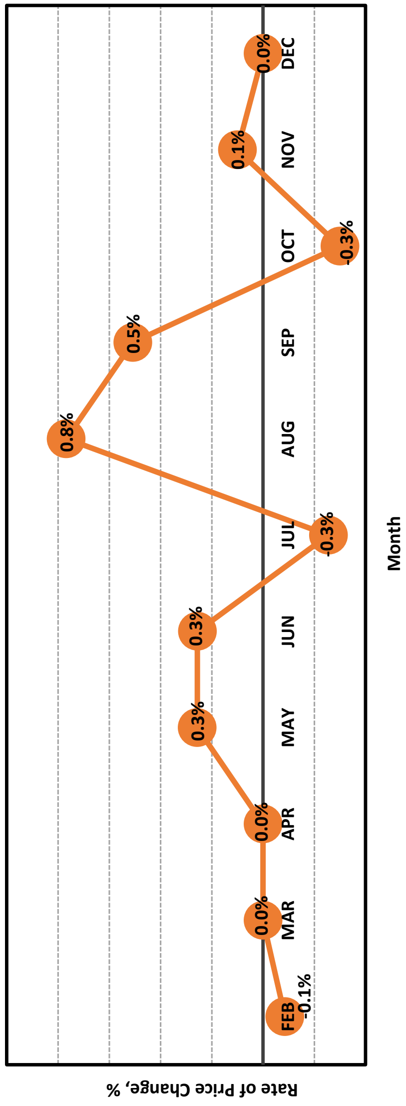
ALL ITEMS	2019											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ALL ITEMS	**117.00**	**116.90**	**116.90**	**116.90**	**117.20**	**117.50**	**117.20**	**118.10**	**118.70**	**118.40**	**118.50**	**118.50**
A. Sand and Gravel	128.30	129.90	131.40	131.40	131.00	131.00	132.00	132.40	132.00	132.20	132.20	133.30
B. Concrete Products & Cement	120.80	120.80	119.90	120.00	120.50	120.90	118.70	119.20	121.60	121.60	121.60	121.70
C. Hardware	113.90	113.90	114.50	114.50	114.80	116.60	116.40	116.40	116.40	117.40	116.40	118.00
D. Plywood	113.20	113.30	113.60	113.60	114.20	113.80	114.00	113.90	113.90	114.10	113.90	113.80
E. Lumber	125.10	125.40	126.00	125.70	127.00	127.40	127.60	127.60	127.60	128.20	127.60	128.00
F. G.I. Sheet	107.50	107.50	108.80	108.80	108.80	110.30	110.70	111.00	111.00	111.00	111.00	110.90
G. Reinforcing & Structural Steel	116.10	115.00	114.90	114.90	115.00	115.00	115.70	118.10	118.10	116.30	118.10	116.30
H. Tile Works	113.50	113.50	113.50	113.50	113.50	114.50	114.20	117.60	117.60	118.80	117.60	118.20
I. Glass & Glass Products	104.90	104.90	104.90	104.90	104.90	104.90	104.90	104.90	104.90	104.90	104.90	104.90
J. Doors, Jambs, and Steel Casement	110.80	111.00	109.50	109.50	109.50	109.80	109.80	109.80	109.80	109.80	109.80	109.80

CONSTRUCTION MATERIALS WHOLESALE PRICE INDEX IN THE NATIONAL CAPITAL REGION (NCR) 2019

ALL ITEMS	2019											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
K. Electrical Works	121.10	121.90	122.50	123.40	123.60	124.10	123.50	123.30	123.30	124.10	123.30	124.20
L. Plumbing Fixtures & Accessories / Waterworks	122.80	122.80	123.40	123.60	124.50	125.10	125.00	125.20	125.20	125.80	125.20	125.90
M. Painting Works	104.50	104.50	104.70	104.70	104.70	104.70	105.10	104.90	105.10	105.30	105.10	105.20
N. PVC Pipes	107.40	107.40	107.40	107.40	107.40	108.10	111.50	111.30	111.30	111.50	111.30	111.50
O. Fuel and Lubricants	112.60	117.60	122.40	123.90	126.50	118.60	121.20	119.70	119.60	120.60	119.60	120.50
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
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

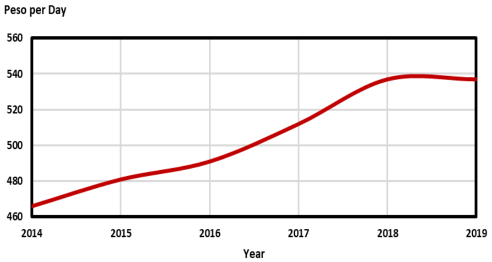
Construction Materials Wholesale Price Index 2019

Month-on-Month Price Movement (2012=100)



Source: Philippine Statistics Authority

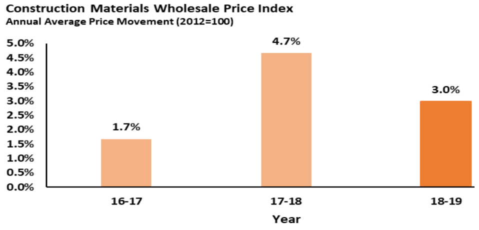
MINIMUM WAGE



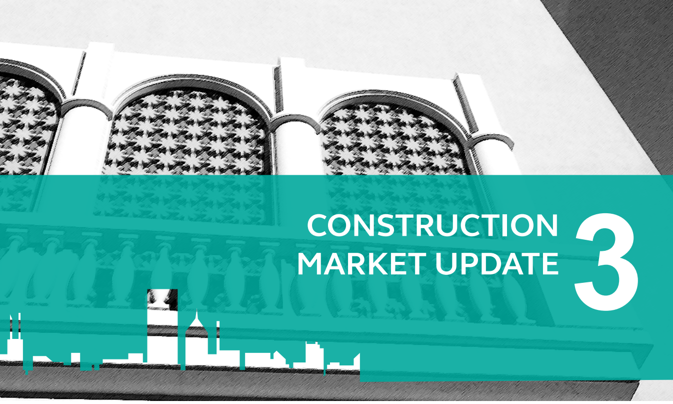
Year	NCR Wage Order No.	Amount of Increase	Peso per Day
08 January 1991	W.O. No. NCR 2	12.00	118.00
16 December 1993	W.O. No. NCR 3	17.00	135.00
01 April 1994	W.O. No. NCR 3	10.00	145.00
02 February 1996	W.O. No. NCR 4	16.00	161.00
01 May 1996	W.O. No. NCR 4	4.00	165.00
06 February 1997	W.O. No. NCR 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



COMMODITY GROUP	2016 Ave.	2017 Ave.	2018 Ave.	2019 Ave
ALL ITEMS	107.4	109.2	114.3	117.7
A. Sand and Gravel	113.8	116.7	120.7	131.4
B. Concrete Products & Cement	109.2	110.4	115.5	120.6
C. Hardware	106.4	107.7	113.9	115.8
D. Plywood	109.2	108.6	111.7	113.8
E. Lumber	109.3	111.9	120.6	126.9
F. G.I. Sheet	105.3	105.5	107.0	109.8
G. Reinforcing & Structural Steel	104.8	107.8	115.6	116.1
H. Tile Works	108.7	110.1	112.9	115.5
I. Glass & Glass Products	104.9	104.9	104.9	104.9
J. Doors, Jambs, and Steel Casement	103.9	106.6	109.7	109.9
K. Electrical Works	109.8	109.7	117.0	123.2
L. Plumbing Fixtures & Accessories / Waterworks	116.8	117.9	119.4	124.5
M. Painting Works	102.7	103.9	104.7	104.9
N. PVC Pipes	106.5	106.4	107.1	109.5
O. Fuel and Lubricants	81.6	94.6	117.7	120.2
P. Asphalt	104.2	104.2	104.2	104.2
Q. Machinery and Equipment Rental	146.9	146.9	146.9	146.9



CONSTRUCTION MARKET UPDATE 3

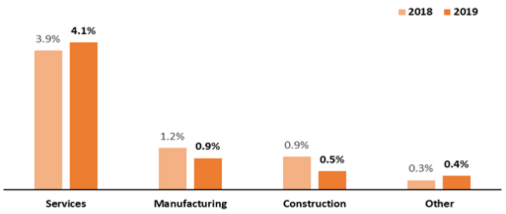
GENERAL OVERVIEW

The Philippines GDP grew by 5.9% in 2019, below the 6.2% posted in 2018, but still maintained its position as one of the fastest growing economies in Asia. The key drivers for growth were the same, comprising mostly of the Services sector, Manufacturing, and Construction however growth in the industry sector was limited by the delayed signing of the country's national budget which resulted to public sector underspending, exacerbated by the election spending ban which prohibited public infrastructure works from commencing up to mid-2Q19.

Positively contributing to the growth was the decline in the average annual inflation for 2019 listed at 2.5%, well within Bangko Sentral ng Pilipinas' (BSP) range of 2.0% - 4.0%. The slowdown in inflation also prompted the BSP to slash interest rates three times for a total of 75 basis points, bringing the current rate to 4.0% from a height of 4.75% in 2018.

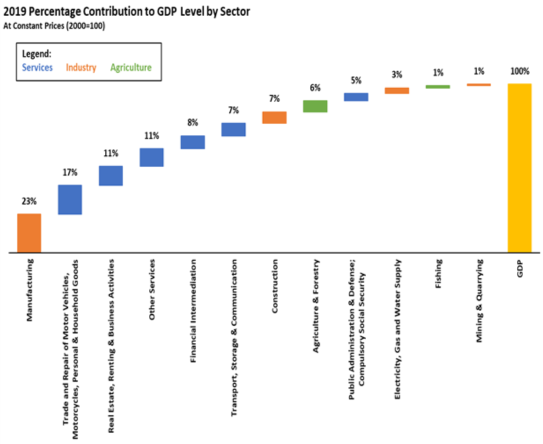
In addition, the tourism sector continued its robust growth as the number of foreign tourist arrivals bested the figures of last year, highlighting the allure of the country's scenic locations as the Philippines also won the award for Asia's Leading Dive Destination for 2019. The growth was also bolstered by the continuous expansion of Philippine Offshore Gaming Operators (POGOs).

Percentage Contribution to GDP Growth



Source: Philippine Statistics Authority (PSA)

Of the 5.9% GDP growth in 2019, biggest contribution came from the Services sector with 4.1%, followed by Manufacturing and Construction with 0.9% and 0.5%, respectively. Other remaining sectors comprised of Agriculture, Mining & Quarrying, and Electricity, Gas & Water Supply, account for the remaining 0.4%.

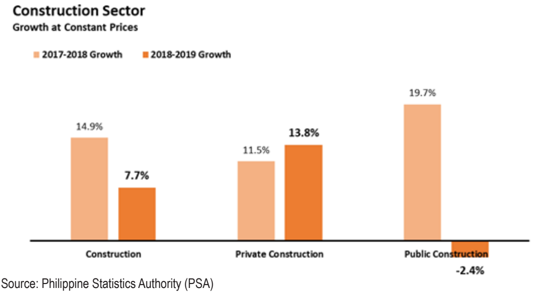


Source: Philippine Statistics Authority (PSA)

The largest share to the GDP level belongs to Manufacturing at 23% of total GDP, followed by Trade & Repair of Motor Vehicles, Motorcycles, Personal & Household Goods (17%), Real Estate, Renting & Business Activities (11%) and Other Services (11%).

CONSTRUCTION SECTOR

Overall, the construction sector grew by 7.7% in 2019, slower than the 14.9% growth recorded in 2018 largely resulting from the budget delay and national elections that occurred in the first half. The effect was evident as public sector construction declined by 2.4%, a reversal from the 19.7% expansion in 2018. However, private construction compensated and grew faster in 2019 at 13.8% ahead of 11.5% in the prior year.



Source: Philippine Statistics Authority (PSA)

Growth in the private sector also includes public infrastructure under PPP models which has seen more development since the introduction of the Build Build Build program lead by the current Government Administration.

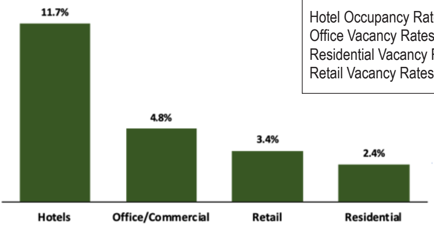
With growth in the industry, construction costs have continued to increase across most market segments. Average construction cost increase is again ahead of inflation at approximately 5.0% from 2018-2019 vs the construction material price index inflation of 3.0%. The difference reflects increases in labour costs, changes in supply/demand, higher standards offset by some reprieve in foreign exchange rates.

In the hotel sector, architectural features have contributed most significantly to average costs driven by new casino developments and 5-star hotels striving for higher standards of interiors.

Office construction has not changed considerably since 2018 therefore higher costs are largely driven by increasing demand in some areas and a capacity constrained market. Growth generated by Philippine Offshore Gaming Organizations (POGO) sector taking up significant amounts of available stock in parts of the Philippines.

Retail costs did increase but at a slower rate compared to 2018 likely driven by developers reducing investment costs and opting for lower cost facilities given the increase in online shopping and the uncertain future within the sector.

2018 - 2019 Construction Cost Inflation
(%)



Sector Demand – Based on JLL Q3 2019 *Market Update for Metro Manila*

Hotel Occupancy Rates	70%
Office Vacancy Rates	8.0%
Residential Vacancy Rates	3.2%
Retail Vacancy Rates	2.5%

For luxury / prestige projects, longer term trends show the tendency to develop and deliver high-end products with a 10-year average construction cost inflation of over 5% across market segments.

Residential-

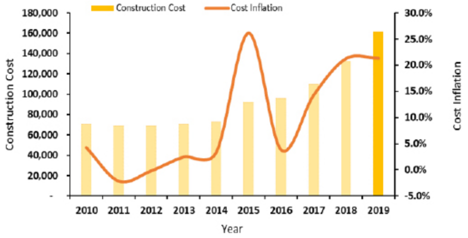
BUILDING CONSTRUCTION COST
(Php/m², %)

Note: Based on Luxury / High-End projects

Hotels

BUILDING CONSTRUCTION COST

(Php/m², %)



Note: Based on Luxury Hotels

Office

BUILDING CONSTRUCTION COST

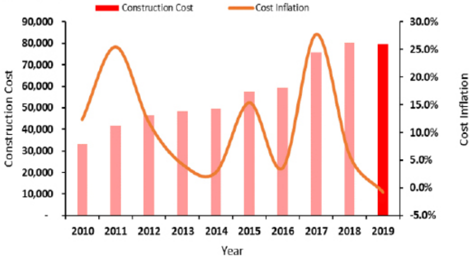
(Php/m², %)

Note: Based on Prestige / High-End Offices

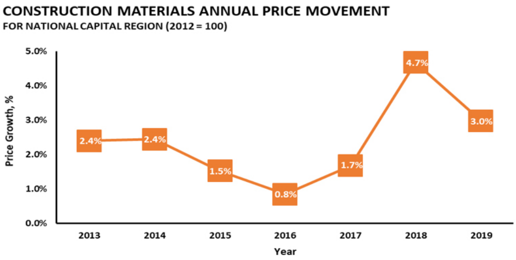
Retail

BUILDING CONSTRUCTION COST

(Php/m², %)



Note: Based on High-End Retail Malls

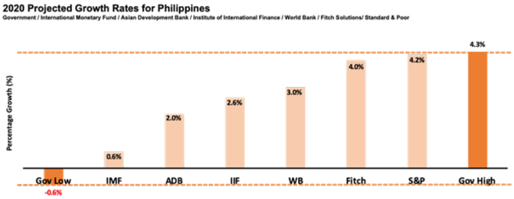


Philippine Statistics Authority - Construction Materials Wholesale Price Index for NCR

The price inflation of construction materials in Metro Manila grew at a slower pace of 3.0% in 2019 following the 4.7% surge in 2018. Drivers for the annual average price increase were concrete products & cement accounting for 1.3% of the total, and the sand and gravel commodity which accounted for another 0.9%. In contrast reinforcing and structural steel which carry a big weight in the overall items only accounted for 0.1% of the total 3.0% increase largely attributed to the strengthening of the Philippine Peso and generally lower world market demand as most rebars and steel products in the country are imported. There was also no minimum wage increase for workers in the National Capital Region in 2019 and the value of the Peso appreciated by 1.7% to Php 51.80 per 1USD from Php 52.66 per 1USD in 2018.

GENERAL OUTLOOK

While economic forecasts late 2019 showed continued GDP growth of 6.5-7.5%, the impacts of COVID-19 will clearly have a major impact on this. While the situation was still developing at the time of printing, it is clear that there will be significant economic impact caused by the Enhanced Community Quarantine across many sectors. Predictions remained optimistic that GDP growth was still possible, seen across a range of independent organizations mid-April 2020.



Growth prospects for the country will depend on the capability of businesses to adapt to the “new normal” of enhancing technological innovations as well as how the government can redirect the fundamentals of the country’s economic growth with fiscal and monetary policies playing an important role. In a worst-case scenario that remains until the end of the year, the government’s projected economic growth is a contraction of 0.6%. However, when some economic development programs are continued along with the gradual and partial lifting of the lockdown, a 4.3% growth may be achievable. Meanwhile, other global institutions and credit rating agencies’ projections all fall within the government’s growth range.

A subdued pace of construction activities may be expected in 2020 but it is hoped that the government’s infrastructure will persist for some time this year as supply of foreign imported materials like rebar and steel remain impacted until lockdowns and COVID related restrictions subside overseas.

The tourism and retail sectors will be some of the most significantly hit through the Enhanced Community Quarantine and closure of International borders. This is likely to see investment decisions in hospitality and retail space parked for a period until the sector rebounds. Sales and leasing activities in the office property market will be lacklustre for a while with POGO operations suspended and border limitations impacting labour availability to restart. While BPOs have had some exemption from the Quarantine measures some have adopted some work from home capabilities which appears to be successful and may continue to reduce operating costs. Through being able to maintain continuity amongst global disruption, Philippines has gained further credibility and may see further growth in the BPO sector, albeit it is unclear at this time how much of this growth will require additional real estate.

The residential property market experienced weaker demand as both local and foreign buyers reassess their spending decisions on whether it is a good time to purchase during this time.

There are currently mixed forecasts on the foreign exchange rate projection for 2020 which will affect import prices, however the range of predictions are mostly around 50:1 to 52:1 against the USD which will not have considerable impact from the end of 2019 – also a positive sign in the confidence of the Philippines.

While Philippines is not alone in any of the challenges faced in 2020, early indications show that Philippines is resilient and with some short-term impact will rebound in 2020 for a strong 2021.

FINANCIAL 4

PHILIPPINES KEY DATA

POPULATION	
Population (2018)	107.0 M
Population (2019)	108.7 M
Urban Population*	51.2%
Population under 15	30.6%
Population over 65	5.4%
Ave. Annual Growth Rate (2015-2020)	1.6%
GEOGRAPHY	
Land Area	300,000 km^2
Agricultural Area (2016)	41.5%
Capital City	Manila
(population Metropolitan Manila - Census 2015)	12.88M
(population Manila - Census 2015)	1.78M
ECONOMY 2019	
Monetary Unit	Peso
Average Headline Inflation Rate (2012=100)	
Full Year 2019	2.5%
Gross Domestic Product (GDP)	
Full Year 2019	Php 18,613,044 (in mil)
GDP per Capita (Full Year 2019)	Php 171,906
CONSTRUCTION 2019	
Gross Value of Construction Output (Full Year 2019)	Php 2,620,773 (in mil)
Net Value of Construction Output (Full Year 2019)	Php 1,502,135 (in mil)
Net Value of Construction Output as a proportion of the GDP (Full Year 2019)	8.1%

** Population on Philippine Cities only*
** Projection*

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

ECONOMIC HIGHLIGHTS 4TH QUARTER 2019

Philippine GDP grows 6.4 percent in Q4 2019; Full year growth at 5.9 percent

Gross Domestic Product (GDP) posted a year-on-year growth of 6.4 percent in the fourth quarter of 2019, resulting in the 5.9 percent full-year growth for 2019.

Trade and Repair of Motor Vehicles, Motorcycles, Personal and Household Goods; Manufacturing; and Construction were the main drivers of growth for the fourth quarter of 2019.

Among the major economic sectors, Services posted the fastest growth in the fourth quarter of 2019 with 7.9 percent. Industry grew by 5.4 percent. Agriculture, Hunting, Forestry and Fishing registered a growth of 1.5 percent.

Net Primary Income (NPI) from the Rest of the World and Gross National Income (GNI) had corresponding growths of 4.6 percent and 6.2 percent. On an annual basis, NPI grew by 3.5 percent, and GNI by 5.5 percent.

With the country's projected population reaching 108.7 million in the fourth quarter of 2019, per capita GDP grew by 4.8 percent. Meanwhile, per capita GNI and per capita Household Final Consumption Expenditure (HFCE) posted a growth of 4.5 percent and 3.9 percent, respectively.

Source: National Accounts of the Philippines
Philippine Statistics Authority (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 percent 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 x 12 = 120)
i = interest rate per period (e.g. 12% p.a. compounded monthly; i = 12 % ÷ 12 months = 1% per period)

MORTGAGE REPAYMENT TABLE

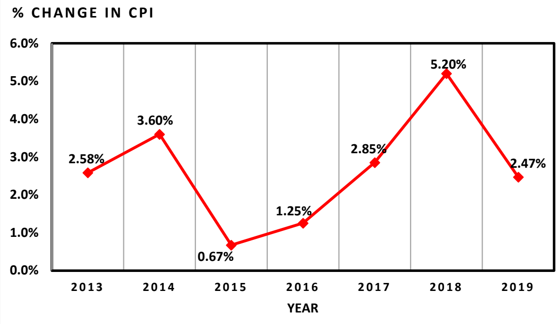
Based on:
- 1,000 units of currency
- Interest compounded monthly
- Equal monthly repayments

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.

Repayments = 1,000,000 / 1,000 x $13.22
= $13,220 per month

CONSUMER PRICE INDEX



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%

Note: Base Date 2012 = 100
Source: Philippine Statistics Authority

EXCHANGE RATES

Approximate Rates prevailing as at 29 November 2019.

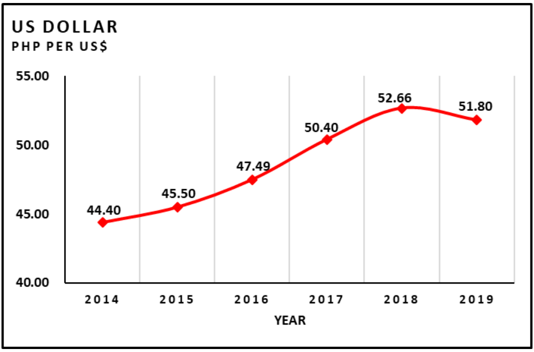
COUNTRY	CURRENCY	Foreign Currency in PHP	PHP in Foreign Currency	US$ in Foreign Currency
Australia*	dollar	34.38	0.03	1.48
Bahrain*	dinar	134.75	0.01	0.38
Brunei*	dollar	37.07	0.03	1.37
Canada*	dollar	38.25	0.03	1.33
China*	yuan	7.22	0.14	7.03
Denmark+	kroner	7.49	0.13	6.78
European Currency Unit*	euro	55.96	0.02	0.91
Hong Kong*	dollar	6.49	0.15	7.83
India+	rupee	0.71	1.41	71.79
Indonesia*	rupiah	0.004	277.37	14,108.10
Japan*	yen	0.46	2.15	109.48
Malaysia+	ringgit	12.18	0.08	4.18
New Zealand+	dollar	32.60	0.03	1.56
Norway	kroner	5.54	0.18	9.22

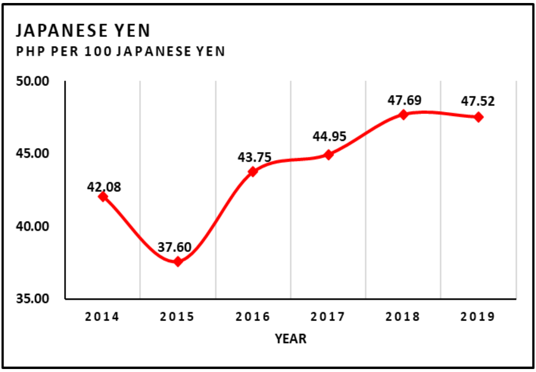
Notes:
* Convertible currencies with BSP
\+ Non convertible currencies with BSP

COUNTRY	CURRENCY	Foreign Currency in PHP	PHP in Foreign Currency	US$ in Foreign Currency
Pakistan+	rupee	0.33	3.05	155.38
Saudi Arabia*	rial	13.55	0.07	3.75
Singapore*	dollar	37.20	0.03	1.37
South Africa+	rand	3.45	0.29	14.64
South Korea*	won	0.04	23.23	1,181.50
Sweden+	kroner	5.32	0.19	9.57
Switzerland*	franc	50.85	0.02	1.00
Taiwan+	NT dollar	1.67	0.60	30.53
Thailand*	baht	1.68	0.59	30.23
United Arab Emirates (UAE)*	dirham	13.83	0.07	3.67
United Kingdom*	pound	65.58	0.02	0.77
United States of America*	dollar	50.80	0.02	1.00

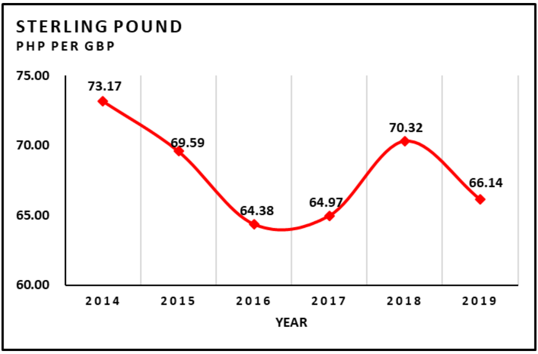
Source: BSP Reference Rate
XE Currency Converter

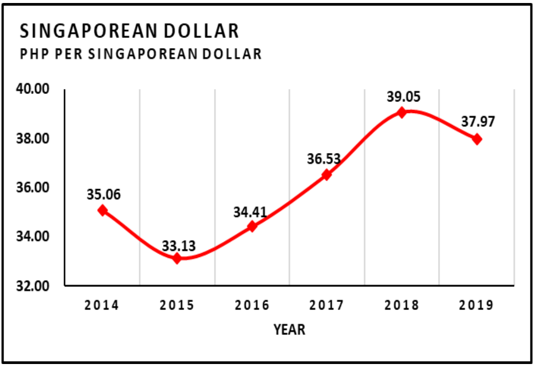
CURRENCY CHARTS





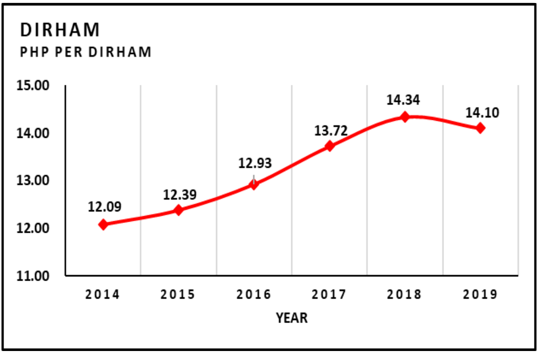
Note: Yearly Average Rate

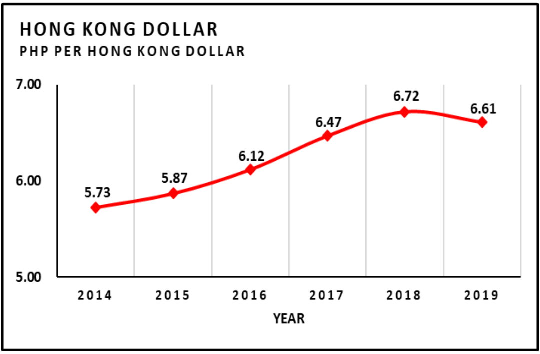

STERLING POUND
PHP PER GBP
75.00
70.00
65.00
60.00
73.17
69.59
64.38
64.97
70.32
66.14
2014
2015
2016
2017
2018
2019
YEAR


SINGAPOREAN DOLLAR
PHP PER SINGAPOREAN DOLLAR
40.00
38.00
36.00
34.00
32.00
35.06
33.13
34.41
36.53
39.05
37.97
2014
2015
2016
2017
2018
2019
YEAR

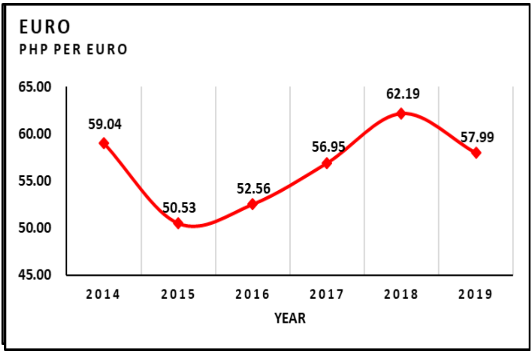
(Cont'd)

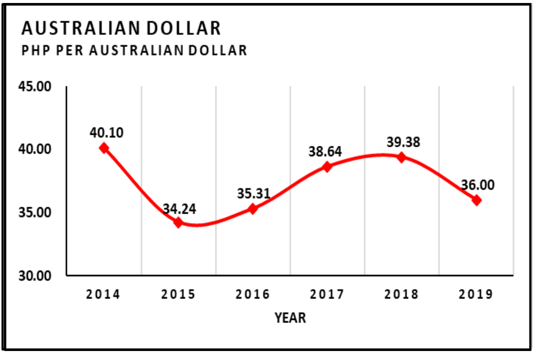
CURRENCY CHARTS





Note: Yearly Average Rate


EURO
PHP PER EURO
65.00
60.00
55.00
50.00
45.00
59.04
50.53
52.56
56.95
62.19
57.99
2014
2015
2016
2017
2018
2019
YEAR


AUSTRALIAN DOLLAR
PHP PER AUSTRALIAN DOLLAR
45.00
40.00
35.00
30.00
40.10
34.24
35.31
38.64
39.38
36.00
2014
2015
2016
2017
2018
2019
YEAR

(Cont'd)

PRIME RATES

Approximate rates prevailing in 4th Quarter 2019

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

China** = 5-year Benchmark Lending Rate

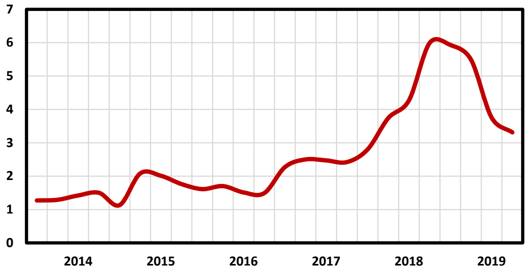
Malaysia^^^ = Indicative Effective Lending Rate

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

Vietnam ## = Min and in VND per year

MANILA REFERENCE RATE

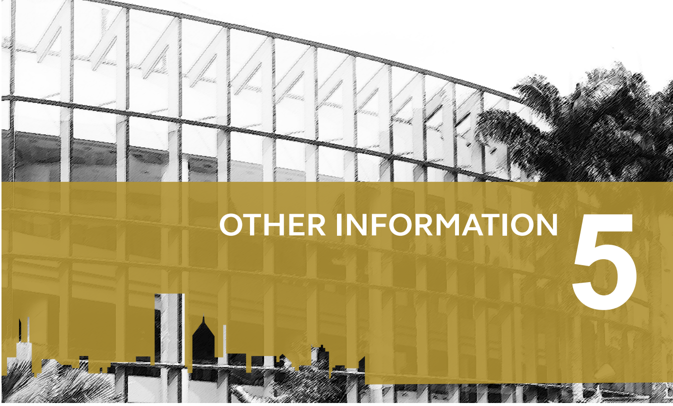
Approximate rates prevailing in 4th Quarter 2019



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

Note: Based on all maturities.



OTHER INFORMATION 5

PHILIPPINE MAP

PUBLIC HOLIDAYS

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

** Regular Holidays*
 # Special Non-Working Holidays

PUBLIC HOLIDAYS

	2020
CHINA	
New Year's Day	01 Jan
Chinese New Year$	24 Jan
Chinese New Year$	25 Jan
	31 Jan
Women's Day*	08 Mar@
Ching Ming Festival	05 Apr
	06 Apr
	07 Apr
Labour Day	01 May
Tue Ng / Dragon Boat Festival	25 Jun
Mid-Autumn Festival	13 Sep
National Day#	01 Oct
	07 Oct
Chung Yeung Festival	25 Oct@

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

	2020
HONG KONG	
New Year's Day	01 Jan
Lunar New Year (Day 1)	25 Jan
Lunar New Year (Day 2)	27 Jan
Lunar New Year (Day 3)	28 Jan*
Ching Ming Festival	04 Apr
Good Friday	10 Apr
Holy Saturday	11 Apr
Easter Monday	13 Apr
Birthday of the Buddha Holiday*	30 Apr
Labour Day	01 May
Tuen Ng Festival	25 Jun
HKSAR Establishment Day	01 Jul
National Day	01 Oct
The day Following Chinese Mid-Autumn Festival	02 Oct
Chung Yeung Festival	26 Oct*
Christmas Day	25 Dec
The 1st weekday after Christmas Day	26 Dec

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

(Cont'd)

PUBLIC HOLIDAYS

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

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

@ As the Birthday of the Buddha in 2020 falls on a Sunday, the day following it is designated as a general holiday in substitution

	2020
INDIA	
New Year's Day	1 Jan
Chandrama Ugadi	25 Mar
May day	1 May
Ramzan	25 May
Ganesh Chaturthi	21 Aug
Gandhi Jayanti	2 Oct
Vijay Dashmi	26 Oct
Diwali	16 Nov
Christmas Day	25 Dec

(Cont'd)

PUBLIC HOLIDAYS

	2020
MALAYSIA	
New Year's Day **	01 Jan
Chinese New Year	25 Jan
	26 Jan
Labour Day	01 May
Wesak Day	07 May
Hari Raya Aidilfitri*	24 May
	25 May
King/Agong's Birthday	6 Jun
Hari Raya Qurban*	31 Jul
Awal Muharam (Islamic New Year)	20 Aug
National Day	31 Aug
Malaysia Day	16 Sep
Prophet Muhammad's Birthday	29 Oct
Deepavali*	14 Nov
Christmas Day	25 Dec

* *Subject to changes*
** *Except Johor, Kelantan, Kedah, Perlis & Terengganu*

	2020
SINGAPORE	
New Year's Day	1 Jan
Chinese New Year	25 Jan
	26 Jan#
Good Friday	10 Apr
Labour Day	1 May
Vesak Day	7 May
Hari Raya Puasa	24 May#
National Day	31 Jul
Hari Raya Haji	9 Aug#
Deepavali*	14 Nov
Christmas Day	25 Dec

The following Monday will be a public holiday.

VIETNAM	
New Year's Day	01 Jan
Lunar New Year	24 Jan
	25 Jan
	26 Jan
	27 Jan
	28 Jan#
	29 Jan#
Hung Vuong King Celebration	2 Apr
Liberation Day of Saigon	30 Apr
International Labour Day	01 May
National Day	02 Sep
Christmas Day	24 Dec
	25 Dec

Substitute

(Cont'd)

PUBLIC HOLIDAYS

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

[1] - As Makha Bucha Day falls on Saturday (8 Feb), Monday is designated as a general holiday in substitution

[2] - As Asarnha Bucha Day falls on Sunday (5 July); Monday is designated as a general holidays in substitution

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

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* ; *www.worldtimezone.com*
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

* Allowance should be made for seasonal time variations

CONVERSION FACTORS

UNIT			
LENGTH			
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
AREA			
10,000 m^2	= 1 ha	9 ft^2	= 1 yd^2
100 ha	= 1 km^2	4,840 yd^2	= 1 acre
640 acre	= 1 $mile^2$	640 acre	= 1 $mile^2$
VOLUME			
1,000 ml	= 1 L	0.83 gal. (UK)	= 1 gal. (US)
1,000 L	= 1 m^3	8 pt. (US)	= 1 gal.(US)
1,000 cm^3	= 1 L	4 qt. (US)	= 1 gal. (US)
MASS / FORCE			
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		
POWER			
1 w	= 1 kw	550 ft-lb/sec	= 1hp
1 w	= 1VA x pf*		
PRESSURE			
1 Pa	= 1 N/m^2	0.068 atm	= 1 psi
1,000 Pa	= 1 KPa	14.5 psi	= 1 bar
1 Mpa	= 1 N/mm^2	0.491 psi	= 1 in. Hg
0.01 kg/cm2	= 1 Kpa		
TEMPERATURE			
COOLING LOAD		3,024 kcal/hr	= 1TR
12 BTU/hr	= 1TR	1.5 hp	= 1TR

Refer to www.online-unit-converter.com , www.dimensionconverter.com for further information.

CONVERSION FACTORS

TO IMPERIAL (APPROX)	TO METRIC (APPROX)
1 in = 25.400 mm 1 ft = 30.480 cm 1 yd = 0.914 m 1 mile = 1.609 km	1 cm = 0.394 in 1 m = 3.281 ft 1 m = 1.094 yd 1 km = 0.621 mile
1 ft^2 = 0.093 m^2 1 yd^2 = 0.836 m^2 1 acre = 0.405 ha 1 $mile^2$ = 2.590 km^2	1 m^2 = 10.764 ft^2 1 m^2 = 1.196 yd^2 1 ha = 2.471 acres 1 km^2 = 0.386 $mile^2$
(UK) 1 pt = 0.568 l (US) 1 pt = 0.473 l (UK) 1 gal = 4.546 l (US) 1 gal = 3.785 l	(UK) 1 l = 1.760 pt (US) 1 l = 2.113 pt (UK) 1 l = 0.220 gal (US) 1 l = 0.264 gal
1 oz = 28.350 g 1 lb = 0.454 kg 1 ton = 1.016 tonne 1 catty = 0.605 kg	1 gram = 0.035 oz 1 kg = 2.205 lb 1 tonne = 0.984 ton
1 hp = 0.746 kw	1 kw = 1.340 hp
(^{0}F - 32) x 5/9	(^{0}C x 9/5) + 32

ARCADIS PROFESSIONAL SERVICES COST 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

ARCADIS PROFESSIONAL SERVICES COST 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 preparaton 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 measurer) 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 of 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 CO2 (GtCO2) 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.

bsi.

QUALITY SYSTEM ISO 9001:2015 QUALITY MANAGEMENT SYSTEM


bsi.

By Royal Charter

Certificate of Registration

QUALITY MANAGEMENT SYSTEM

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And BSI location is: 0047647281-044

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For and on behalf of BSI:

Chris Cheung, Head of Compliance & Risk - Asia Pacific

Original Registration Date: **2018-04-13** Expiry Date: 2021-04-12

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This certificate remains the property of BSI and is bound by the conditions of the contract.

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

Arcadis Philippines Inc. operates a Quality Management System which complies with the requirements of ISO 9001:2015 for the provision of Quantity Surveying Services, Environmental Sustainability Services and Development Management Services.
The current certification is valid until 12 April 2021.

QUALITY SYSTEM ISO 14001:2015 ENVIRONMENTAL MANAGEMENT SYSTEM


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

ARCADIS ASIA SERVICES

BUSINESS ADVISORY

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

COST MANAGEMENT

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

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

DESIGN & ENGINEERING

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

ENVIRONMENT

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

PROJECT & PROGRAMME MANAGEMENT

Organizing the creation of the world's largest, most complex and iconic programs of work in the built and natural environment today is no easy task. Budgets, supply chains, health and safety, 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.

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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