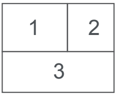
ARCADIS

Design & Consultancy
for natural and
built assets

Construction Cost Handbook

PHILIPPINES 2019

Arcadis Philippines Inc.



Handbook Cover Photos:

1. BenPres Redevelopment - (top left)
2. One Vertis Plaza - (top right)
3. Uniqlo Flagship Store Manila - Glorietta (bottom)

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 2018**.

Arcadis Philippines Inc. would like to acknowledge the assistance of Jones Lang LaSalle in providing additional data and information for this publication.

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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	BANGKOK
DOMESTIC					
Apartments, high rise, average standard	937 - 1,135	3,060 - 3,570	1,305 - 1,485	345 - 580#	703 - 871
Apartments, high rise, high end	1,265 - 2,107	4,020 - 4,690	2,030 - 3,045	710 - 1,120	978 - 1,207
Terraced houses, average standard	762 - 917	4,130 - 4,860	1,705 - 1,920	220 - 345^	458 - 565
Detached houses, high end	1,631 - 2,724	6,140 up	2,175 - 2,900	740 - 980	794 - 962
OFFICE / COMMERCIAL					
Medium/high rise offices, average standard	933 - 1,076	2,990 - 3,500	1,705 - 1,920#	575 - 745*	642 - 794
High rise offices, prestige quality	1,264 - 1,390	3,630 - 4,260	1,920 - 2,100#	865 - 1,255*	871 - 1,176
Out-of-town shopping centre, average standard	762 - 935	2,970 - 3,540	1,920 - 2,030	550 - 715	626 - 810
Retail malls, high end	1,093 - 1,508	3,950 - 4,720	2,030 - 2,245	680 - 1,000	840 - 886
HOTELS					
Budget hotels - 3-star, mid market	1,195 - 1,312	3,840 - 4,160	2,140 - 2,355	1,020- 1,395	1,146 - 1,268
Business hotels - 4/5-star	1,347 - 1,607	4,020 - 4,720	2,755 - 3,115	1,720- 2,175	1,466 - 1,680
Luxury hotels - 5-star	1,851 - 2,524	4,720 - 5,460	2,755 - 3,115	1,940- 2,435	1,711 - 1,986

INDUSTRIAL					
Industrial units, shell only (Conventional single storey framed units)	485 - 538	N/A	725 - 930	320 - 430	489 - 611
Owner operated factories, low rise, light weight industry	685 - 789	2,330 - 2,950	N/A	430 - 520	N/A
OTHERS					
Underground/basement car parks (<3 levels)	494 - 610	3,200 - 3,840	930 - 1,255	310 - 530	550 - 733
Multi storey car parks, above ground (<4 levels)	475 - 661	1,920 - 2,280	640 - 930^	220 - 345	183 - 299
Schools (primary and secondary)	701 - 952	2,520 - 2,710	N/A	250 - 305+	N/A
Students' residences	742 - 937	2,930 - 3,310	1,560 - 1,705	295 - 360^^	N/A
Sports clubs, multi purpose sports/leisure centres (dry sports)	1,186 - 1,699	3,820 - 4,450	1,955 - 2,100	595 - 730	N/A
General hospitals - public sector	1,287 - 1,523	4,950 - 5,580	2,755 - 2,900	855 - 1,155	N/A
Exchange Rate Used : US$1 =	PHP 52.88	HK$ 7.82	S$ 1.38	RM 4.18	BAHT 32.73

The above cost are at 4th Quarter 2018 Levels, inclusive of preliminaries but exclusive of contingencies.

Manila Rates 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

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			
	MACAU =	JAKARTA +	INDIA #	HO CHI MINH ~
DOMESTIC				
Apartments, high rise, average standard	2,279 - 2,788	722 - 817	576 - 660	645 - 800
Apartments, high rise, high end	3,183 - 4,864	996 - 1,124	869 - 1,047	820 - 940
Terraced houses, average standard	3,884 - 4,635	383 - 498	398 - 419	435 - 510
Detached houses, high end	4,737 - 6,163	1,042 - 1,165	525 - 550	495 - 605
OFFICE / COMMERCIAL				
Medium/high rise offices, average standard	2,623 - 3,387	712 - 789	435 - 471	755 - 875
High rise offices, prestige quality	3,387 - 3,705	1,050 - 1,174	544 - 576	870 - 1,185
Out-of-town shopping centre, average standard	2,470 - 3,705	611 - 675	424 - 461	N/A
Retail malls, high end	3,884 - 4,686	675 - 730	592 - 639	705 - 920
HOTELS				
Budget hotels - 3-star, mid market	3,451 - 3,909	1,237 - 1,461	817 - 905	1,400 - 1,710
Business hotels - 4/5-star	4,686 - 5,602	1,691 - 1,827	1,272 - 1,508	N/A
Luxury hotels - 5-star	5,602 - 6,621	1,801 - 2,030	1,607 - 1,759	1,765 - 2,120

INDUSTRIAL				
Industrial units, shell only (Conventional single storey framed units)	N/A	327 - 356	340 - 398	310 - 390
Owner operated factories, low rise, light weight industry	N/A	355 - 392	361 - 424	350 - 460
OTHERS				
Underground/basement car parks (<3 levels)	2,050 - 3,005	505 - 619	288 - 309	640 - 765
Multi storey car parks, above ground (<4 levels)	1,133 - 1,490	327 - 356	230 - 252	410 - 450
Schools (primary and secondary)	2,266 - 2,623	N/A	285 - 324	540 - 590
Students' residences	1,795 - 2,088	N/A	309 - 340	540 - 695
Sports clubs, multi purpose sports/leisure centres (dry sports)	N/A	1,095- 1,640	602 - 628	800 - 855
General hospitals - public sector	N/A	N/A	660 - 723	N/A
Exchange Rate Used : US$1 =	MOP 8.07	IDR 15,180	INR 71.9	VND 22,600

The above costs are 4th Quarter 2018 levels. inclusive of preliminaries unless otherwise stated.

Macau — Rates are exclusive of contingencies and any management contract fee
Jakarta — Rates are nett of VAT
India — Rates are based on projects in Bangalore and are nett of GST. Mumbai costs are generally 8% higher.
Ho Chi Minh — Rates are nett of 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 =	SHENZEN / GUANGZHOU =	CHONGQING / CHENGDU
DOMESTIC				
Apartments, high rise, average standard	668 - 740	613 - 673	534 - 590	552 - 661
Apartments, high rise, high end	1,554 - 1,697	1,484 - 1,690	874 - 958	907 - 1,149
Terraced houses, average standard	446 - 477	447 - 522	405 - 446	445 - 541
Detached houses, high end	666 - 740	673 - 749	553 - 609	591 - 682
OFFICE / COMMERCIAL				
Medium/high rise offices, average standard	868 - 1,156	857 - 1,154	777 - 860	882 - 1,025
High rise offices, prestige quality	1,158 - 1,445	1,154 - 1,895	1,132 - 1,361	1,122 - 1,520
Out-of-town shopping centre, average standard	N/A	653 - 873	749 - 822	706 - 912
Retail malls, high end	1,228 - 1,585	1,181 - 1,626	1,088 - 1,521	1,067 - 1,505
HOTELS				
Budget hotels - 3-star, mid market	952 - 1,169	966 - 1,191	985 - 1,084	958 - 1,189
Business hotels - 4/5-star	1,556 - 2,120	1,615 - 2,132	1,592 - 2,273	1,747 - 2,188
Luxury hotels - 5-star	2,117 - 2,538	2,057 - 2,646	2,165 - 2,386	2,159 - 2,592

INDUSTRIAL				
Industrial units, shell only (Conventional single storey framed units)	280 - 342	270 - 329	497 - 547	426 - 542
Owner operated factories, low rise, light weight industry	432 - 540	522 - 598	N/A	N/A
OTHERS				
Underground/basement car parks (<3 levels)	742 - 1,033	746 - 820	513 - 820	413 - 589
Multi storey car parks, above ground (<4 levels)	382 - 532	449 - 454	367 - 404	324 - 405
Schools (primary and secondary)	528 - 676	520 - 671	407 - 448	438 - 487
Students' residences	377 - 527	368 - 520	264 - 297	N/A
Sports clubs, multi purpose sports/leisure centres (dry sports)	955 - 1,172	890 - 897	754 - 832	N/A
General hospitals - public sector	1,418 - 1,839	1,170 - 1,465	N/A	N/A
Exchange Rate Used : US$1 =	RMB 6.94	RMB 6.94	RMB 6.94	RMB 6.94

The above costs are 4th Quarter 2018 levels. inclusive of preliminaries unless otherwise stated.

Beijing, Shanghai, Guangzhou/Shenzhen, Chongqing/Chengdu

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

M & E COSTS FOR SELECTED ASIAN CITIES

M&E COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	MANILA=	HONG KONG	SINGAPORE+	KUALA LUMPUR	BANGKOK#
	(PHP/m²)	(HK$/m²)	(S$/m²)	(RM/m²)	(BAHT/m²)
MECHANICAL SERVICES					
Offices	4,000 - 5,930	1,900 -2,700	153 - 249	320 - 490	4,400 - 4,800
Industrial *	800 - 1,500	160 - 260	34 - 117	85 - 190	1,550 - 1,600
Hotels	3,500 - 9,670	2,100 -2,650	129 - 278	300 - 590	4,600 - 5,100
Shopping Centres	2,890 - 6,840	2,200 -2,750	147 - 246	300 - 475	4,600 - 4,800
Apartment	1,360 - 4,430	850 -2,000up	90 - 170	120 - 210	4,300 - 4,500
ELECTRICAL SERVICES					
Offices	3,700 - 7,000	1,750 -2,450	158 - 258	290 - 460	3,400 - 3,800
Industrial **	2,000 - 3,500	620 - 860	55 - 136	145 - 190	1,950 - 2,200
Hotels	4,700 -12,000	1,900 -2,600	181 - 356	295 - 550	3,800 - 4,500
Shopping Centres	3,600 - 6,000	1,800 -2,450	160 - 304	295 - 460	2,800 - 3,200
Apartment	3,600 - 6,800	1,100 -2,100up	97 - 213	105 - 210	2,800 - 3,350
HYDRAULIC SERVICES					
Offices	1,230 - 2,200	700 - 900	26 - 55	35 - 65	780 - 900
Industrial	800 - 1,300	500 - 700	18 - 36	40 - 50	750 - 790
Hotels	2,250 - 6,820	2,000 -3,000	91 - 172	175 - 270	1,400 - 1,650

Shopping Centres	1,220 - 1,600	700 - 900	46 - 80	30 - 35	790 - 950
Apartment	2,250 - 3,600	1,400 -2,200	72 - 146	50 - 100	1,200 -1,400
FIRE SERVICES					
Offices	950 - 1,560	550 - 700	33 - 56	60 - 80	780 - 850
Industrial	800 - 2,000	400 - 500	23 - 51	45 - 65	730 - 750
Hotels	1,100 - 2,030	600 - 850	28 - 57	65 - 90	780 - 890
Shopping Centres	1,090 - 1,730	550 - 700	37 - 56	55 - 80	780 - 820
Apartment	900 - 1,300	100 - 600	25 - 43	15 - 30	720 - 850
LIFTS / ESCALATORS					
Offices	1,600 - 4,620	700 -1,200	63 - 162	125 - 350	1,100 -1,350
Industrial	0 - 400	550 - 750	41 - 104	55 - 180	N/A
Hotels	1,800 - 3,400	550 - 850	49 - 108	100 - 285	1,100 -1,400
Shopping Centres	1,600 - 2,680	850 -1,000	56 - 90	95 - 120	250 - 450
Apartment	850 - 3,440	450 - 850	41 - 100	65 - 110	500 - 580

Costs are at 4th Quarter 2018 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
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 (Cont'd)

BUILDING TYPE	MACAU	JAKARTA =	INDIA +	HO CHI MINH
	MOP/m²	(IDR'000/m²)	INR/m²	(VND'000/m²)
MECHANICAL SERVICES				
Offices	N/A	1,028 - 1,183	4,800 - 6,805	2,036 - 2,902
Industrial *	N/A	466 - 744	2,210 - 3,925	N/A
Hotels	2,640 - 3,050	1,022 - 1,210	5,880 - 6,420	N/A
Shopping Centres	2,400 - 3,000	905 - 1,087	4,585 - 6,005	N/A
Apartment	900 - 1,200	915 - 1,001	2,620 - 3,245	1,537 - 2,106
ELECTRICAL SERVICES				
Offices	N/A	830 - 1,060	4,250 - 5,840	2,275 - 2,723
Industrial **	N/A	589 - 833	2,500 - 4,150	N/A
Hotels	2,640 - 3,150	835 - 937	4,710 - 6,425	N/A
Shopping Centres	2,640 - 3,000	723 - 910	4,050 - 5,420	N/A
Apartment	1,020 - 1,320	878 - 1,049	2,040 - 2,805	2,006 - 2,534
HYDRAULIC SERVICES				
Offices	N/A	209 - 294	740 - 1,130	332 - 621
Industrial	N/A	139 - 214	510 - 890	N/A
Hotels	1,830 - 2,240	835 - 1,054	3,868 - 5,825	N/A

Shopping Centres	610 - 810	198 - 305	1,100 - 1,990	N/A
Apartment	1,520 - 2,030	889 - 1,124	1,745 - 2,410	647 - 752
FIRE SERVICES				
Offices	N/A	284 - 375	1,185 - 1,545	704 - 1,167
Industrial	N/A	150 - 214	540 - 745	N/A
Hotels	910 - 1,120	284 - 332	1,375 - 1,760	N/A
Shopping Centres	610 - 810	278 - 326	1,130 - 1,310	N/A
Apartment	250 - 300	294 - 343	630 - 750	483 - 606
LIFTS / ESCALATORS				
Offices	N/A	444 - 1,065	985 - 1,250	670 - 1,279
Industrial	N/A	N/A	640 - 825	N/A
Hotels	610 - 810	434 - 707	1,430 - 2,085	N/A
Shopping Centres	460 - 710	326 - 878	1,675 - 2,145	1,364 - 1,931
Apartment	460 - 610	434 - 798	890 - 1,150	761 - 1,101

Costs are at 4th Quarter 2018 levels, exclusive of contingencies unless otherwise stated.

Note:

* Generally without A/C.

** Excludes special power supply.

Macau: -nil-

Jakarta: All rates are nett of VAT. Rates for Electrical Services are excluding genset. Rates for Hydraulic Services are excluding STP. Rates for Mechanical Services refers to ACMV Rates only

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

(Cont'd)

M&E COSTS FOR SELECTED ASIAN CITIES

M&E COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	SHANG HAI (RMB/m²)	BEIJING (RMB/m²)	SHENZEN / GUANGZHOU (RMB/m²)	CHONGQING / CHENGDU (RMB/m²)
MECHANICAL SERVICES				
Offices	790 - 1,005	775 - 1,071	775 - 1,070	730 - 990
Industrial *	176 - 295	170 - 280	155 - 285	140 - 230
Hotels	1,010 - 1,316	950 - 1,224	1,080 - 1,350	930 - 1,280
Shopping Centres	1,070 - 1,125	806 - 970	715 - 910	890 - 1,010
Apartment	320 - 423	143 - 459	152 - 410	150 - 300
ELECTRICAL SERVICES				
Offices	620 - 700	470 - 717	540 - 795	450 - 660
Industrial **	311 - 440	326 - 459	320 - 459	260 - 360
Hotels	677 - 864	719 - 962	715 - 1,020	580 - 830
Shopping Centres	540 - 677	490 - 690	500 - 690	510 - 660
Apartment	262 - 383	258 - 406	285 - 500	230 - 340
HYDRAULIC SERVICES				
Offices	112 - 166	97 - 143	128 - 184	85 - 120
Industrial	89 - 131	97 - 143	89 - 124	85 - 120
Hotels	375 - 498	377 - 490	390 - 500	330 - 450

Shopping Centres	140 - 188	143 - 204	114 - 168	100 - 150
Apartment	171 - 231	173 - 234	150 - 280	100 - 180
FIRE SERVICES				
Offices	232 - 325	184 - 270	230 - 350	240 - 290
Industrial	160 - 268	153 - 230	143 - 272	130 - 230
Hotels	294 - 397	224 - 383	285 - 425	250 - 350
Shopping Centres	263 - 391	224 - 383	248 - 383	250 - 370
Apartment	56 - 105	71 - 138	72 - 152	60 - 110
LIFTS / ESCALATORS				
Offices	288 - 567	294 - 577	295 - 517	300 - 550
Industrial	139 - 402	145 - 400	150 - 440	150 - 350
Hotels	226 - 510	232 - 520	250 - 480	250 - 430
Shopping Centres	335 - 510	327 - 520	325 - 470	290 - 440
Apartment	170 - 300	175 - 289	130 - 500	140 - 240

Costs are at 4th Quarter 2018 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	39,790 - 46,650	8,910 - 13,230	48,700 - 59,880
Apartments, high rise, high end	53,526 - 92,080	12,180 - 19,070	65,706 - 111,150
Terraced houses, average standard	36,813 - 43,581	2,760 - 4,810	39,573 - 48,391
Detached houses, high end	76,027 - 127,806	8,700 - 15,880	84,727 - 143,686
OFFICE / COMMERCIAL			
Medium/high rise offices, average standard	36,978 - 41,196	11,480 - 15,550	48,458 - 56,746
High rise offices, prestige quality	50,940 - 53,011	14,750 - 20,310	65,690 - 73,321
Out-of-town shopping centre, average standard	27,110 - 34,440	9,480 - 14,870	36,590 - 49,310
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 - 62,389	14,750 - 22,400	69,975 - 84,789
Luxury hotels - 5-star	78,554 - 102,027	17,630 - 31,120	96,184 - 133,147
INDUSTRIAL			
Industrial units, shell only (conventional single story framed units	20,692 - 20,821	4,400 - 7,700	25,221 - 28,392
Owner operated factories, low rise, light weight industry	31,182 - 32,904	4,400 - 8,700	35,582 - 41,604
OTHERS			
Underground/basement car parks (<3 levels)	20,789 - 23,208	4,860 - 8,980	25,649 - 32,188
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	52,183 - 56,427	14,690 - 23,930	66,873 - 80,357

Costs are at 4th Quarter 2018 levels. Manila building costs are expected to increase by approxomately 0.5% per month (compounded) during 2018.

M&E COSTS FOR PHILIPPINES

M&E COSTS FOR PHILIPPINES

BUILDING TYPE	PESO/m²					
	TOTAL SERVICES	ELECTRICAL SERVICES	MECHANICAL SERVICES	FIRE SERVICES	LIFTS / ESCALATOR	PLUMBING SERVICES
DOMESTIC						
Apartments, high rise, average standard	8,910 - 13,230	3,600 - 4,300	1,360 - 2,530	850 - 1,100	850 - 2,300	2,250 - 3,000
Apartments, high rise, high end	12,180 - 19,070	3,900 - 6,300	2,530 - 4,430	950 - 1,300	2,200 - 3,440	2,600 - 3,600
Terraced houses, average standard	2,760 - 4,810	1,400 - 1,800	630 - 1,400	- -	- -	730 - 1,610
Detached houses, high end	12,180 - 15,880	3,000 - 5,800	2,910 - 4,470	- -	- -	2,790 - 5,610
OFFICE / COMMERCIAL						
Medium/high rise offices, average standard	11,480 - 15,550	3,500 - 4,700	4,000 - 5,000	950 - 1,200	1,800 - 3,000	1,230 - 1,650
High rise offices, prestige quality	14,750 - 20,310	4,800 - 6,000	4,500 - 5,930	1,050 - 1,560	2,900 - 4,620	1,500 - 2,200
Out-of-town shopping centre, average standard	9,480 - 14,870	3,060 - 5,100	2,890 - 5,100	1,090 - 1,420	1,220 - 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 - 22,400	5,200 - 7,500	4,250 - 6,100	1,200 - 1,500	1,800 - 2,900	2,300 - 4,400
Luxury hotels - 5-star	17,630 - 31,120	5,500 - 9,200	4,950 -9,670	1,480 - 2,030	2,200 - 3,400	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 - 8,700	2,000 - 3,500	800 - 1,500	800 - 2,000	0 - 400	800 - 1,300
OTHERS						
Underground/basement car parks (<3 levels)	4,860 - 8,980	2,000 - 3,500	900 - 1,950	900 - 1,270	260 - 570	800 - 1,690
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	1,1,40 - 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	14,690 - 23,930	5,000 - 8,000	4,700 - 7,300	1,240 - 2,100	1,250 - 2,800	2,500 - 3,730

Costs are at 4th Quarter 2018 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 figures shown.

The costs per square metre 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. The Manila US$/$m^2$ considers in the CFA the parking requirements for each type of building.

All costs are in US$/m2 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, 50m² - 150m² per flat, facade 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 facade 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 m² per level. Average standard offices and shopping centres have bare finish and exclude A/C ducting and light fittings to tenants areas. Prestige offices have curtain wall elevations, stone finished lobbies.

INDUSTRIAL

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

HOTELS

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

OTHERS

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

MAJOR RATES FOR SELECTED ASIAN CITIES

DESCRIPTION	UNIT	MANILA (PHP)	HONG KONG (HK$)	SINGAPORE (S$)	KUALA LUMPUR (RM)	BANGKOK (BAHT)
1. Excavating basement ≤ 2.00m deep	m^3	270	200	20	15 - 25	120 - 140
2. Excavating for footings ≤ 1.50m deep	m^3	500	180	20	15 - 25	140 - 180
3. Remove excavated materials off site	m^3	350	300	15 - 20	20 - 30	120 - 150
4. Hardcore bed blinded with fine materials	m^3	1800	950	50	72 - 95	650 - 750
5. Mass concrete grade 15	m^3	3,400	1,100	175 - 185	240 - 315	2,300 - 2,500
6. Reinforced concrete grade 30	m^3	4,800	1,200	115 - 120	260 - 320	2,600 - 2,800
7. Mild steel rod reinforcement	kg	54	9.7	1.25 - 1.35	3.40 - 3.80	26 - 29
8. High tensile rod reinforcement	kg	55	9.7	1.25 - 1.35	3.40 - 3.80	26 - 28
9. Sawn formwork to soffits of suspended slabs	m^2	1,000	410	40	38 - 45	420 - 480
10. Sawn formwork to columns and walls	m^2	950	410	40	38 - 45	420 - 480
11. 112.5mm thick brick walls	m^2	N/A	400	35 - 40	42 - 50	650 - 750
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m^2	1,400	1000	43	65 - 70	1,200

13. Aluminium casement windows, single glazed	m^2	11,500	3,800	290	380 - 600	7,000
14. Structural steelwork - beams, stanchions and the like	kg	160	36	4 - 4.50	7.50 - 9.50	60 - 75
15. Steelwork - angles, channels, flats and the like	kg	160	42	4 - 4.50	7.50 - 9.50	60 - 75
16. 25mm cement and sand (1:3) paving	m^2	650	160	21	17 - 25	200 - 240
17. 20mm cement and sand (1:4) plaster to walls	m^2	700	165	22	18 - 25	220 - 260
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	1,800	400	74	50 - 70	1,200
19. 12mm fibrous plasterboard ceiling lining	m^2	1,400	600	30	35 - 45	750 - 850
20. Two coats of emulsion paint to plastered surfaces	m^2	500	90	3.50 - 4	3.50 - 5	120 - 160
Average expected preliminaries	%	12-18	10 - 15	12 - 15	6 - 15	12 – 18

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
Bangkok: Rates are nett of VAT

(Cont'd)

MAJOR RATES FOR SELECTED ASIAN CITIES

DESCRIPTION	UNIT	MACAU	JAKARTA#	INDIA^Ĝ	HO CHI MINH#
		MOP	(IDR '000)	(INR)	(VND)
1. Excavating basement ≤ 2.00m deep	m^3	150	40	199	92,400
2. Excavating for footings ≤ 1.50m deep	m^3	180	75	225	92,400
3. Remove excavated materials off site	m^3	150	35	NA	84,700
4. Hardcore bed blinded with fine materials	m^3	1,200	650	4,620	280,900
5. Mass concrete grade 15	m^3	1,350	950	6,248	1,696,400
6. Reinforced concrete grade 30	m^3	1,250	1,135	7,822	1,865,650
7. Mild steel rod reinforcement	kg	9	12.5	70	19,764
8. High tensile rod reinforcement	kg	9	12.5	72	19,908
9. Sawn formwork to soffits of suspended slabs	m^2	280	200	708	215,000
10. Sawn formwork to columns and walls	m^2	280	195	761	245,000
11. 112.5mm thick brick walls	m^2	450	250	1,155	312,780
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m^2	N/A	300	1,785	401,110 - 597,600

13. Aluminium casement windows, single glazed	m^2	4,000	1,650	6,300	6,315,000
14. Structural steelwork - beams, stanchions and the like	kg	35	27	126	52,650
15. Steelwork - angles, channels, flats and the like	kg	40	27	126	52,650
16. 25mm cement and sand (1:3) paving	m^2	120	90	498	94,000
17. 20mm cement and sand (1:4) plaster to walls	m^2	150	100	409	144,000
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	450	200	1,785	674,180
19. 12mm fibrous plasterboard ceiling lining	m^2	650	215	1,417	234,000
20. Two coats of emulsion paint to plastered surfaces	m^2	200	30	252	88,900
Average expected preliminaries	%	10	8 - 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.

Macau: -nil-

Ho Chi Minh: Rates are nett of VAT

Jakarta: Rates are nett of VAT; Item 19 - 9mm gymsum board

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	SHANG HAI (RMB)	BEIJING (RMB)	SHENZEN / 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	26
3. Remove excavated materials off site	m^3	135	60	105	95
4. Hardcore bed blinded with fine materials	m^3	190	180	190	170
5. Mass concrete grade 15	m^3	540	530	540	420
6. Reinforced concrete grade 30	m^3	570	550	580	550
7. Mild steel rod reinforcement	kg	5.8	5.6	6	5.3
8. High tensile rod reinforcement	kg	5.8	5.6	6	5.3
9. Sawn formwork to soffits of suspended slabs	m^2	90	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	650
14. Structural steelwork - beams, stanchions and the like	kg	11	11	12.5	11
15. Steelwork - angles, channels, flats and the like	kg	9.5	9.5	11.5	11.1
16. 25mm cement and sand (1:3) paving	m^2	35	32	35	25
17. 20mm cement and sand (1:4) plaster to walls	m^2	35	32	30	35
18. Ceramic tiles bedded to floor screed (measured separately)	m^2	160	145	155	130
19. 12mm fibrous plasterboard ceiling lining	m^2	150	162	190	150
20. Two coats of emulsion paint to plastered surfaces	m^2	40	32	35	35
Average expected preliminaries	%	5 - 10	7 - 10	5 - 12	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

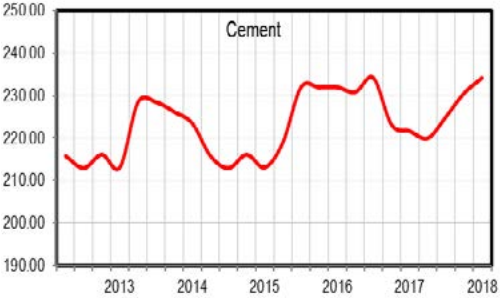
Guangzhou/Shenzhen: -nil-

Beijing,

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

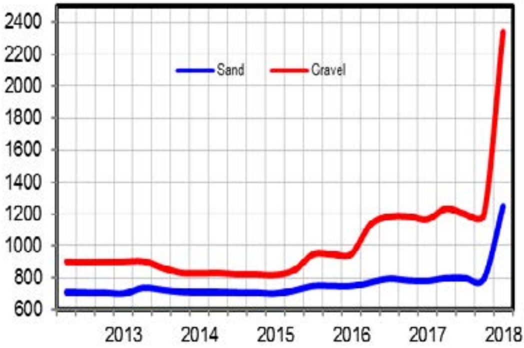
RETAIL PRICES OF BASIC CONSTRUCTION

Cement
Php / bag (40kg)



Year

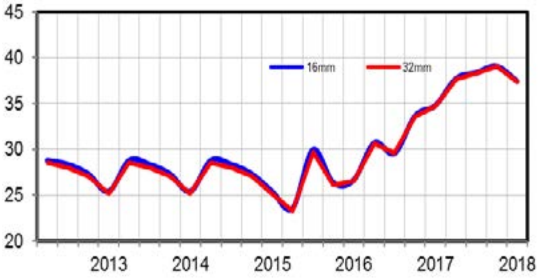
Aggregates
Php / m³



Year

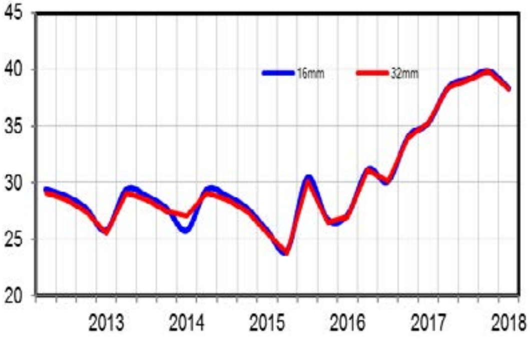
MATERIALS FOR PHILIPPINES

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



Year

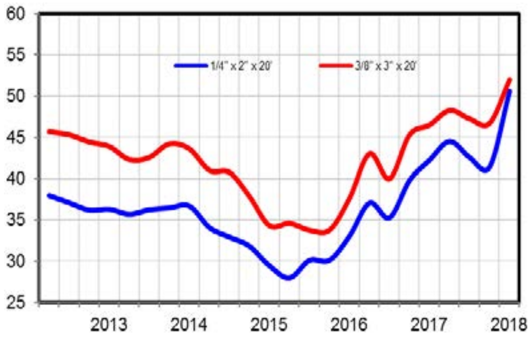
Reinforcing Bar
(High Yield Grade - Grade 60; 400 MPa)
Php / kg



Year

RETAIL PRICES OF BASIC CONSTRUCTION

Structural Steel (Angle Bar; A36)
Php / kg



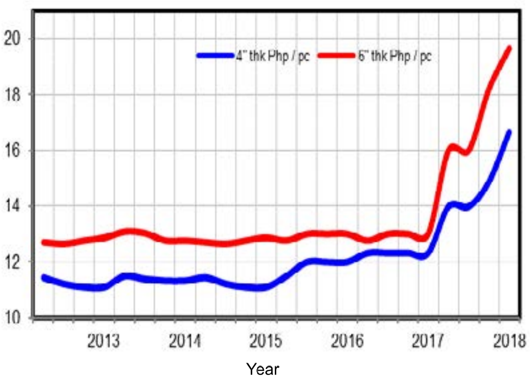
Year

Structural Steel (Wide Flange)
Php / kg

Year

MATERIALS FOR PHILIPPINES

Ordinary Concrete Hollow Blocks
Php / piece



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	1,400,000
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	2,400,000
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	12,000,000
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. 300m2 swimminpool 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	4,000,000 - 6,000,000
Covered court approximately 975m^2, including metal viewing seats, built-infurnitures, provision for T&B, etc*	per court	20,000,000 - 40,000,000

*includes provision for forward/rear fold ceiling mounted basketball goal.
2018 4Q Rates

DESCRIPTION	UNIT	PESO
PLAYGROUND EQUIPMENT		
Outdoor playground equipment comprising various activities and safety mat	per set	500,000 to 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 to 4,500,000

M & E MAJOR PLANT COSTS FOR THE PHILIPPINES

DESCRIPTION	UNIT	COST (Php)
1. Water cooled chiller; conventional bearing	per TR	18,000 - 36,000
2. Water cooled chiller; magnetic bearing	per TR	37,000 - 50,000
3. Air-cooled electric chillers	per TR	31,000 - 44,000
4. Cooling Towers; included draft	per GPM	2,800 - 5,000
5. Air Handling Units (AHU)	per TR	18,500 - 35,000
6. Packaged Water-Cooled units (PWCU)	per TR	23,000 - 34,000
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. Heat Pumps	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. Storage Water 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	550,000-700,000
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	650,000-760,000
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 2018.
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	20,000-24,000
4-star Hotel	26,000-35,000
5-star Hotel	38,000
Guest rooms :	
3-star Hotel	17,000-19,000
4-star Hotel	21,000-30,000
5-star Hotel	32,000-48,000
Notes :	
1.Includes furniture, floor, wall and ceiling, finishes, drapery, sanitary fittings and light fittings.	
2.Excludes partitioning, M & E works, building shell, chandelier, operational items and equipment (e.g. bed, cutlery, crockery, linen, television, refrigerator, etc.), opening, expenses, stage equipment and computer systems.	
COMMERCIAL	
Shopping centers	27,000-38,000
Notes :	
1.Mall/Public areas only; tenant area to be bare finish	
2.See notes 1,2,& 3 below	

NOTE:

1. Costs are at December 2018 Levels.
2. Costs include wall, floor, ceiling finishes, doors, FF&E M&E Works service reticulation, preliminaries. Forex US$1: 52.88
3. Costs exlude 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 *	27,500-38,500
Executive offices **	46,750-66,000
Banking lobby *** * Medium quality systems furniture ** High quality furniture and finishes *** Imported stone finishes; double volume spaces Note : See notes 1, 2 & 3 below	59,000-70,000
RESTAURANTS	
General dining restaurant	20,000-41,000
Fine dining restaurant 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.).	43,000

NOTE:

1. Costs are at December 2018 Levels.
2. Costs include wall, floor, ceiling finishes, doors, FF&E M&E Works service reticulation, preliminaries. Forex US$1:52.88
3. Costs exlude 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 *	54,000-92,000
Cinemas **	38,000-60,000
* Includes stage rigging and equipment, draperies, AV equipment projectors, screens, acoustics and seatings ** Includes screens, projection equipment, seats, finishes, ticketing booth	
AUDITORIUMS	43,000-70,000
BUSINESS CLUBS	54,000-76,000
BAR / BILLIARDS *	35,000-44,000
* Excluding kitchen equipment	

NOTE:

1. Costs are at December 2018 Levels.
2. Costs include wall, floor, ceiling finishes, doors, FF&E M&E Works service reticulation, preliminaries. Forex US$1: 52.88
3. Costs exlude operational equipment and supplies, structure, external enclosure, major M&E plant, financing and developers costs, professional and marketing fees.

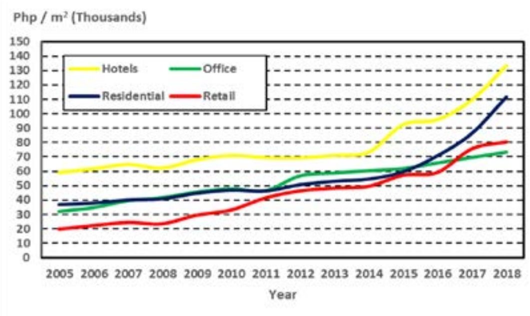
ARCADIS Design & Consultancy for natural and built assets

KITCHEN EQUIPMENT COSTS FOR PHILIPPINES

DESCRIPTION	COST (Php)
BUSINESS CLUB 500 - 900 m² floor area	22M - 35M
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

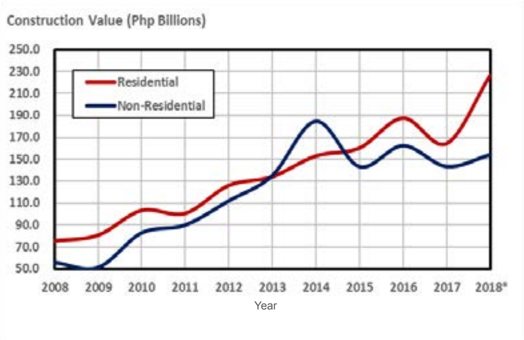
TRENDS IN CONSTRUCTION COSTS FOR PHILIPPINES



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

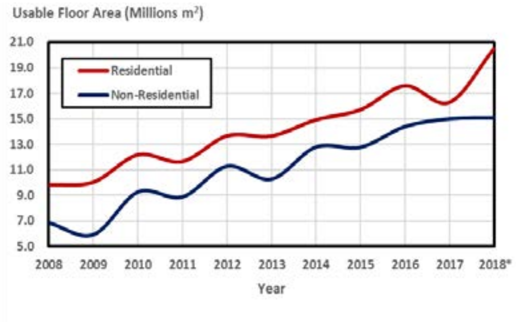
CONSTRUCTION VALUE



Year	Construction Value Php ('000)	
	Hotels	Office
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*	226,555,441	154,241,046

** 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*	20,479,943	15,123,697

** 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	2	3
General joinery	2	2	3	5
Raised floors	2	2	-	-
Suspended ceilings	2	2	3	3
Decorations (wall coverings)	-	-	2	-
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	4	3
Air-conditioning plant	2	2	3	6
Variable air-volume unit	1	1	3	6
Electrical package	6	3	-	-
Switchgear	2	2	-	10
Generators (600kW)	4	2	-	13

LEAD TIME OF DIFFERENT PACKAGES

Light fittings	1	1	6	-
Security Systems	3	3	4	-
Controls	4	3	3	-
Furniture	2	2	4	8
Data and voice cabling	3	2	-	-

**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$/kwh
Manila	PHP 52.88	**0.21'	**0.19'
Hong Kong	HK$ 7.82	0.11	0.13
Kuala Lumpur	RM 4.18	0.052 - 0.137	0.091-0.122
Singapore	S$ 1.38	0.17^	0.17^
Jakarta	IDR 15,180	0.097*	0.097**
Bangkok	Baht 32.73	0.072 - 0.136**	0.096 - 0.098
Shanghai	RMB 6.94	0.089(peak) / 0.044(normal)	0.157(peak) / 0.075(normal)
Beijing	RMB 6.94	0.071 - 0.113	0.219 0.221(peak) / 0.124-0.126 (normal)
Guangzhou	RMB 6.94	0.085 - 0.128	0.089 - 0.124
Chongqing	RMB 6.94	0.08	0.11
Macau	MOP 8.07	0.17	0.17
Bangalore	INR 71.90	0.069 - 0.100	0.087 - 0.128
New Delhi	INR 71.90	0.069 - 0.111	0.070 - 0.111
Ho Chi Minh	VND 22,600	0.11	0.1 / 0.06

Cost are at 4th Quarter 2018 Levels

Basis of Charges in Manila, Philippines

Water
Domestic : 24m^3 - 101m^3/month
Commerial/Industrial : 3,750m^3/month

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

Basis of Charges in Hong Kong, China

Water
Domestic
0 - 12m^3 : Free of Charge
12 - 43m^3 : US$0.54/m^3
43 - 62m^3 : US$0.83/m^3
Above 62m^3 : US$1.17/m^3

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$0.14/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 and Guangzhou, China
Unleaded fuel rate is for Unleaded gasoline 97.

Basis of Charges in Shanghai, China
Water
Domestic: 0-220m^3 = US$0.497/m^3 220-300m^3 = US$0.696/m^3
Above 300m3 = US$0.840/m3

Unleaded Fuel
Unleaded fuel rate is for Unleaded 95#.

Electricity
Domestic (Charge on yearly consumption):
0-3,120kWh = US$0.089/kWh(peak) / US$0.044/kWh(normal);
3,120-4,800kWh = US$0.098/kWh(peak) / US$0.049/kWh(normal);
Above 4,800kWh = US$0.141/kWh(peak) / US$0.070/kWh(normal)

Commercial/Industrial (Charge on yearly consumption):
Charges on consumption less than 1,000kWh per month for summer period only. Refer to www.shdrc.gov.cn for detailed charges for different tiers and charges for non-summer period.

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
**0.29-0.74'	**1.37'	0.97	N/A	1.15
0.83	0.59	1.83	N/A	2.21
0.136-0.478	0.495-0.545	0.522	N/A	0.526
1.99^^ 2.67^^^	1.99^^^^	1.34^^^^^	N/A	1.94^^^^^^
0.069-0.491*	0.450-0.965**	0.481	N/A	0.543
0.259-0.441	0.290-0.483	0.895	N/A	0.881*
0.497-0.840	0.68	1.16	N/A	1.220
0.721-1.296	1.296-1.368	1.10	N/A	1.22
0.285-0.571	0.50	0.97	N/A	1.12
0.61	0.85	1.22	N/A	1.28
0.56-0.90	0.75	1.70	N/A	1.45
0.556-0.695	1.39	1.001	N/A	1.072
0.35-1.05	1.390-2.44	0.992	N/A	1.141
0.24	0.75-0.43	0.82	N/A	0.92

Cost are at 4th Quarter 2018 Levels
Basis of Charges in Chongqing, China
Unleaded Fuel
93# = US$0.93/litre; 97# = US$0.98/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 61m3 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 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 2 November 2018
^^^^^^ 98 Unleaded petrol as at 2 November 2018

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 Psi	Concrete Mpa	Ordinary Design Mix 1 ½"	Ordinary Design Mix Gravel Size ¾"	Pumpcrete Design Mix 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	$9m^2$ 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/m² CFA
Residential	80 - 100
Office	70
Retail	300 - 400
Hotel - Accomodation	30
Hotel - F&B area	550
School	50

Average Cooling Load

Building Type	m² Cooling Area/RT
Residential	18 - 23
Office	14 - 18
Retail	12 - 14
Hotel	23
School	23

Indicative Dimensions for Sports Grounds

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

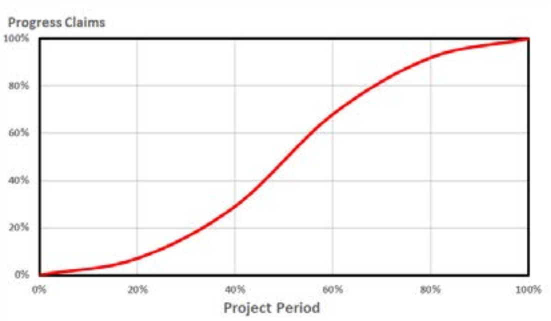
The above dimensions are for a single court with appropriate clearance. No spectator seating or support area has been allowed.

PROGRESS PAYMENTS

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

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

No account has been made for downpayments or retention.



PROGRESS PAYMENTS

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

CONSTRUCTION MATERIALS WHOLESALE PRICE INDEX IN THE NATIONAL CAPITAL REGION (NCR) 2018

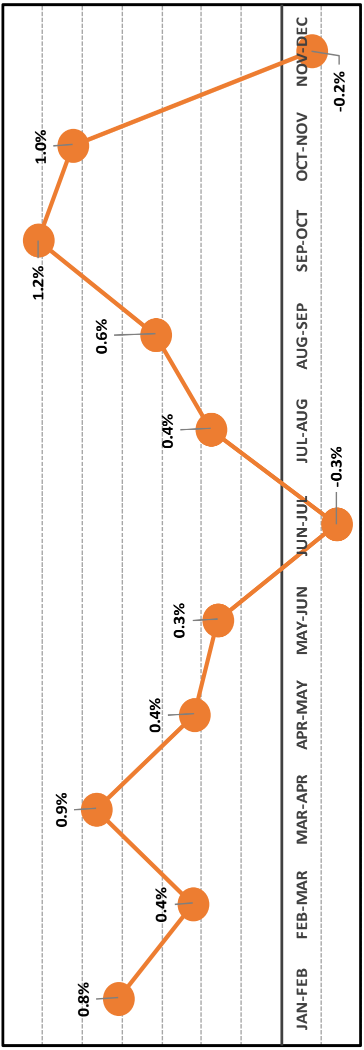
	2018											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ALL ITEMS	245.10	247.10	248.20	250.50	251.60	252.40	251.70	252.60	254.20	257.30	260.00	259.60
A. Sand and Gravel	231.70	231.90	232.40	232.90	232.90	234.60	235.00	235.20	235.60	246.40	248.20	250.40
B. Concrete Products	230.10	230.90	230.90	230.90	230.90	230.90	229.00	229.50	229.90	235.50	244.80	245.80
C. Cement	193.20	193.00	196.90	197.30	197.50	197.50	197.30	197.30	197.80	197.30	199.10	198.70
D. Hardware	236.40	236.80	238.60	240.60	240.60	240.60	242.50	244.10	244.70	245.40	245.40	245.60
E. Plywood	196.50	198.70	198.50	199.50	199.50	199.80	199.20	199.50	200.80	200.80	201.00	200.10
F. Lumber	255.60	261.40	264.20	269.00	269.00	271.50	273.40	275.10	275.80	276.40	277.00	277.00
G. G.I. Sheet	189.10	190.40	190.40	190.40	190.20	187.50	188.90	189.20	189.20	189.30	189.40	189.40
H. Reinforcing Steel	286.00	290.00	295.90	303.80	304.70	304.50	304.50	308.00	308.30	305.80	305.80	305.20
I. Structural Steel	301.00	302.40	303.20	303.20	303.20	304.00	304.00	304.70	305.40	305.40	307.40	309.20
J. Tile Works	192.20	192.30	195.80	195.80	195.80	195.80	196.10	195.80	195.80	196.70	196.70	196.60
K. Glass & Glass Products	186.80	186.80	186.80	186.80	186.80	186.80	186.80	186.80	186.80	186.80	186.80	186.80

CONSTRUCTION MATERIALS WHOLESALE PRICE INDEX IN THE NATIONAL CAPITAL REGION (NCR) 2018

ALL ITEMS	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
	2018											
L. Doors, Jambs, and Steel Casement	211.60	211.80	211.80	217.10	217.10	217.10	216.20	216.20	216.20	216.30	218.80	218.90
M. Electrical Works	215.50	217.30	219.50	223.60	226.60	229.90	232.20	233.60	234.50	234.40	235.00	235.40
N. Plumbing Fixtures & Accessories / Waterworks	187.20	188.50	188.50	188.70	188.70	188.50	189.60	189.60	189.50	189.50	190.10	190.10
O. Painting Works	210.60	211.10	211.20	211.40	211.40	211.20	212.00	212.30	212.40	212.30	212.00	212.00
P. PVC Pipes	184.20	184.40	184.40	184.40	184.40	184.40	185.10	185.80	185.80	185.80	185.80	185.80
Q. Fuel and Lubricants	357.60	367.00	367.20	375.40	385.40	393.20	392.70	394.20	408.70	417.40	397.30	387.60
R. Asphalt	466.80	466.80	466.80	466.80	466.80	466.80	466.80	466.80	466.80	466.80	466.80	466.80
S. Machinery and Equipment Rental	168.70	168.70	168.70	168.70	168.70	168.70	168.70	168.70	168.70	168.70	168.70	168.70

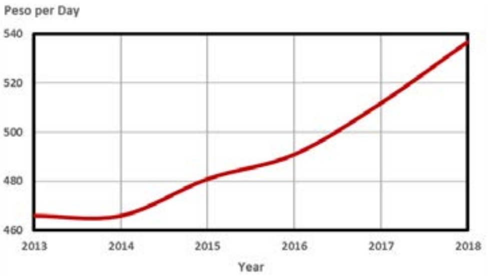
Construction Materials Wholesale Price Index 2018 - All Items

Monthly Price Movement (2000=100)



Source: Philippine Statistics Authority

MINIMUM WAGE

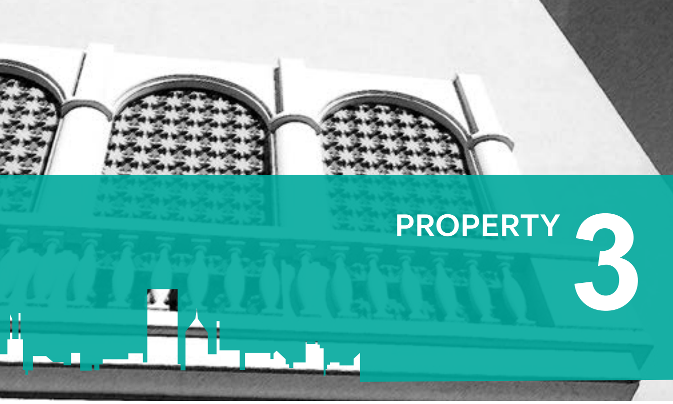


Year	NCR Wage Order No.	Amount of Increase	Peso per Day
08 January 1991	W.O. No. NCR 2	12.00	118.00
16 December 1993	W.O. No. NCR 3	17.00	135.00
01 April 1994	W.O. No. NCR 3	10.00	145.00
02 February 1996	W.O. No. NCR 4	16.00	161.00
01 May 1996	W.O. No. NCR 4	4.00	165.00
06 February 1997	W.O. No. NCR 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	2015 Ave.	2016 Ave.	2017 Ave.	2018 Ave.
ALL ITEMS	224.2	227.3	234.7	252.5
A. Sand and Gravel	216.2	223.5	229.0	237.3
B. Concrete Products	212.9	217.7	221.4	233.3
C. Cement	196.6	200.3	196.7	196.9
D. Hardware	223.9	225.9	228.7	241.8
E. Plywood	192.8	195.0	193.9	199.5
F. Lumber	246.7	245.6	251.2	270.5
G. G.I. Sheet	191.3	186.3	186.6	189.5
H. Reinforcing Steel	254.8	269.4	278.4	301.9
I. Structural Steel	286.8	276.9	284.6	304.4
J. Tile Works	188.6	187.5	190.2	195.5
K. Glass & Glass Products	185.2	185.2	185.2	186.8
L. Doors, Jambs, and Steel Casement	206.1	204.5	209.7	215.8
M. Electrical Works	210.3	212.8	212.9	228.1
N. Plumbing Fixtures & Accessories / Water-works	179.7	184.3	185.9	189.0
O. Painting Works	208.5	207.5	210.0	211.7
P. PVC Pipes	183.9	183.9	184.0	185.0
Q. Fuel and Lubricants	275.6	268.3	309.2	387.0
R. Asphalt	466.8	466.8	466.8	466.8
S. Machinery and Equipment Rental	168.7	168.7	168.7	168.7



PROPERTY 3

Property Updates on:

Commercial

Residential

Hotels and Serviced Apartments

Retail

In General

The Philippines continues to be one of the bright spots in Asia, with a GDP growth rate of 6.1% in 3Q18. The latest recorded GDP growth showed a slowdown but managed to remain as one of the fastest growing in Asia along with Vietnam and mainland China. The y-o-y decline in growth may be attributed to the lower consumer spending on the back of high inflation rate registered in recent periods. Average inflation rate for full year 2018 closed at 5.2%, above the government target's range of 3.0 percent ± 1.0 percentage point for the year. The rise in inflation rate pushed the Bangko ng Sentral ng Pilipinas (BSP) to increase the interest rates five times in 2018 finishing at 4.75%, up 175 bps y-o-y, tempering the velocity of inflation rate increases. The weakening of the Philippine Peso against the USD along with the 4.4% y-o-y growth of Overseas Filipino (OF) remittances to the country totalling to USD 23.7 billion by end October 2018, balanced the overall performance of the economy sustaining the spending of OF families. The Philippine economy experienced a mix of highs and lows in 2018 with the property market showing stable performance as investors continue to be keen on real estate investments and demand for the different asset classes sustain a moderate growth.

There was a robust growth in the office property market with new developments completed and healthy office space demand from occupiers in 2018. Further, vacancy rate was maintained at a manageable level registering 6% in 4Q18. IT-BPM, particularly Offshoring and Outsourcing (O&O) firms, Philippine Offshore Gaming Operators (POGO) and flexible workspace providers fuelled office space demand, typically occupying large office spaces in different buildings. Likewise, Tholons' 2018 Super Cities support the Philippines as an ideal location for offshoring operations. In Tholons' 2018 100 Super Cities, Metro Manila ranked second, with Cebu City (11th), Davao City (75th) Sta. Rosa (87th), Bacolod (89th), and Iloilo (92nd) included in the rankings.

The performance of the residential property market remained positive with the stable demand for residential units from foreign and local investors and end-users. Demand for high-end to luxury price segment was driven by local and foreign HNWIs. On a separate note, O&O firms and MNCs expatriate employees are the demand drivers for the leasing residential market. Residential Price Index by BSP for condominium units in Metro Manila presented q-o-q growth of 5.6% in 3Q18, exhibiting a healthy demand for this housing type.

The retail property market in the Philippines maintained its healthy growth albeit the deferred completions of retail developments. This did not interrupt the entry and expansion of both local and foreign brands as they continued to take advantage of Filipinos' growing young population and increasing purchasing power from growing OF remittances and O&O sector, among others. Majority of the foreign brand expansions came from the fashion and F&B sectors, while majority of the local brand expansions came from the F&B sector.

Hotel property market in the Philippines maintained its positive performance buoyed by the rise of tourism-related activities to support this asset class. Makati City continues to hold most of the hotel room supply being a MICE destination. Meanwhile, development completions in 2018 are mostly situated in Pasay City with more hotel-resort developments in Bay Area supported by increase in tourist arrival reported for 2018. Foreign tourists coming to the country are dominantly from Mainland China and South Korea.

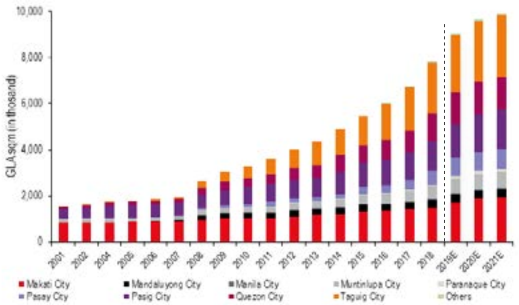
Commercial Sector

Prime and Grade A office developments completed in 2018 added 1.1 million sqm to the existing stock, resulting to a total cumulative stock of 7.7 million sqm office space by end-2018. The rise of development completions in BGC and its fringes in recent periods led to a market share of 28% in Taguig City, leading the total supply of office spaces in Metro Manila. Makati City follows accounting for 19% and Pasig City with a market share of 16%. On the developments in the pipeline, supply of around 2.1 million sqm is expected to be added to the existing supply from 2019 to 2021. Despite headwinds through the delays in PEZA-accredited buildings and project completions, the demand of office space remained healthy recording a vacancy rate of 6% in 4Q18. O&O firms remained as the major office space occupier followed by Philippine Offshore Gaming Operators (POGO). As of September 2018, the number of POGOs accredited by PAGCOR totalled to 57 firms. Apart from O&O and POGOs, technology companies were perceived as an emerging driver of office space demand, with technology companies such as flexible workspace operators and e-commerce firms expanding presence in the Philippine market. Other sources of demand include IT companies and traditional office space occupiers.

Some office completion in 2018 are World Commerce Plaza (BGC) by Megaworld Corporation in Taguig City, Glas Tower by Green Asia in Pasig City, Century Diamond Tower by Century Properties in Makati City, SM Megamall Mega Tower by AM Investments Corporation in Pasig City and DoubleDragon Plaza Tower 3 by DoubleDragon Properties Corp. in Pasay City, among others.

Rents for Prime and Grade A offices per district is as follows, Makati City rents range from PHP 700 to PHP 1,850, Taguig City rents range from PHP 750 to PHP 1,650, Muntinlupa City rents range from PHP 525 to PHP1,300, Pasig City rents range from PHP 650 to 950, Quezon City rents range from PHP 650 to PHP 975, Pasay City rents range from PHP 850 to 950 and Madaluyong City rents range from PHP 750 to PHP 900.

Accumulated Total Office Stock (in sqm)
Metro Manila (2001-2021E)



Note: Office developments included are classified as Prime and Grade A Offices
Source: JLL Research and Consultancy

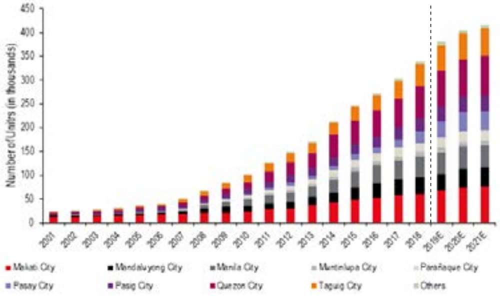
Residential Condominium Sector

A total of 35,700 units was completed in 2018, ending the year with 337,000 residential condominium units. Concentration of existing supply is mostly in Quezon City with 20% share of the total existing supply, Makati City with 18% and Taguig City with 14%. Around 61,000 units are expected to come from 2019 to 2021 projects in the pipeline. The demand driver for residential sale market are predominantly foreign and local high net worth individuals seeking investment. Meanwhile, the leasing market was driven by the occupancy from expatriate employees of O&O firms and MNCs.

Some completed developments in 2018 are The Radiance Manila Bay (Tower A) by Robinsons Land Corporation in in Pasay City, Fern at Grass Residences (Tower 4) by SM Development Corporation (SMDC) in Quezon City, Suntrust Parkview by Megaworld Corporation in Manila City, Asteria Residences (1st Phase) by DMCI in Parañaque City, Arbor Lanes by Ayala Land, Inc. in Taguig City, among others

Makati City commanded the highest price per sqm with price range from PHP 72,800 to PHP 425,000. Taguig City follows with price range from PHP 63,400 per sqm to PHP 327,300 per sqm, Quezon City with price range from PHP 89,400 per sqm to PHP 232,600 per sqm, Pasay City with price range from PHP 46,200 per sqm to PHP 222,300 per sqm, Mandaluyong City with price range from PHP 33,200 per sqm to PHP 193,000 per sqm, Muntinlupa City with price range from PHP 46,800 per sqm to PHP 192,000 per sqm, Manila City with price range from PHP 99,000 per sqm to PHP 187,500 per sqm, Pasig City with price range from PHP 89,300 per sqm to PHP 187,200 per sqm, Parañaque City with price range from 65,300 per sqm to PHP 183,400 per sqm and other districts with price range from PHP 43,700 per sqm to PHP 96,300 per sqm.

Accumulated Total Number of Residential Condominium Units Metro Manila (2001-2021E)



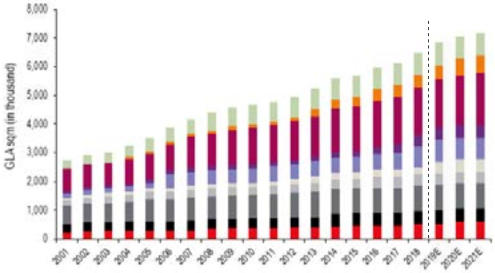
Retail Sector

Added supply in 2018 summed to 350,000 sqm in 2018, totalling the existing stock to 6.5 million sqm. Most of the development completions in 2018 came from mall developments by big players namely Ayala Land, Inc. and SM Prime Holdings. Ayala Land completed three shopping malls in 2018 namely, Ayala Malls Feliz in Pasig City, Circuit Mall in Makati and One Bonifacio in Taguig City. These developments added 150,000 sqm of GLA to the total supply. SM Mall of Asia Expansion located in Pasay City also contributed 160,000 sqm of Gross Leasable Area to retail supply.

More retail spaces and shopping mall amounting to 697,000 sqm in Metro Manila are expected to finish between 2019 and 2021. Retail property demand are from foreign and local brands. Among other foreign fashion brands for expansion in 2018 are as Uniqlo Flagship Store (Japan) in Glorietta 5, Swarovski (Austria) in SM Mall of Asia, Steve Madden (USA) in Trinoma, Jins (Japan) in SM North EDSA, and Charriol in Podium. Some of the new foreign brands are also entering the market with Red Lobster (USA) in S Maison and Motto Motto (Japan) in Serendra that entered in 4Q18.

Local brands expansion also contributed to the demand; Some of the brands are Potato Corner Lab, a new concept, in Glorietta 4, Gingersnaps in SM Megamall, Sunnies Specs in SM North EDSA, The Wholesome Table in Alabang Town Center. New local brands are also establishing themselves such as BLK cosmetics in Glorietta 1 & 2. Expansion and entry of brands in the country is supported by the growing population, increasing purchasing power due to TRAIN law, and more employment provided by O&O.

Accumulated Total Retail Stock (in sqm)
Major Metro Manila Malls (2001-2021E)



Source: JLL Research and Consultancy

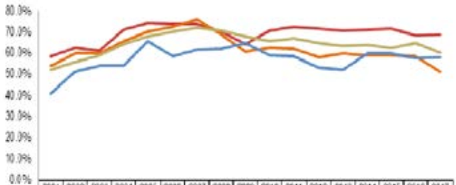
Hotels and Serviced Apartments Sector

Foreign tourist arrival in the country remains robust with 9.2% average growth with around 5.9 million total tourist arrival from January 2018 to October 2018. Top tourist arrival according to the Department of Tourism (DoT) came from South Korea (22%), Mainland China (18%), and USA (14%). 2018 closed adding around 3,000 new hotel rooms in Metro Manila, arriving at a cumulative hotel room supply of 36,000 by end-2018. Majority of hospitality developments are hotel-resort located in the Bay Area (within Pasay City and Parañaque City) supported by the increase of tourist arrivals and online gaming industry activities in the area. More hotel developments are expected to be completed in 2019 to 2021, contributing around 8,400 rooms to the total supply.

According to DoT, hotel occupancy rate in Metro Manila for 2017 declined by 2.27% y-o-y from 66.22% overall occupancy of 2016. However, length of stay on the other hand increased by 45.57% y-o-y with an average of 3.45 days compared to the average 2.37 days in 2016. The decline in the occupancy rate of First class, Standard and Economy rooms affected the overall occupancy rate of the market. Additional supply to completed hotel developments declined the overall occupancy rate of the Hotel market despite the longer recorded length of stay.

The current supply is mostly located in Makati City, a MICE destination, owing 25% of the exiting supply. High-volume of developments in Makati City are 4-star and 5-star developments that accommodates both tourist and business requisites. Among completed hotels for 2018 are Grand Hyatt Manila City by Federal Land, Inc. in Taguig City, Savoy Manila Hotel by Alliance Global Inc in Pasay City, Hop Inn Alabang by Erawan Hop Inn Co., Ltd. In Muntinlupa City, Citadines Bay City Manila by The Ascott Limited in Pasay City and Hilton Manila City by Alliance Global, Inc. in Pasay City

Average Occupancy Rates of Hotels in Metro Manila by Hotel Classification: 2001-2017



	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
De Luxe (5-star)	58.4%	62.7%	61.2%	71.0%	74.0%	73.8%	73.8%	70.1%	64.4%	70.5%	72.4%	71.5%	70.8%	71.1%	71.6%	68.3%	69.1%
First Class (4-star)	54.2%	59.9%	59.9%	65.8%	70.2%	72.3%	75.9%	69.0%	60.6%	62.4%	62.1%	58.0%	60.1%	58.8%	59.1%	58.5%	51.2%
Standard (3-star)	52.5%	55.9%	56.0%	64.3%	67.9%	70.3%	71.8%	70.8%	67.8%	65.7%	67.3%	64.8%	63.3%	64.0%	62.5%	64.7%	60.4%
Economy (2 and 1-star)	41.1%	51.3%	54.1%	54.1%	65.9%	58.4%	61.8%	62.3%	64.6%	59.0%	58.6%	53.4%	52.2%	59.7%	60.1%	57.6%	58.1%

De Luxe (5-star) First Class (4-star) Standard (3-star) Economy (2 and 1-star)

Source: Department of Tourism

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FINANCIAL 4

PHILIPPINES KEY DATA

POPULATION	
Population (2017)	104.9 M
Population (2018)	107.0 M
Urban Population*	47.15%
Population under 15	30.90%
Population over 65	5.20%
Ave. Annual Growth Rate (2015-2020)	1.59%
GEOGRAPHY	
Land Area	298,170 km^2
Agricultural Area (2017)	45%
Capital City	Manila
(population Metropolitan Manila)	12.88M
(population Manila as of May 2018)	1.78M
ECONOMY 2018	
Monetary Unit	Peso
Average Headline Inflation Rate (2012=100)	
(Full Year 2018)	5.20%
Gross Domestic Product (GDP)	
(Full Year 2018)	Php 17,422,819 (in mil)
GDP per Capita	Php 163,443
CONSTRUCTION (Full Year 2018)	
Gross Value of Contruction Output	Php 2,347,393 (in mil)
Net Value of Construction Output	Php 1,358,754 (in mil)
Net Value of Construction Output as a proportion of the GDP	7.80%

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

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

ECONOMIC HIGHLIGHTS
4TH QUARTER 2018

Philippine GDP grows 6.1 percent in the fourth quarter of 2018

Gross Domestic Product (GDP) posted a 6.1 percent growth in the fourth quarter of 2018. The main drivers of growth for the quarter were Construction; Trade and Repair of Motor Vehicles, Motorcycles, Personal and Household Goods; and Other Services.

Among the major economic sectors during the fourth quarter of 2018, Industry had the fastest growth, with 6.9 percent. This was followed by Services, which grew by 6.3 percent, and Agriculture, by 1.7 percent.

Net Primary Income (NPI) grew by 0.9 percent. As a result, Gross National Income (GNI) posted a growth of 5.2 percent.

With the country's projected population reaching 107.0 million in the fourth quarter of 2018, per capita GDP and per capita GNI grew by 4.4 percent and 3.6 percent, respectively. Meanwhile, per capita Household Final Consumption Expenditure (HFCE) grew by 3.8 percent.

Source: National Accounts of the Philippines
Philipiine 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 defines 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	$FV = PMT [((1+i)^n-1), i]$
Singking 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

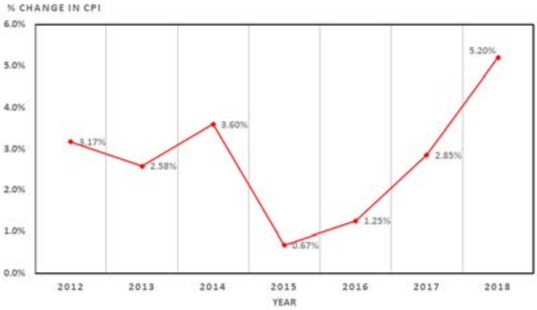
Based on:
- 1,000 units of currency
- Interest compounded monthly
- Equal monthly repayments

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
2012	100.0	3.17%
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%

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

EXCHANGE RATES

Approximate Rates prevailing as at 19 November 2018.

COUNTRY	CURRENCY	Foreign Currency in PHP	PHP in Foreign Currency	US$ in Foreign Currency
Australia*	dollar	38.48	0.03	1.37
Bahrain*	dinar	139.74	0.01	0.38
Brunei*	dollar	38.26	0.03	1.37
Canada*	dollar	40.03	0.03	1.32
China*	yuan	7.60	0.13	6.94
Denmark+	kroner	8.05	0.12	6.54
European Currency Unit*	euro	60.09	0.02	0.88
Hong Kong*	dollar	6.73	0.15	7.83
India+	rupee	0.73	1.37	71.79
Indonesia*	rupiah	0.004	277.626	14,603.57
Japan*	yen	0.47	2.14	112.70
Malaysia+	ringgit	12.57	0.08	4.19
New Zealand+	dollar	36.14	0.03	1.46
Norway	kroner	6.24	0.16	8.44

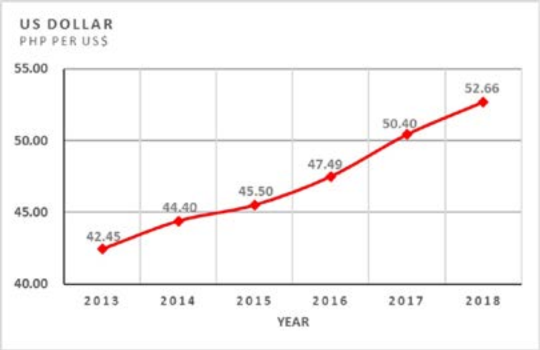
Notes:
* Convertible currencies with BSP
+ Non convertible currencies with BSP

COUNTRY	CURRENCY	Foreign Currency in PHP	PHP in Foreign Currency	US$ in Foreign Currency
Pakistan+	rupee	0.39	2.55	134.38
Saudi Arabia*	rial	14.04	0.07	3.75
Singapore*	dollar	38.40	0.03	1.37
South Africa+	rand	3.77	0.27	14.02
South Korea*	won	0.05	21.44	1,127.78
Sweden+	kroner	5.84	0.17	9.01
Switzerland*	franc	52.66	0.02	1.00
Taiwan+	NT dollar	1.71	0.59	30.92
Thailand*	baht	1.60	0.63	32.97
United Arab Emirates (UAE)*	dirham	14.34	0.07	3.67
United Kingdom*	pound	67.60	0.01	0.78
United States of America*	dollar	52.68	0.02	1.00

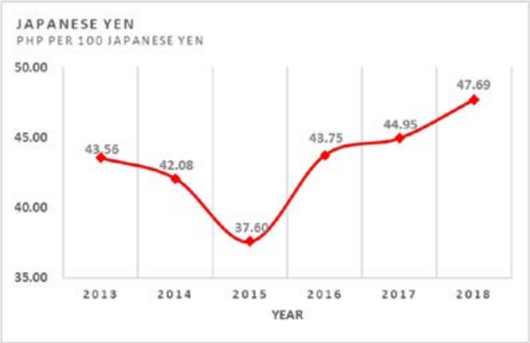
Source: BSP Reference Rate

CURRENCY CHARTS

US Dollar

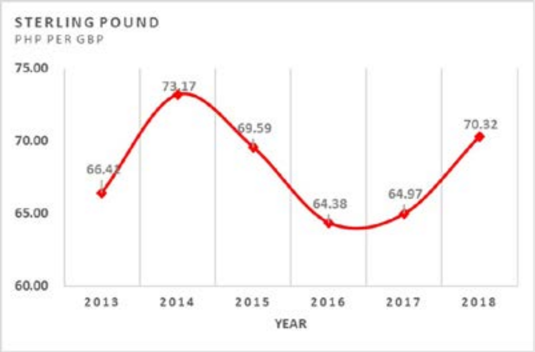


Japanese Yen



Note: Yearly Average Rate

Sterling Pound

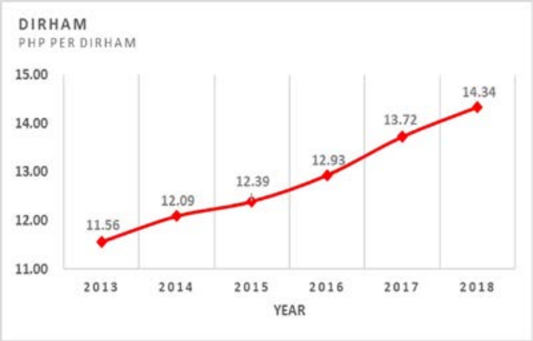


Singaporean Dollar

(Cont'd)

CURRENCY CHARTS

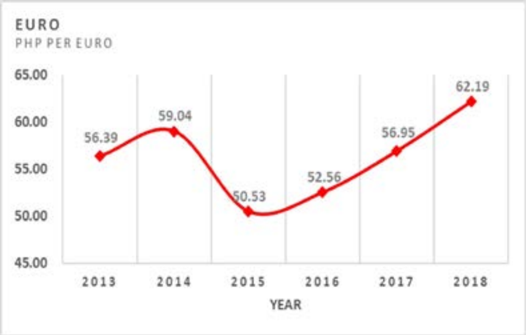
Dirham



Hong Kong Dollar

Note: Yearly Average Rate

Euro



Australian Dollar

(Cont'd)

PRIME RATES

Approximate rates prevailing in 4th Quarter 2018

COUNTRY	RATE (%)
China**	4.75
Hong Kong	5.13
India	9.45
Indonesia	6.75
Macau	5.38
Malaysia^^^	4.60
Philippines	4.35
Singapore	5.33
Thailand#	7.00
United Kingdom	0.75
United States of America	5.25
Vietnam##	9.00

China** = 5-year Benchmark Lending Rate

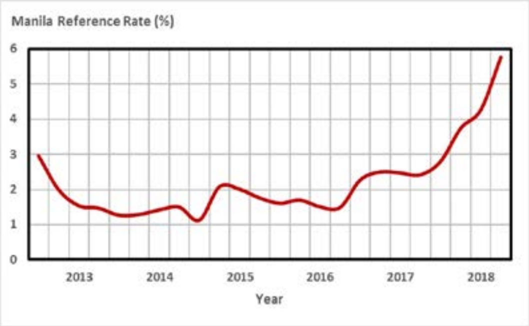
Malaysia^^^ = Indicative Effective Lending Rate

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 2018



PHILIPPINE CENTRAL BANK MANILA REFERENCE RATE

DATE	(%)
Mar 2013	2.96
Jun 2013	2.00
Sep 2013	1.54
Dec 2013	1.47
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	5.76

Note: Based on all maturities.

OTHER INFORMATION 5

PHILIPPINE MAP

PUBLIC HOLIDAYS

	2019
PHILIPPINES	
New Year's Day	01 Jan*
Chinese New Year	05 Feb#
EDSA People Power Revolution	25 Feb#
Araw ng Kagitingan	09 Apr*
Maundy Thursday	18 Apr*
Good Friday	19 Apr*
Black Saturday	20 Apr#
Labor Day	01 May*
End of Eid-ul-Fitre (Feast of Ramadhan)	06 Jun*
Independence Day	12 Jun*
Eid-ul-Adha	12 Aug*
Ninoy Aquino Day	21 Aug#
National Heroes Day	26 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

	2019
CHINA	
New Year's Day	01 Jan
Chinese New Year's Eve	04 Feb
Chinese New Year$	05 Feb
	10 Feb
Women's Day*	08 Mar@
Ching Ming Festival	05 Apr
Labour Day	01 May
Dragon Boat Festival	07 Jun
Mid-Autumn Festival	13 Sep
National Day#	01 Oct
	02 Oct
	03 Oct
Chung Yeung Festival	07 Oct@

$ *05-10 Feb 2019 are holidays*
* *All women can have a half day holiday*
\# *01-07 Oct 2019 are public holidays. 05-06 Oct 2019 are working days.*
@ *Non-Statutory Holiday*

	2019
HONG KONG	
New Year's Day	01 Jan
Lunar New Year (Day 1)	05 Feb
Lunar New Year (Day 2)	06 Feb
Lunar New Year (Day 3)	07 Feb
Ching Ming Festival	05 Apr
Good Friday	19 Apr
Holy Saturday	20 Apr
Easter Monday	22 Apr
Labour Day	01 May
Birthday of the Buddha Holiday*	13 May
Tuen Ng Festival	07 Jun
HKSAR Establishment Day	01 Jul
The day Following Chinese Mid-Autumn Festival	14 Sep
National Day	01 Oct
Chung Yeung Festival	07 Oct
Christmas Day	25 Dec
The 1st weekday after Christmas Day	26 Dec

**As the Birthday of the Buddha in 2019 falls on a Sunday, the day following it is designated as a general holiday in substitution*

(Cont'd)

PUBLIC HOLIDAYS

	2019
MACAU	
New Year's Day	01 Jan
Lunar New Year's Eve (Afternoon)	04 Feb*
Lunar New Year's Day	5-Feb
The 2nd day of Lunar New Year	06 Feb
The 3rd day of Lunar New Year	07 Feb
Ching Ming Festival	05 Apr
Good Friday	19 Apr
Holy Saturday	20 Apr
Easter Monday	22 Apr*
Labour Day	01 May
Birthday of the Buddha Holiday	13 May*
Tung Ng Festival	07 Jun
The day Following Chinese Mid-Autumn Festival	14 Sep
National Day	01 Oct
The day following National Day	02 Oct
Chung Yeung Festival	07 Oct
All Soul's Day	02 Nov
All Soul's Day Holiday	04 Nov*
Feast of the Immaculate Conception	08 Dec
Feast of the Immaculate Conception Holiday	09 Dec*
Macau SAR Establishment Day	20 Dec
Winter Solstice	22 Dec
Winter Solstice Holiday	23 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*

	2019
INDIA	
New Year's Day	01 Jan
Maharashtra Day	01 May
Ramzan	05 Jun
Independence Day	15 Aug
Ganesh Chaturthi	02 Sep
Gandhi Jayanthi	02 Oct
Dasara	08 Oct
Diwali	28 Oct
Christmas Day	25 Dec
INDONESIA	
New Year's Day	01 Jan
Chinese New Year's (Imlek)	05 Feb
Idul Adha Day	
Hindu Day of Quiet (Nyepi)	07 Mar
Ascension of Prophet Muhammad	03 Apr
Good Friday	19 Apr
International Labour Day	01 May
Waisak Day	19 May
Ascension Day of Jesus Christ	30 May
Pancasila Day	01 Jun
Idul Fitri	05 Jun
	06 Jun
Idul Adha Day	11 Aug
National Independence Day	17 Aug
Hijriyah New Year	01 Sep
Prophet Muhammad's Birthday	09 Nov
Christmas Day	25 Dec

(Cont'd)

PUBLIC HOLIDAYS

	2019
MALAYSIA	
New Year's Day **	01 Jan
Chinese New Year	05 Feb
	06 Feb
Labour Day	01 May
Wesak Day	19 May#
Hari Raya Aidilfitri*	05 Jun
	06 Jun
Hari Raya Qurban*	11 Aug
National Day	31 Aug
Awal Muharam (Islamic New Year)	01 Sep#
King/Agong's Birthday	09 Sept
Malaysia Day	16 Sep
Deepavali*	27 Oct#
Prophet Muhammad's Birthday	09 Nov
Christmas Day	25 Dec

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

	2019
SINGAPORE	
New Year's Day	01 Jan
Chinese New Year	05 Feb
	06 Feb
Good Friday	19 April
Labour Day	1 May
Vesak Day	19 May#
Hari Raya Puasa	05 Jun
National Day	09 Aug
Hari Raya Haji	11 Aug#
Deepavali*	27 Oct#
Christmas Day	25 Dec

* *Subject to changes*
\# *The following Monday will be a public holiday.*

VIETNAM	
New Year's Day	01 Jan
Lunar New Year	04 Feb
	05 Feb
	06 Feb
	07 Feb
	08 Feb
Liberation Day of Saigon	30 Apr
International Labour Day	01 May
National Day	02 Sep
Hung Vuong King Celeration	14 Apr
	15 Apr #
Christmas Day	24 Dec
	25 Dec

 # Substitute

(Cont'd)

PUBLIC HOLIDAYS

	2019
THAILAND	
New Year	01 Jan
Makha Bucha Day	19 Feb
Chakri Memorial Day	08 Apr[1]
Songkran Festival	15 Apr[2]
Songkran Festival	16 Apr[2]
Labour Day	01 May
Wisakha Bucha Day	20 May[3]
Asarnha Bucha Day	16 Jul
H.M. King Maha Vajiralongkorn's Birthday	29 July□
H.M. the Queen's Birthday	12 Aug
H. M. King Bhumibol Adulyadej Memorial Day	14 Oct□
Chulalongkorn Day	23 Oct
H.M. King Bhumibol Adulyadej's Birthday / Father's Day	05 Dec
Constitution Day	10 Dec
New Year's Eve	31 Dec

1 - As Chakri Memorial Day falls on Saturday (6 Apr) , Monday is designated as a general holiday in substitution

2 - As Songkran Festival falls on Saturday (13 Apr) and Sunday (14 Apr); Monday and Tuesday is designated as a general holidays in substitution

3 - As Wisakha Bucha Day falls on Saturday (18 May), Monday is designated as a general holiday in substitution

4 - As H. M. King Maha Vajiralongkorn's Birthday falls on Sunday (28 July) , Monday is designated as a general holiday in substitution

5 - As H. M. Bhumibol Adulyadej Memorial Day falls on Sunday (13 Oct) , Monday is designated as a general holiday in substitution

ARCADIS Design & Consultancy for natural and built assets

IDD CODES AND TIME DIFFERENCES

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

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

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 $mile^2$
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			
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/cm^2	=	1 KPa			
POWER					
1,000 w	=	1 kw	550 ft-lb/sec	=	1hp
1 w	=	1VA x pf*			
TEMPERATURE					
COOLING LOAD			3,024 kcal/hr	=	1TR
12,000 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 bar = 100 KPa 1 psf = 47.88 Pa 1 psi = 6.895 KPa 1 atm. = 101.3 KPa	1 MPa = 145 psi 1 kg/cm^2 = 14.22 psi 1 KPa = 0.295 in.Hg 1 KPa = 20.89 psf
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 Build-ing Council (USGBC) and the Philippine Green Building Council (PhilGBC).

Our environmental sustainability team composed of highly skilled architects and engineers, has the most number green professional accrediatation 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 adaptibility 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 optmize 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 processstandards 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.

Certificate of Registration

QUALITY MANAGEMENT SYSTEM

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


bsi.

Certificate of Registration

ENVIRONMENTAL MANAGEMENT SYSTEM

EMS 685471

Original Registration Date: 2018-04-13

...making excellence a habit™

Arcadis Philippines Inc. operates an Environmental Management System which complies with the requirements of ISO 14001:2015. The current certification is valid until 12 April 2021. The ISO 14001 standard provides companies and organizations with a flexible framework for the voluntary development of environmental protection measures.

ARCADIS ASIA SECTORS

AUTOMOTIVE

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

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

AVIATION

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

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

CHEMICALS & PHARMACEUTICALS

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

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

COMMERCIAL DEVELOPERS

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

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

ARCADIS ASIA SECTORS

FINANCIAL INSTITUTIONS

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

OIL AND GAS

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

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

RAIL

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

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

PORTS AND WATERWAYS

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

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

RETAIL & CONGLOMERATES

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

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

ARCADIS ASIA SERVICES

BUSINESS ADVISORY

From rapid urbanization and pressure on natural resources, to tighter regulation and market consolidation, we live in an increasingly complex world. In Arcadis you have a partner that understands your business challenges and has first-hand experience of the assets you own and operate. We bring unique insights which support you in getting better results with more certainty.

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.

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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