



Construction Cost Handbook

PHILIPPINES 2024

Arcadis Philippines Inc.

Electronic Cost Handbook

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CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

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 January 2024**.



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ARCADIS PHILIPPINES, INC.

ABOUT US

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

Arcadis Philippines Inc. (API) 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 quality of life, creating solutions based on a blend of services. We have worked on various projects nationwide, covering both the private and public sectors, as well as our diverse set of services cater for infrastructure, residential, commercial, industrial, education, health care, recreation facilities, hospitality and interior fit-out projects. API'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 |
PPP & Infrastructure Consultancy |
Construction Loan Monitoring | BIM Management |
Digital Solutions



Over 1000 projects nationwide



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

OUR CORE VALUES

People First

We care for one another 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 providing 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

Arcadis is a leading global natural and built asset design & consultancy firm working in partnership with our clients to deliver exceptional and sustainable outcomes through the application of design, consultancy, engineering, project and management services. Our business is managed regionally through locally based operating companies with empowered management teams.

Arcadis is one of the regional operating companies and we are committed to satisfying all requirements applicable to our operations and achieving continual improvement. Our talented people work in Infrastructure, Water, Environment and Buildings, across our business lines and geographies, to provide real-life solutions to today's most complex challenges, based on deep global market sector knowledge and a strong understanding of local market conditions. In doing so, they enable us to fulfil our passion to improve the quality of life by building a culture that delivers innovation, excellence and client success.

To ensure achievement of this commitment Arcadis has established a framework of strategic objectives at both group and regional levels which act as our quality objectives. These objectives provide the opportunity to meaningfully drive performance excellence leading to continual improvement. Performance against these objectives is reviewed annually through the operational management structure.

Fundamental to the successful management of quality is the effective communication of business requirements and best practice. To achieve this and to meet the requirements of our clients, staff and stakeholders we operate a business management system which complies with the requirements of ISO 9001. This system is available to all staff and includes mechanisms for managing risk and delivering continual improvement. The ongoing effectiveness of the system and its application is the subject of periodic management reviews and independent audits.

Whilst the Arcadis acknowledges that the primary responsibility for the successful implementation of this policy lies with the Arcadis Leadership, we also recognise that this success is underpinned by the commitment of each and every employee.



Haraya Residences

Owner: Shang Robinsons Properties, Inc.

Design Architect: P&T Architects and Engineers Ltd.

Architect of Record: Casas Architects



Urdaneta Philippines Temple
Owner: The Church of Jesus Christ of Latter-Day Saints
Architect: Rchitects, Inc.

1 CONSTRUCTION COST DATA

Construction Cost Specification

Construction Costs for Philippines

M&E Services Costs for Philippines

Fit-Out Costs for Philippines

Kitchen Equipment Costs for Philippines

Unit Cost for Ancillary Facilities for Philippines

Construction Costs for Selected Asian Cities

M&E Costs for Selected Asian Cities

Major Rates for Selected Asian Cities

M&E Major Plant Costs for Philippines

Retail Prices of Basic Construction Materials for Philippines

1 Construction Cost Data

CONSTRUCTION COST SPECIFICATION

The costs for the respective categories given on the succeeding pages are averages based on fixed price competitive tenders. It must be understood that the actual cost of a building will depend upon the design, procurement methods, and many other factors and may vary from the figure shown. The costs per square meter are based on construction floor areas measured to the outside face of the external walls / external perimeter, including lift shafts, stairwells, plant rooms, water tanks, and the like.

All buildings are assumed to have no basements (except otherwise stated) and are built on flat ground, with normal soil condition and minimal external works. The costs exclude land cost, professional fees, and finance and legal expenses. The standards for each category of building vary from country to country and do not necessarily follow those of Manila. All costs are in PhP/m² CFA. Fluctuation in exchange rates may lead to changes in construction costs. 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

An average standard apartment building having 6-8 flats per floor with 50m²-150m² per flat and façade comprising textured paint and punch window, internal finishes comprising wood finish, plaster and paint; painted rubbed concrete ceiling for residential units and local ceramic tiles for toilets. Luxury residential façade is comprised of a 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 for residential units; and homogeneous tiles for toilets.

Air conditioning, gensets, automatic sprinkler system, complete plumbing and disposal system, complete fire alarm and detection system, and FTTH (Fiber To The Home) system are allowed for luxury apartments and prestige houses.

proper Services to standard apartments also include paging system and Davit type gondola. Luxury residential services also include CCTV cameras on lobby, track mounted type gondola, and helipad provision.

OFFICE/COMMERCIAL

This is based on building 30-40 storeys with floor plate minimum of 1,000m² per level. Average standard offices and shopping centres have bare finish and exclude A/C ducting and light fittings to tenant areas. Prestige offices have curtain wall elevations and stone-finished lobbies.

INDUSTRIAL

Industrial and Owner-operated factories exclude manufacturing equipment, racking system, air-conditioning, offices fit-out, and special services provisions. With floor areas above 20,000m².

HOTELS

FF&E includes interior decoration, loose furniture, etc. but excludes hotel and gaming operator's items (e.g. cutlery, crocker, linen, gaming equipment, etc.). This also includes 1 level of basement.

OTHERS

Carparks are multi-storey, above ground.

Schools have standard government provisions.

Student hostels adhere to university standard.

Hospitals include fit-out to nursing rooms and hospital facilities. Services i.e., oxygen piping, A/C, genset, ultrapure water, fire suppression system and special type plumbing fixtures, and fit-out to doctor's offices are excluded.

Land development includes earthworks, road right of way, cold water distribution, sewer mains, drainage system, power and communications system, and minor landscaping works.

1 Construction Cost Data

CONSTRUCTION COSTS FOR PHILIPPINES

BUILDING TYPE	BUILDING / *CIVIL WORKS	M&E TOTAL SERVICES	PESO/m ²		TOTAL
			DOMESTIC	OFFICE / COMMERCIAL	
Apartments, high rise, average standard	44,850 - 58,786	9,797 - 14,270	54,647 -	73,056	
Apartments, high rise, high end	59,696 - 107,133	12,840 - 23,540	72,536 -	130,673	
Terraces houses, average standard	45,201 - 53,865	2,930 - 5,050	48,131 -	58,915	
Detached houses, high end	84,348 - 142,074	9,140 - 17,090	93,488 -	159,164	
OFFICES					
Medium/high rise offices, average standard	37,390 - 48,474	11,750 - 16,700	49,140 -	65,174	
High rise offices, prestige quality	56,000 - 65,523	15,150 - 26,722	71,150 -	92,245	
Out-of-town shopping centre, average standard	31,710 - 36,905	10,220 - 15,280	41,930 -	52,185	
Retail malls, high end	45,846 - 61,091	11,350 - 19,840	57,196 -	80,931	
HOTELS					
Budget hotels-3-star, mid market	48,547 - 58,612	13,830 - 18,540	62,377 -	77,152	
Business hotels - 4/5-star	55,225 - 92,220	15,960 - 26,230	71,185 -	118,450	

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

Luxury hotels - 5-star	78,554	-	151,300	20,380	-	36,390	98,934	-	187,690
Integrated Hotel and Casino - 4/Luxury 5-Star	94,293	-	155,296	35,345	-	60,792	129,638	-	216,088
INDUSTRIAL									
Industrial units, shell only (conventional single story framed units)	23,187	-	27,967	4,700	-	7,940	27,887	-	35,907
Owner operated factories, low rise, light weight industry	32,741	-	36,797	4,700	-	10,270	37,441	-	47,067
OTHERS									
Underground/basement car parks (<3 levels)	26,028	-	31,322	6,470	-	10,950	32,498	-	42,272
Multi storey car parks, above ground(<4 levels)	20,142	-	29,302	5,560	-	10,830	25,702	-	40,132
Schools (primary and secondary)	27,678	-	31,734	8,960	-	18,850	36,638	-	50,584
Students' residences	31,843	-	36,432	9,190	-	15,500	41,033	-	51,932
Sports clubs, multi purpose sports/leisure centres (dry sports) with a/c and including FF & E	53,783	-	77,095	7,960	-	12,800	61,743	-	89,895
General hospitals - public sector	57,820	-	61,964	16,520	-	24,930	74,340	-	86,894
*Land Development - Residential Lots for Detached Houses	1,430	-	4,720	963	-	1,582	2,393	-	6,302
*Land Development - Commercial Lots	2,370	-	8,185	1,822	-	5,571	4,192	-	13,756

Note:
Costs are at January 2024 levels.
*Cost per m² (Land Area)

Construction Cost Data

M & E COSTS SERVICES COSTS FOR PHILIPPINES

BUILDING TYPE	TOTAL SERVICES	ELECTRICAL SERVICES	MECHANICAL SERVICES	FIRE SERVICES	LIFTS / ESCALATOR	PLUMBING SERVICES	PESO/m ²
DOMESTIC							
Apartments, high rise, average standard	9,797 - 14,270	3,957 - 4,300	1,540 - 2,930	1,140 - 1,560	850 - 2,300		2,310 - 3,180
Apartments, high rise, high end	12,840 - 23,540	3,900 - 6,700	2,930 - 5,510	1,140 - 1,880	2,200 - 4,760		2,670 - 4,690
Terraces houses, average standard	2,930 - 5,050	1,400 - 1,800	680 - 1,500	-	-		850 - 1,750
Detached houses, high end	9,140 - 17,090	3,000 - 5,800	3,100 - 5,140	-	-		3,040 - 6,150
OFFICE / COMMERCIAL							
Medium/high rise offices, average standard	11,750 - 16,700	3,500 - 4,700	4,000 - 5,680	1,190 - 1,620	1,800 - 3,000		1,260 - 1,700
High rise offices, prestige quality	15,150 - 26,722	4,800 - 8,712	4,620 - 8,600	1,290 - 2,070	2,900 - 4,930		1,540 - 2,410
Out-of-town shopping centre, average standard	10,220 - 15,280	3,060 - 5,100	3,000 - 5,180	1,310 - 1,710	1,600 - 1,800		1,250 - 1,490
Retail malls, high end	11,350 - 19,840	3,600 - 6,800	3,440 - 7,020	1,560 - 2,080	1,450 - 2,300		1,300 - 1,640
HOTELS							
Budget hotels - 3-star, mid market	13,830 - 18,540	4,900 - 5,800	3,500 - 5,000	1,320 - 1,440	1,800 - 2,600		2,310 - 3,700
Business hotels - 4/5-star	15,960 - 26,230	5,200 - 9,800	5,100 - 7,200	1,440 - 1,810	1,800 - 2,900		2,420 - 4,520

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

Luxury hotels - 5-star	20,380 - 36,390	5,500 - 10,200	7,300 - 13,050	1,780 - 2,630	2,200 - 3,500	3,600 - 7,010
Integrated Hotel and Casino	35,345 - 60,792	17,704 - 33,205	10,061 - 13,050	1,780 - 2,630	2,200 - 4,897	3,600 - 7,010
INDUSTRIAL						
Industrial units, shell only (conventional single story framed units)	4,700 - 7,940	2,000 - 3,500	800 - 1,500	1,080 - 1,200	0 - 400	820 - 1,340
Owner operated factories, low rise, light weight industry	4,700 - 10,270	2,000 - 3,500	800 - 1,600	1,080 - 3,000	0 - 730	820 - 1,440
OTHERS						
Underground/basement car parks (<3 levels)	6,470 - 10,950	2,700 - 4,200	1,410 - 2,250	1,080 - 1,940	260 - 570	1,020 - 1,990
Multi storey car parks, above ground (<4 levels)	5,560 - 10,830	2,500 - 4,000	650 - 2,210	1,220 - 2,350	-	1,190 - 2,270
Schools (primary and secondary)	8,960 - 18,850	3,300 - 4,900	1,450 - 6,580	1,080 - 1,650	1,600 - 2,330	1,530 - 3,390
Students' residences	9,190 - 15,500	3,600 - 4,300	1,390 - 2,440	1,020 - 1,880	1,140 - 3,130	2,040 - 3,750
Sports clubs, multi purpose ports/leisure centres (dry sports) with a/c and including FF&E	7,960 - 12,800	2,900 - 3,770	1,800 - 2,870	570 - 1,230	960 - 2,210	1,730 - 2,720
General hospitals - public sector	16,520 - 24,930	5,000 - 8,000	5,320 - 7,780	1,620 - 2,520	1,990 - 2,800	2,590 - 3,830
*Site or Land Development- Residential Lots for Detached Houses	963 - 1,582	461	700	-	-	502 - 882
*Site or Land Development- Commercial Lots	1,822 - 5,571	924	1,871	-	-	898 - 3,700

Note:

Costs are at January 2024 levels.

*Cost per m² (Land Area)

1 Construction Cost Data

FIT-OUT COSTS FOR PHILIPPINES

BUILDING TYPE	PESO/m ²
HOTELS	
Public Areas (Front of House) :	
3-star Hotel	28,000 - 36,000
4-star Hotel	44,000 - 60,000
5-star Hotel	60,000 - 107,000
Guest Rooms :	
3-star Hotel	26,000 - 32,000
4-star Hotel	51,000 - 85,000
5-star Hotel	78,000 - 114,000
Notes :	
1. Fit-out costs includes floor, wall, and ceiling finishes, sanitary fittings, doors and hardware, built-in furniture (wardrobe, cabinet, shelves, mini bar, countertop, TV niche, bed frames, headboard, etc.), internal partitions in guestrooms, drapery, general lightings, and architectural light fittings.	
2. Excludes building shell, demising walls, M&E works, ELV, FF&E / loose furniture, artworks, special and decorative lightings, operational supplies and equipment (OS&E), opening expenses, and computer systems.	

Notes :

1. Costs are at January 2024 Levels.

2. Costs exclude operational equipment and supplies, structure, external enclosure, major M&E plant, financing and developers costs, and professional and marketing fees.

FIT-OUT COSTS FOR PHILIPPINES

BUILDING TYPE	PESO/m ²
COMMERCIAL	
Shopping Centers	27,000 - 38,000
Note : Mall / Public areas only; bare finish in tenant areas.	
RESTAURANTS	
General dining restaurant	33,000 - 53,000
Fine dining restaurant	53,000 - 112,000
THEATRES / CINEMAS	
Theatres*	54,000 - 103,000
Cinemas**	63,000 - 90,000
Note : * Includes stage rigging and equipment, draperies, AV equipment projectors, screens, acoustics and seatings	
** Includes screens, projection equipment, seats, finishes, ticketing booth	
BUSINESS CLUBS	62,000 - 220,000

Notes :

1. Costs are at January 2024 Levels.

2. Costs exclude operational equipment and supplies, structure, external enclosure, major M&E plant, financing and developers costs, and professional and marketing fees.

1 Construction Cost Data

FIT-OUT COSTS FOR PHILIPPINES

BUILDING TYPE	PESO/m ²
OFFICES	
Standard offices*	
Shell and Core condition	33,900 - 57,100
Executive offices**	
Shell and Core condition	56,500 - 91,000
* Medium quality systems furniture and finishes	
** High quality systems furniture and finishes	
Notes :	
Inclusions:	
Floor, wall, and ceiling finishes, internal wall partition, doors and hardware, built-in furniture, loose furniture, system furniture, kitchen appliances, and special lightings.	
Services includes power supply for general lightings, door access, cable trays, conduits and wires, power outlets, voice and data outlets, alteration of fire sprinklers and smoke detectors as required, airconditioning, and mechanical ventilation.	
Exclusions:	
Office operating equipment, Medical equipment and supplies, Gym equipment, Gaming equipment, Artworks, Operation and maintenance supplies, Tablewares, and other special feature by operations.	
WIFI, Picocell, CATV, CCTV, Audio Visual System	
Turn-over conditions:	
Bare finish on floor, wall, and ceiling and may require additional wetworks.	
No doors and hardware, internal wall partition, airconditioning, mechanical ventilation, and lightings in leasable area.	
Tapping points for utilities only.	
For mechanical works:	
1. Chilled Water with AHU by Building owner / Lessor - cost includes ductworks and air terminals	
2. Chilled Water using FCU - cost includes ductworks, air terminals, fan coil units, and chilled water piping	
3. Variable Refrigerant Flow - cost includes aircon equipment, refrigerant piping, ductworks, and air terminals	

Notes :

1. Costs are at January 2024 Levels.
2. Costs exclude operational equipment and supplies, structure, external enclosure, major M&E plant, financing and developers costs, and professional and marketing fees.

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

FIT-OUT COSTS FOR PHILIPPINES

BUILDING TYPE	PESO/m ²
OFFICES	
Standard offices*	
Warmshell condition	27,600 - 48,500
Executive offices**	
Warmshell condition	48,300 - 87,000
* Medium quality systems furniture	
** High quality furniture and finishes	
Notes :	
Inclusions:	
Floor and wall finishes, internal wall partition, doors and hardware, built-in furniture, loose furniture, system furniture, kitchen appliances, and special lightings.	
Services includes door access, power outlets, voice and data outlets, fire extinguishers, alterations or relocation of airconditioning and mechanical ventilation as required.	
Exclusions:	
Office operating equipment, Medical equipment and supplies, Gym equipment, Gaming equipment, Artworks, Operation and maintenance supplies, Tablewares, and other special feature by operations.	
WIFI, Picocell, CATV, CCTV, Audio Visual System	
Turn-over conditions:	
Raised flooring in bare finish (provided by the Building owner / Lessor). No doors and hardware, internal wall partitions, and wall finishes. Contains ceiling finishes, general lightings, smoke detectors, fire sprinklers and airconditioning.	

Notes :

1. Costs are at January 2024 Levels.

2. Costs exclude operational equipment and supplies, structure, external enclosure, major M&E plant, financing and developers costs, and professional and marketing fees.

1 Construction Cost Data

FIT-OUT COSTS FOR PHILIPPINES

DEFINITIONS

HOTEL

Operational supplies and equipment (OS&E)

i.e., bed mattresses, cutlery, crockery, linen, television, refrigerator, etc.

FF&E / Loose Furniture

i.e., chairs, tables, sofas, etc.

Special and Decorative Lightings

i.e., chandeliers, track lights, accent lights, bedside lamps, floor lamps, etc.

OFFICES

Office operating equipment

i.e., printers, scanners, computers, monitors, and server equipment

Medical equipment and supplies

i.e., medical beds, ECG units and accessories, step stool, body weight scales and height rods, wheelchairs, basic diagnostics, personal protective equipment, IV stands, carts, etc.

Gym equipment

i.e., barbells, bench press, squat rack, cables and pulleys, etc.

Gaming equipment

i.e., video game consoles, arcades, pool tables, table tennis, etc.

Operation and maintenance supplies

i.e., safety gears, tool boxes, power tools, hand tools, electrical tools, cleaning supplies and equipment, etc.

Tablewares

i.e., cutlery, glassware, serving dishes, serving utensils, etc.

Kitchen appliances

i.e., refrigerator, microwave oven, coffee maker, etc.

KITCHEN EQUIPMENT COSTS FOR PHILIPPINES

DESCRIPTION	COST (Php)
BUSINESS CLUB 500-900 m ² floor area	22M - 50M
EXECUTIVE DINING 200-400 m ² floor area	22M - 50M
4 STAR HOTEL* 50 - 150 rooms	41M - 92M
5 STAR HOTEL* 200 - 500 rooms	140M - 240M
OFFICE CANTEEN 200 - 300 m ² floor area	14M - 20M

*Includes Commissary Kitchen and All Day Dining but excludes Specialty Restaurants

1 Construction Cost Data

UNIT COSTS FOR ANCILLARY FACILITIES FOR PHILIPPINES

DESCRIPTION	UNIT	PESO
SQUASH COURTS		
Single court with glass backwall including associated mechanical and electrical services but excluding any public facilities (enclosing structure not included)	per court	1,900,000
TENNIS COURTS		
Single court on grade with acrylic surfacing completed with chain link fence	per court	2,503,000
Single court on grade with artificial turf surfacing including chain link fence	per court	3,028,000
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	25,133,000.00
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	30,204,000.00
Extra for heat pump system for swimming pool	per pool	10,800,000.00
Extra for salt chlorine generator	per pool	500,000.00
Amenity pool outdoor approx. 300m ² swimming pool with kiddie pool and jacuzzi (pool deck & structure not included) fully tiled including associated equipment and pool lighting	per pool	11,000,000 to 16,000,000
BASKETBALL COURTS		
Exposed court, approximately 975m ² including player benches and excluding equipment	per court	6,000,000 to 10,500,000
Covered court approximately 975m ² including metal viewing seats, built-in furnitures, provision for T&B, etc	per court	20,000,000 to 40,000,000

* includes provision for forward/rear fold ceiling mounted basketball goal.

UNIT COSTS FOR ANCILLARY FACILITIES FOR PHILIPPINES

DESCRIPTION	UNIT	PESO
PLAYGROUND EQUIPMENT		
Outdoor playground equipment comprising various activities and safety mat	per set	1,850,000 to 6,200,000
SAUNAS		
Sauna room for 4-6 people complete with all accessories (enclosing structure not included)	per room	3,600,000
STEAM BATHS		
Steam bath for 4-6 people complete with all accessories (enclosing structure not included)	per room	6,000,000
GOLF COURSES		
(Based on 'Average Cost Model' of an 18-hole golf course in Asia) excluding fairway construction and rough hydroseeding		
Par 3	per hole	21,022,000 to 29,337,000
Par 4	per hole	43,960,000 to 79,323,000
Par 5	per hole	93,026,000 to 119,146,000
including fairway construction and rough hydroseeding		
Par 3	per hole	22,166,000 to 31,438,000
Par 4	per hole	52,168,000 to 95,426,000
Par 5	per hole	110,000,000 to 144,818,000
Inclusions:		
Rough and final shaping, topsoil, grassing, fertilizer, necessary fillings to bed (i.e., washed gravel, sand, greens mix), cart paths, irrigation and drainage, sand capping, sodding, and landscaping within the courses.		
Exclusions:		
Bulk cut and fill, related works during excavation, vertical structures / assets (i.e., clubhouse, halfway house, tee house, rain shelter/shed), fumigation, water supply, nursery, and lake development / water hazard.		

Construction Cost Data

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	US\$ / m ² CFA		SINGAPORE
	MANILA	HONG KONG	
DOMESTIC			
Apartments, high rise, average standard	983 - 1,315	3,270 - 3,750	1,890 - 2,185
Apartments, high rise, high end	1,305 - 2,352	4,230 - 4,880	3,150 - 4,335
Terraced houses, average standard	866 - 1,060	4,510 - 5,170	2,445 - 2,740
Detached houses, high end	1,682 - 2,864	6,530 up	3,110 - 4,150
OFFICE / COMMERCIAL			
Medium/high rise offices, average standard	884 - 1,173	3,270 - 3,690	2,445 - 2,780 [#]
High rise offices, prestige quality	1,280 - 1,660	3,880 - 4,430	2,780 - 3,000 [#]
Out-of-town shopping centre, average standard	755 - 939	3,210 - 3,760	2,630 - 2,925
Retail malls, high end	1,029 - 1,456	4,150 - 4,810	2,925 - 3,185
HOTELS			
Budget hotels - 3-star, mid market	1,123 - 1,388	4,110 - 4,370	3,110 - 3,405
Business hotels - 4/5-star	1,281 - 2,132	4,240 - 4,880	4,000 - 4,665
Luxury hotels - 5-star	1,780 - 3,378	4,930 - 5,510	4,000 - 4,665

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

INDUSTRIAL											
OTHERS											
Industrial units, shell only (Conventional single-storey framed units)	502 - 646	Underground/basement car parks (<3 levels)	585 - 761	3,560 - 4,240	1,370 - 1,780						
Owner-operated factories, low rise, light weight industry	674 - 847	Multi-storey car parks, above ground (<4 levels)	463 - 722	2,150 - 2,520	850 - 1,260 ^a						
		Schools (primary and secondary)	659 - 910	2,750 - 2,960	-						
		Students' residences	738 - 935	3,120 - 3,510	2,295 - 2,405						
		Sports clubs, multi purpose sports/leisure centres (dry sports) with a/c and including FF&E	1,111 - 1,618	4,100 - 4,610	2,815 - 3,000						
		General hospitals - public sector	1,338 - 1,564	5,120 - 5,630	3,965 - 4,150						
		Exchange Rate Used : US\$1 = PHP 55.567		HK\$ 7.81	\$1.35						

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

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 screed floor, painted wall and ceiling

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

Manila

Rates are exclusive of contingencies & include 12% VAT.

Costs are at January 2024 levels.

(i) Tenant's fit-out

(ii) Open on all sides with parapet

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)

^a Open on all sides with parapet

Construction Cost Data

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES (Cont'd)

BUILDING TYPE	US\$ / m ² CFA		MACAU
	KUALA LUMPUR	BANGKOK	
DOMESTIC			
Apartments, high rise, average standard	310 - 610 [#]	698 - 866	2,480 - 3,033
Apartments, high rise, high end	700 - 1,460	1,117 - 1,536	3,463 - 5,291
Terraced houses, average standard	220 - 360 [^]	559 - 698	4,224 - 5,041
Detached houses, high end	745 - 1,015	698 - 977	5,153 - 6,704
OFFICE / COMMERCIAL			
Medium/high rise offices, average standard	590 - 775*	698 - 838	2,854 - 3,685
High rise offices, prestige quality	920 - 1,320**	977 - 1,257	3,685 - 4,031
Out-of-town shopping centre, average standard	430 - 645	670 - 894	2,687 - 4,031
Retail malls, high end	680 - 1,035	894 - 1,061	4,224 - 5,098
HOTELS			
Budget hotels - 3-star, mid market	990 - 1,455	1,173 - 1,257	3,755 - 4,253
Business hotels - 4/5-star	1,290 - 2,265	1,536 - 1,815	5,098 - 6,094
Luxury hotels - 5 star	1,895 - 2,540	1,955 - 2,234	6,094 - 7,203

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

INDUSTRIAL		OTHERS			
Industrial units, shell only (Conventional single storey framed units)	320 - 450	503 - 535	670	2,229 - 3,269	3,269
Owner operated factories, low rise, light weight industry	420 -			1,232 - 1,622	1,622
				2,466 - 2,854	2,854
				1,953 - 2,271	2,271
				MOP 8.01	MOP 8.01
				BAHT 35.81	BAHT 35.81
				RM 4.67	RM 4.67

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

Kuala Lumpur

6 - 12 units per floor, 46m² - 83m² per unit; excluding air-conditioning, kitchen cabinets, and home appliances

[^]Excluding air-conditioning, kitchen cabinets, and home appliances

* Excluding tenant fit-out and raised floor
** Excluding tenant fit-out.

+ Schools with standard government provisions
[^]Student hostels to university standard

Bangkok
Rates exclude VAT and contingencies.

Macau
Rates are exclusive of contingencies and any management contract fee.

1 Construction Cost Data

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES (Cont'd)

BUILDING TYPE	US\$ / m ² CFA		
	JAKARTA	BANGALORE	HO CHI MINH
DOMESTIC			
Apartments, high rise, average standard	880 - 997	693 - 841	573 - 710
Apartments, high rise, high end	1,211 - 1,367	1,118 - 1,410	900 - 1,213
Terraced houses, average standard	464 - 605	493 - 551	567 - 659
Detached houses, high end	1,267 - 1,417	624 - 701	823 - 925
OFFICE / COMMERCIAL			
Medium/high rise offices, average standard	867 - 962 ^a	517 - 574 ^a	745 - 852
High rise offices, prestige quality	1,364 - 1,509 ^a	600 - 761 ^a	859 - 1,157
Out-of-town shopping centre, average standard	747 - 828	527 - 585	628 - 768
Retail malls, high end	822 - 892	684 - 806	785 - 959
HOTELS			
Budget hotels - 3-star, mid market	1,514 - 1,787	1,002 - 1,080	1,185 - 1,433
Business hotels - 4/5-star	2,061 - 2,226	1,421 - 1,811	1,365 - 1,652
Luxury hotels - 5-star	2,183 - 2,399	1,952 - 2,281	1,766 - 2,096

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

INDUSTRIAL		OTHERS			
Industrial units, shell only (Conventional single storey framed units)	414 - 450	Underground/basement car parks (<3 levels)	621 - 764	339 - 395	630 - 743
Owner operated factories, low rise, light weight industry	447 - 494	Multi storey car parks, above ground (<4 levels)	401 - 526	280 - 332	406 - 440
		Schools (primary and secondary)	-	353 - 413	560 - 685
		Students' residences	-	366 - 451	534 - 678
		Sports clubs, multi purpose sports/leisure centres (dry sports) with a/c and including FF & E	1,267 - 1,901	682 - 770	1,077 - 1,317
		General hospitals - public sector	-	771 - 891	-
		Exchange Rate Used : US\$1 =	IDR 15,559	INR 82.98	VND 24,440

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

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.

Construction Cost Data

CONSTRUCTION COSTS FOR SELECTED ASIAN CITIES (Cont'd)

BUILDING TYPE	SHANGHAI	BEIJING	SHENZEN/ GUANGZHOU	US\$ / m ² CFA		CHONGQING/ CHENGDU
				DOMESTIC	OFFICE / COMMERCIAL	
Apartments, high rise, average standard	685 -	755	603 -	662	573 -	658 - 658
Apartments, high rise, high end	1,546 -	1,685	1,461 -	1,663	931 - 1,062	917 - 1,124
Terraced houses, average standard	946 -	1,030	863 -	935	868 - 1,038	775 - 910
Detached houses, high end	1,663 -	1,765	1,658 -	1,730	1,666 - 1,952	986 - 1,120
OFFICES						
Medium/high rise offices, average standard	878 -	1,160	860 -	1,158	817 - 933	891 - 1,024
High rise offices, prestige quality	1,128 -	1,543	1,397 -	1,902	1,195 - 1,502	1,123 - 1,493
Out-of-town shopping centre, average standard	-	-	-	-	-	-
Retail malls, high end	1,193 -	1,608	1,162 -	1,600	1,151 - 1,668	1,071 - 1,478
HOTELS						
Budget hotels - 3-star, mid market	961 -	1,171	951 -	1,171	1,044 - 1,184	972 - 1,188
Business hotels - 4/5-star	1,549 -	2,096	1,620 -	2,139	1,688 - 2,485	1,745 - 2,158
Luxury hotels - 5-star	2,094 -	2,503	2,062 -	2,655	2,272 - 2,582	2,148 - 2,554

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

INDUSTRIAL	Industrial units, shell only (Conventional single storey framed units)	270	-	331	265	-	324	306	-	376	439	-	546
OTHERS	Owner operated factories, low rise, light weight industry	418	-	524	513	-	588						
Underground/basement car parks (<3 levels)	718	-	1,001	735	-	807	540	-	883	419	-	580	
Multi storey car parks, above ground (<4 levels)	368	-	514	442	-	446	384	-	436	334	-	408	
Schools (primary and secondary)	549	-	692	511	-	660	434	-	564	442	-	487	
Students' residences	402	-	548	362	-	511	400	-	510	310	-	443	
Sports clubs, multi purpose sports/leisure centres (dry sports)	926	-	1,137	876	-	883	742	-	841	698	-	765	
General hospitals - public sector	1,414	-	1,823	1,151	-	1,442	1,124	-	1,448	1,116	-	1,382	
Exchange Rate Used : US\$1 =		RMB 7.20			RMB 7.20		RMB 7.20			RMB 7.20			RMB 7.20

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

Beijing, Shanghai, Guangzhou/Shenzhen, Chongqing/Chengdu
Rates are exclusive of contingencies.

1 Construction Cost Data

M&E COSTS FOR SELECTED ASIAN CITIES

BUILDING TYPE	MANILA ^a		HONG KONG		SINGAPORE ^c	
	(PHP/m ²)	(HK\$/m ²)	(HK\$/m ²)	(S\$/m ²)	(S\$/m ²)	
MECHANICAL SERVICES						
Offices	4,000 - 8,600	8,600	2,100 - 2,700	215 - 332	332	
Industrial *	800 - 1,600	1,600	350 - 500	41 - 153	153	
Hotels	3,500 - 13,050	13,050	2,450 - 2,900	277 - 361	361	
Shopping Centres	3,000 - 7,020	7,020	2,200 - 2,650	188 - 314	314	
Apartment	1,540 - 5,510	5,510	950 - 1,600	117 - 220	220	
ELECTRICAL SERVICES						
Offices	3,500 - 8,712	8,712	2,350 - 2,900	199 - 361	361	
Industrial **	2,000 - 3,500	3,500	850 - 1,000	68 - 173	173	
Hotels	4,900 - 10,200	10,200	2,500 - 2,700	355 - 471	471	
Shopping Centres	3,060 - 6,800	6,800	1,950 - 2,850	205 - 393	393	
Apartment	3,957 - 6,700	6,700	1,200 - 1,750	137 - 299	299	
HYDRAULIC SERVICES						
Offices	1,260 - 2,410	2,410	700 - 850	34 - 72	72	
Industrial	820 - 1,440	1,440	500 - 650	23 - 47	47	
Hotels	2,310 - 7,010	7,010	1,900 - 2,500	155 - 218	218	

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

FIRE SERVICES		LIFTS / ESCALATORS	
Shopping Centres		Offices	1,190 - 2,070
Apartment		Industrial	1,080 - 3,000
		Hotels	1,320 - 2,630
		Shopping Centres	1,310 - 2,080
		Apartment	1,140 - 1,810
		Offices	1,800 - 4,930
		Industrial	0 - 730
		Hotels	1,800 - 3,500
		Shopping Centres	1,600 - 2,300
		Apartment	850 - 4,760

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

Manila
Transformer, included in Electrical Services
Costs are at January 2024 levels.

* Generally without A/C
** Excluding special power supply

Source of data: **Singapore - Asia Infrastructure Solutions Singapore Pte. Ltd.**

Construction Cost Data

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

BUILDING TYPE	KUALA LUMPUR (RM/m ²)	BANGKOK# (BAHT/m ²)	MACAU (MOP/m ²)
	MECHANICAL SERVICES		
Offices	400 - 570	3,450 - 3,900	N/A
Industrial *	110 - 210	1,550 - 1,700	N/A
Hotels	380 - 680	3,800 - 5,200	2,610 - 3,010
Shopping Centres	380 - 550	2,800 - 3,200	2,370 - 2,960
Apartment	150 - 230	2,800 - 3,400	910 - 1,210
ELECTRICAL SERVICES			
Offices	370 - 530	4,400 - 4,900	N/A
Industrial **	190 - 220	1,950 - 2,200	N/A
Hotels	380 - 610	4,600 - 5,800	2,610 - 3,110
Shopping Centres	370 - 520	4,600 - 4,800	2,610 - 2,960
Apartment	140 - 240	4,300 - 4,500	1,010 - 1,300
HYDRAULIC SERVICES			
Offices	60 - 80	990	N/A
Industrial	60 - 70	790	N/A
Hotels	220 - 310	1,400 - 1,820	1,800 - 2,210

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

FIRE SERVICES		LIFTS / ESCALATORS	
Shopping Centres	50 - 55	790 - 990	600 - 800
Apartment	70 - 110	1,200 - 1,520	1,500 - 2,000
Offices	80 - 100	780 - 890	N/A
Industrial	70 - 80	730 - 790	N/A
Hotels	80 - 110	780 - 930	920 - 1,130
Shopping Centres	70 - 90	780 - 890	610 - 820
Apartment	30 - 40	750 - 930	250 - 300
Offices	170 - 400	1,100 - 1,400	N/A
Industrial	70 - 190	N/A	N/A
Hotels	140 - 330	1,100 - 1,400	610 - 820
Shopping Centres	120 - 130	500 - 700	460 - 720
Apartment	80 - 120	600 - 800	460 - 610

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

Bangkok
Based upon nett enclosed area and nett of VAT

* Generally without A/C
** Excluding special power supply

Source of data: **Kuala Lumpur - JUBM Group, Bangkok - Membuild Limited.**

Construction Cost Data

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

BUILDING TYPE	JAKARTA ^a (IDR'000/m ²)	INDIA ^a (INR/m ²)	HO CHI MINH (VND'000/m ²)
	MECHANICAL SERVICES		
Offices	1,062 - 1,222	6,004 - 8,334	2,834,000 - 4,028,000
Industrial *	481 - 768	2,819 - 5,319	N/A
Hotels	1,095 - 1,421	6,955 - 8,340	N/A
Shopping Centres	934 - 1,123	6,127 - 8,494	3,188,000 - 3,228,000
Apartment	1,045 - 1,327	3,161 - 4,486	2,105,000 - 2,889,000
ELECTRICAL SERVICES			
Offices	858 - 1,095	5,394 - 8,203	2,881,000 - 3,450,000
Industrial **	608 - 757	3,175 - 5,830	N/A
Hotels	884 - 1,217	5,982 - 9,026	N/A
Shopping Centres	746 - 940	5,142 - 7,611	2,612,000 - 3,265,000
Apartment	984 - 1,149	2,720 - 3,942	2,423,000 - 3,061,000
HYDRAULIC SERVICES			
Offices	216 - 304	891 - 1,519	426,000 - 795,000
Industrial	144 - 221	617 - 1,186	N/A
Hotels	1,034 - 1,217	4,690 - 7,805	N/A

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

FIRE SERVICES											
Shopping Centres	205 -	315		1,336 -	2,671	350,000	-	630,000			
Apartment	1,045 -	1,237		2,116 -	3,237	850,000	-	985,000			
LIFTS / ESCALATORS											
Offices	741 -	923		1,410 -	2,032	819,000	-	1,349,000			
Industrial	155 -	221		645 -	980	N/A					
Hotels	343 -	426		1,639 -	2,315	N/A					
Shopping Centres	287 -	336		1,349 -	1,722	748,000	-	916,000			
Apartment	326 -	355		754 -	991	659,000	-	817,000			
India											
Rates are based on projects in Bangalore and are nett of GST. Mumbai costs are generally 8% higher.											

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

* Generally without A/C
** Excluding special power supply

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

Source of data: **Jakarta** - PT Lanterra Sejahtera Indonesia, **India** - Arkkind LS Private Limited.

Construction Cost Data

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

	BUILDING TYPE	SHANG HAI (RMB/m ²)	BEIJING (RMB/m ²)	SHENZEN / GUANGZHOU (RMB/m ²)	CHONGQING / CHENGDU (RMB/m ²)
MECHANICAL SERVICES					
Offices	797 -	982	782 - 1,212	752 - 1,116	753 - 1,017
Industrial *	176 -	289	169 - 277	152 - 279	145 - 236
Hotels	1,007 -	1,276	960 - 1,211	1,038 - 1,323	973 - 1,331
Shopping Centres	780 -	917	798 - 979	700 - 892	890 - 1,014
Apartment	319 -	410	141 - 455	149 - 402	150 - 296
ELECTRICAL SERVICES					
Offices	625 -	684	494 - 893	514 - 771	503 - 713
Industrial **	314 -	430	335 - 473	313 - 450	279 - 377
Hotels	682 -	844	755 - 991	700 - 931	625 - 875
Shopping Centres	544 -	662	505 - 725	485 - 676	557 - 711
Apartment	264 -	375	266 - 417	279 - 490	240 - 354
HYDRAULIC SERVICES					
Offices	112 -	160	98 - 144	103 - 179	90 - 124
Industrial	90 -	126	96 - 141	87 - 121	93 - 127
Hotels	377 -	503	380 - 485	382 - 490	368 - 489

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

Shopping Centres	141	-	183		141	-	206		112	-	165		106	-	155
Apartment	172	-	225		172	-	231		147	-	275		103	-	181
FIRE SERVICES															
Offices	233	-	318		186	-	273		230	-	340		244	-	294
Industrial	162	-	261		152	-	227		140	-	267		136	-	235
Hotels	297	-	387		225	-	379		279	-	416		280	-	375
Shopping Centres	265	-	383		221	-	387		243	-	375		267	-	379
Apartment	58	-	105		71	-	136		79	-	300		62	-	114
LIFTS / ESCALATORS															
Offices	279	-	538		291	-	571		283	-	496		305	-	561
Industrial	135	-	382		143	-	396		146	-	427		153	-	355
Hotels	219	-	484		229	-	515		243	-	466		254	-	437
Shopping Centres	325	-	484		323	-	515		291	-	456		309	-	461
Apartment	165	-	285		173	-	286		126	-	437		142	-	246

The above costs are at 4th Quarter 2023 levels inclusive of preliminaries unless otherwise stated

Generally without A/C

1 Construction Cost Data

MAJOR RATES FOR SELECTED ASIAN CITIES

DESCRIPTION	UNIT	MANILA (PHP)	HONG KONG (HK\$)	SINGAPORE (S\$)
1. Excavating basement ≤ 2.00m deep	m ³	300 - 450	230	30
2. Excavating for footings ≤ 1.50m deep	m ³	538	210	30
3. Remove excavated materials off site	m ³	350 - 700	290	30 - 37
4. Hardcore bed blinded with fine materials	m ³	1,400 - 1,800	950	69.5
5. Mass concrete grade 15	m ³	4,500	1,200	268 - 282
6. Reinforced concrete grade 30	m ³	6,500 - 7,500	1,300	184 - 191
7. Mild steel rod reinforcement	kg	54 - 56	12.50	1.90 - 2.00
8. High tensile rod reinforcement	kg	54 - 56	12.50	1.90 - 2.00
9. Sawn formwork to soffits of suspended slabs	m ²	950 - 1,200	430	56
10. Sawn formwork to columns and walls	m ²	1,200	430	56
11. 112.5mm thick brick walls	m ²	N/A	440	45 - 50
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m ²	1,500	1,200	56

CONSTRUCTION COST HANDBOOK

PHILIPPINES 2024

13. Aluminium casement windows, single glazed	m ²	16,000	4,400	380
14. Structural steelwork - beams, stanchions and the like	kg	180	35	6.60 - 7.40
15. Steelwork - angles, channels, flats and the like	kg	160	43	6.60 - 7.40
16. 25mm cement and sand (1:3) paving	m ²	450 - 700	170	29.50
17. 20mm cement and sand (1:4) plaster to walls	m ²	500 - 700	175	30.50
18. Ceramic tiles bedded to floor screed (measured separately)	m ²	1,800 - 2,200	430	86
19. 12mm fibrous plasterboard ceiling lining	m ²	1,400 - 1,700	580	38.80
20. Two coats of emulsion paint to plastered surfaces	m ²	500 - 800	150	5.00 - 5.50
Average expected preliminaries	%	12 - 18	10 - 15	14 - 18

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

Singapore

Rates are nett of GST.

Item 5 - Rate for lean concrete blinding

Manila

Item 13 - Aluminium with powder coat finish; 6mm thick

Costs are at January 2024 levels

Hong Kong

Item 3 -Rate including dumping charges

Source of data:**Jakarta** - PT Lantera Sejahtera Indonesia. **India** - Arkind LS Private Limited.

Construction Cost Data

MAJOR RATES FOR SELECTED ASIAN CITIES (Cont'd)

DESCRIPTION	UNIT	KUALA LUMPUR (RM)	BANGKOK (BAHT)	BANGKOK (MOP)	MACAU (MOP)
		(MOP)	(MOP)	(MOP)	(MOP)
1. Excavating basement ≤ 2.00m deep	m ³	20 - 36	125 - 160	150	150
2. Excavating for footings ≤ 1.50m deep	m ³	20 - 36	150 - 190	180	180
3. Remove excavated materials off site	m ³	22 - 39	125 - 160	150	150
4. Hardcore bed blinded with fine materials	m ³	73 - 110	680 - 790	1,300	1,300
5. Mass concrete grade 15	m ³	270 - 340	2,300 - 2,700	1,500	1,500
6. Reinforced concrete grade 30	m ³	310 - 360	2,800 - 3,470	1,400	1,400
7. Mild steel rod reinforcement	kg	4.20 - 5.30	28 - 31	7.50	7.50
8. High tensile rod reinforcement	kg	4.20 - 5.30	28 - 31	7.50	7.50
9. Sawn formwork to soffits of suspended slabs	m ²	42 - 54	450 - 500	280	280
10. Sawn formwork to columns and walls	m ²	42 - 54	450 - 500	280	280
11. 112.5mm thick brick walls	m ²	52 - 63	650 - 890	450	450
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m ²	85 - 120	1,200	N/A	N/A

CONSTRUCTION COST HANDBOOK

PHILIPPINES 2024

13. Aluminium casement windows, single glazed	m ²	400 - 680	7,600	4,000
14. Structural steelwork - beams, stanchions and the like	kg	7.60 - 15	55 - 80	30
15. Steelwork - angles, channels, flats and the like	kg	7.60 - 15	55 - 80	40
16. 25mm cement and sand (1:3) paving	m ²	21 - 27	220 - 275	120
17. 20mm cement and sand (1:4) plaster to walls	m ²	22 - 35	250 - 295	150
18. Ceramic tiles bedded to floor screed (measured separately)	m ²	73 - 130	1,200	450
19. 12mm fibrous plasterboard ceiling lining	m ²	42 - 55	850 - 950	650
20. Two coats of emulsion paint to plastered surfaces	m ²	3.60 - 5.60	140 - 180	200
Average expected preliminaries	%	6 - 15	12 - 18	10

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

Bangkok
Rates are nett of VAT.

Source of data: Kuala Lumpur - JUBM Group, Bangkok - MentaBuild Limited.

Construction Cost Data

MAJOR RATES FOR SELECTED ASIAN CITIES (Cont'd)

DESCRIPTION	UNIT	JAKARTA ^a	INDIA ^b	HO CHI MINH ^c (VND)
1. Excavating basement ≤ 2.00m deep	m ³	70	273	72,400
2. Excavating for footings ≤ 1.50m deep	m ³	100	259	72,400
3. Remove excavated materials off site	m ³	50	N/A	84,700
4. Hardcore bed blinded with fine materials	m ³	650	5,100 - 5,400	686,700
5. Mass concrete grade 15	m ³	1,100	6,900	1,847,360
6. Reinforced concrete grade 30	m ³	1,200	8,650	2,199,135
7. Mild steel rod reinforcement	kg	13.80	75.68	21,380
8. High tensile rod reinforcement	kg	14	70 - 73	21,380
9. Sawn formwork to soffits of suspended slabs	m ²	250	722 - 765	240,000
10. Sawn formwork to columns and walls	m ²	220	816 - 842	290,000
11. 112.5mm thick brick walls	m ²	275	1,297 - 1,340	318,840
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m ²	370	1,972 - 2,019	465,000 - 655,000

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

13. Aluminium casement windows, single glazed	m²	1,750	6,654 - 7,050
14. Structural steelwork-beams, stanchions and the like	kg	40	47,200
15. Steelwork - angles, channels, flats and the like	kg	42	47,200
16. 25mm cement and sand (1:3) paving	m²	100	571 - 632
17. 20mm cement and sand (1:4) plaster to walls	m²	100	504 - 540
18. Ceramic tiles bedded to floor screed (measured separately)	m²	250	1,918 - 1,974
19. 12mm fibrous plasterboard ceiling lining	m²	220	1,570 - 1,741
20. Two coats of emulsion paint to plastered surfaces	m²	35	225 - 250
Average expected preliminaries	%	8-10	9 - 13
			8 - 12

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

Jakarta
Rates exclude VAT and contingencies.

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

Source of data: **Jakarta** - PT Lanterra Sejahtera Indonesia. **India** - Arkind LS Private Limited.

Ho Chi Minh
Rates are nett of VAT.

1 Construction Cost Data

MAJOR RATES FOR SELECTED ASIAN CITIES (Cont'd)

DESCRIPTION	UNIT	RMB SHANG HAI	RMB BEIJING	RMB SHENZEN / GUANGZHOU	RMB CHONGQING / CHENGDU
1. Excavating basement ≤ 2.00m deep	m ³	30	35	39	36
2. Excavating for footings ≤ 1.50m deep	m ³	30	40	39	36
3. Remove excavated materials off site	m ³	220	160	160	65
4. Hardcore bed blinded with fine materials	m ³	210	220	195	180
5. Mass concrete grade 15	m ³	650	625.60	590	500
6. Reinforced concrete grade 30	m ³	730	736	660	530
7. Mild steel rod reinforcement	kg	5.50	6	5.50	5.50
8. High tensile rod reinforcement	kg	5.50	6.10	5.40	5.50
9. Sawn formwork to soffits of suspended slabs	m ²	95	90	90	75
10. Sawn formwork to columns and walls	m ²	90	85	70	75
11. 112.5mm thick brick walls	m ²	105	80	80	80
12. "Kliplok Colorbond" 0.64mm profiled steel sheeting	m ²	N/A	N/A	N/A	N/A

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

13. Aluminium casement windows, single glazed	m ²	780	700	760
14. Structural steelwork-beams, stanchions and the like	kg	11	13	10
15. Steelwork-angles, channels, flats and the like	kg	9.5	11	9
16. 25mm cement and sand (1:3) paving	m ²	35	34	35
17. 20mm cement and sand (1:4) plaster to walls	m ²	35	34	34
18. Ceramic tiles bedded to floor screed (measured separately)	m ²	160	155	160
19. 12mm fibrous plasterboard ceiling lining	m ²	160	162	170
20. Two coats of emulsion paint to plastered surfaces	m ²	42	34	35
Average expected preliminaries	%	6 - 12	5 - 12	5 - 12

The above costs are at 4th Quarter 2023 Levels, inclusive of preliminaries unless otherwise stated.

Shanghai

Item 11- Rate for 120mm thick concrete block walls

Beijing, Chongqing/Chengdu

Item 13 - Rate for double glazed window

1 Construction Cost Data

M & E MAJOR PLANT COSTS FOR THE PHILIPPINES

DESCRIPTION	UNIT	COST (Php)
1. Water cooled chiller; conventional bearing	per TR	19,000 - 36,000
2. Water cooled chiller; magnetic bearing	per TR	37,000 - 50,000
3. Air-cooled chillers	per TR	34,500 - 48,000
4. Cooling Towers; induced draft	per GPM	2,900 - 5,320
5. Air Handling Units (AHU)	per TR	18,500 - 36,300
6. Packaged Water-Cooled Chiller Units (PWCU)	per TR	31,300 - 45,900
7. Fire Pumps; electric motor driven; up to 180 psi	per GPM	1,900 - 4,900
8. Fire Pumps; electric motor driven; 180 to 295 psi	per GPM	4,400 - 9,600
9. Fire Pumps; diesel engine driven; up to 180 psi	per GPM	2,500 - 5,400
10. Fire Pumps; diesel engine driven; 180 to 295 psi	per GPM	4,600 - 10,600
11. Air to Water Heat Pumps (KW based on heating capacity)	per KW	33,100 - 46,300
12. Water to Water Heat Pumps (KW based on heating capacity)	per KW	13,500 - 41,600
13. Generator (Low Voltage-400V) Standby Rating	per KVA	8,500 - 10,500
14. Generator (Low Voltage-400V) Prime Rating	per KVA	11,000 - 12,800
15. Generator (Medium Voltage-4160V) Continuous Rating	per KVA	14,500 - 15,000
16. Generator (Medium Voltage-4160V) Prime Rating	per KVA	11,000 - 12,600
17. Power transformers, with built-in primary protections; padmount	per KVA	2,500 - 5,000

Notes:

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.

M & E MAJOR PLANT COSTS FOR THE PHILIPPINES

DESCRIPTION	UNIT	COST (Php)
18. Power transformers, with built-in primary protections; silicon oil filled	per KVA	1,300 - 4,400
19. Power transformers, with built-in primary protections; cast resin	per KVA	2,000 - 6,000
20. Hot Water Storage Tank with Heating Coil	per Gallon	3,000 - 5,700
21. Sewage Treatment Plant, Sequencing Batch Reactor (SBR); including civil works (no piling and located within the building)	per m3/day	30,000 - 40,000
22. Kitchen Waste Water Treatment; Gas Energy Mixing (GEM); including civil works (no piling and located within the building)	per m3/day	93,000 - 111,000
23. Desalination System; Reverse Osmosis up to 200 CMD	per m3/day	68,000 - 101,000
24. Desalination System; Reverse Osmosis 200 CMD to 600 CMD	per m3/day	35,000 - 74,000
25. Elevator; 1000 kgs, 1 to 2 mps (no skip floors; less than 10 floors)	cost/stop	550,000 - 1,400,000
26. Elevator; 1350 kgs, 2.5 to 3 mps (no skip floors; 10 to 20 floors)	cost/stop	885,000 - 1,155,000
27. Elevator; 1350 kgs, 2.5 to 3 mps (no skip floors; 20 to 30 floors)	cost/stop	700,000 - 885,000
28. Elevator; 1350 kgs, 2.5 to 3 mps (no skip floors; 30 to 40 floors)	cost/stop	550,000 - 744,000
29. Elevator; 1600 kgs, 4 mps (no skip floors; 20 to 30 floors)	cost/stop	760,000 - 1,085,000
30. Elevator; 1600 kgs, 4 mps (no skip floors; 30 floors to 40 floors)	cost/stop	660,000 - 881,900
31. 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 January 2024.

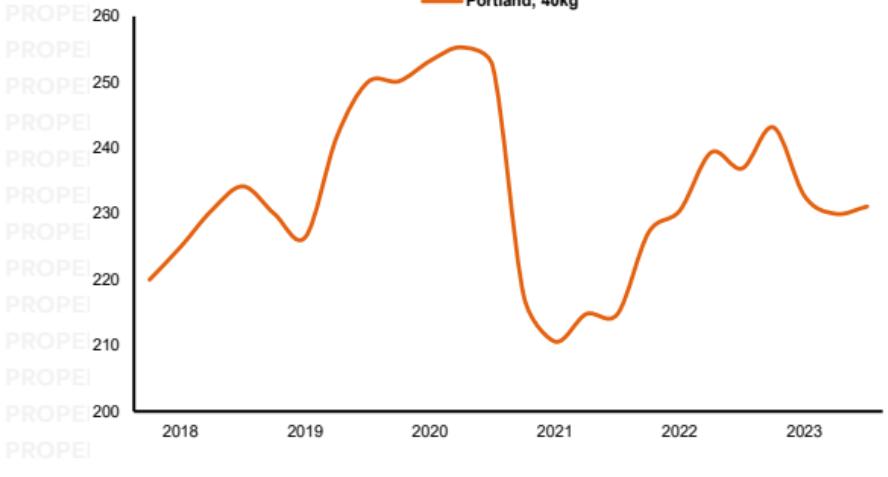
5. The cost per unit of the equipment is higher at lower capacity.

1 Construction Cost Data

RETAIL PRICES OF BASIC CONSTRUCTION MATERIALS FOR PHILIPPINES

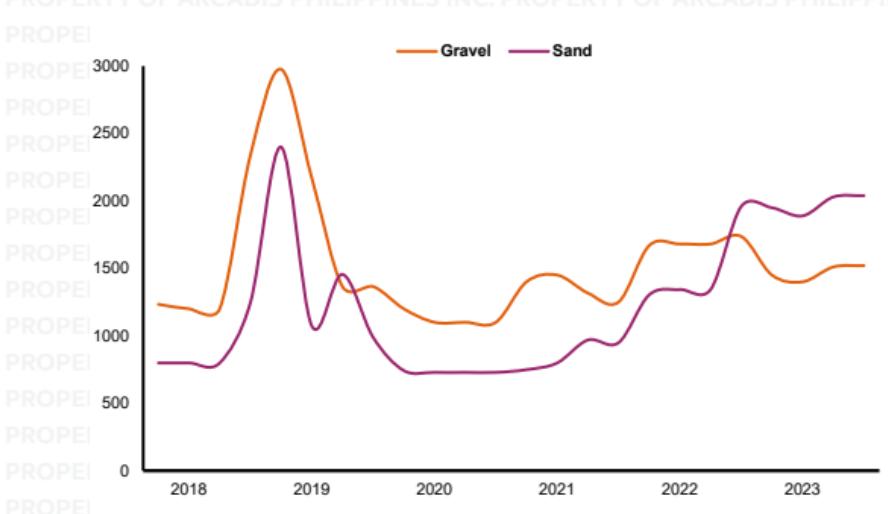
Cement

Php / bag (40 kg)



Aggregates

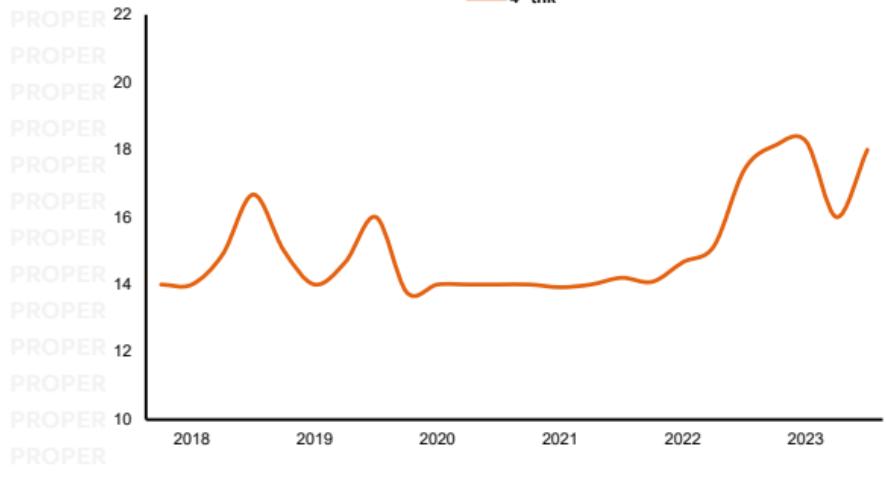
Php / m³



RETAIL PRICES OF BASIC CONSTRUCTION MATERIALS FOR PHILIPPINES

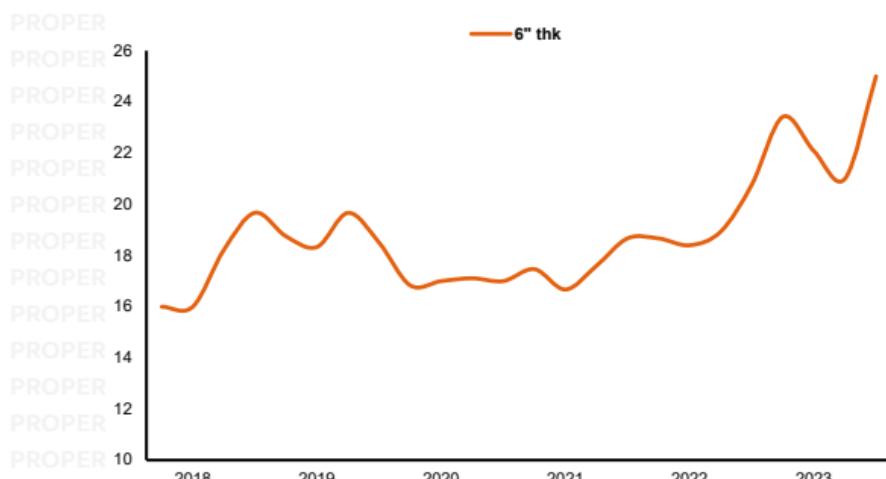
Ordinary Concrete Hollow blocks 4" thick

Php / piece



Ordinary Concrete Hollow blocks 6" thick

Php / piece



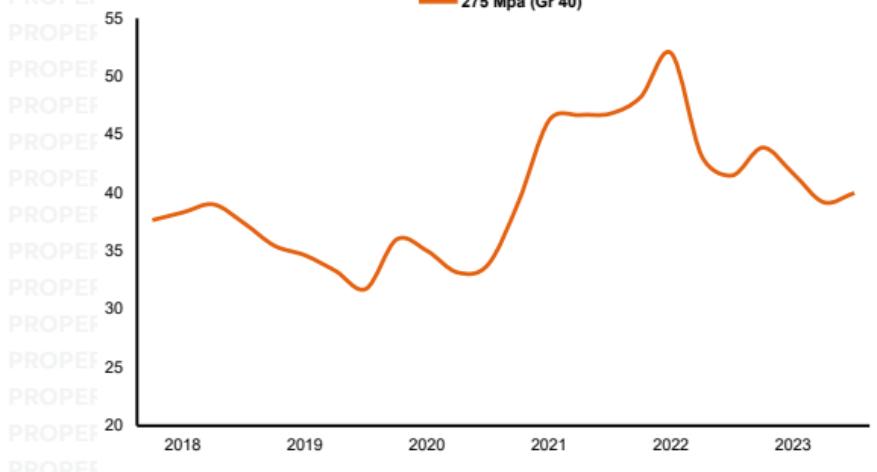
1 Construction Cost Data

RETAIL PRICES OF BASIC CONSTRUCTION MATERIALS FOR PHILIPPINES

Reinforcing Bar

(Intermediate Grade - Grade 40; 275MPa)

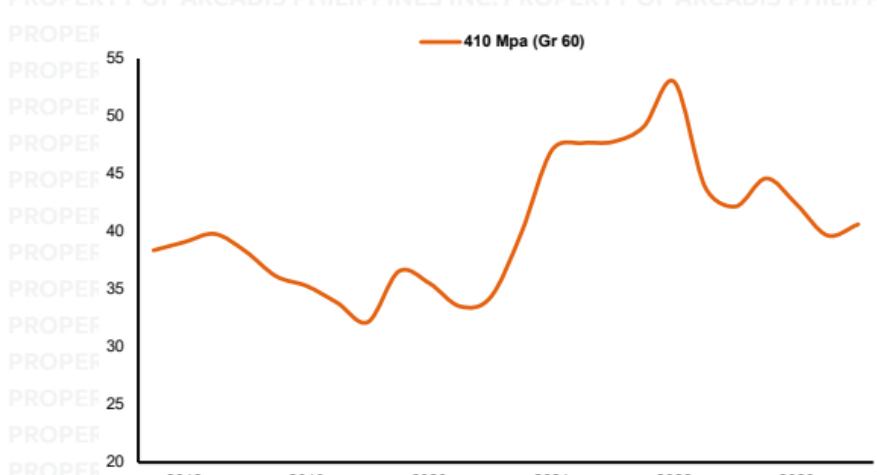
Php / kg



Reinforcing Bar

(High Yield Grade - Grade 60; 400MPa)

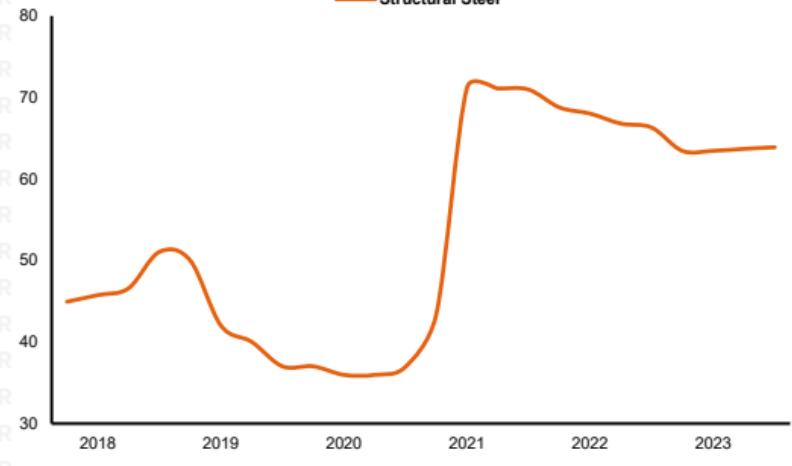
Php / kg



RETAIL PRICES OF BASIC CONSTRUCTION MATERIALS FOR PHILIPPINES

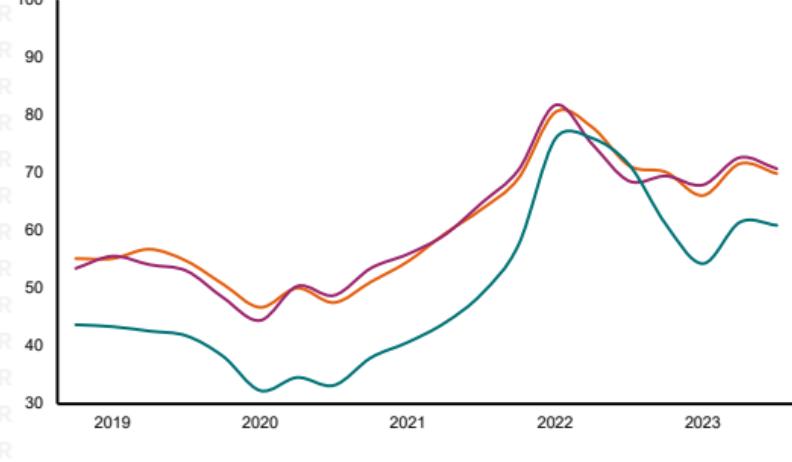
Structural Steel Wide Flange

Php / kg



Fuel

Php / liter





The Farm at San Benito
Owner: *The Farm at San Benito*
Architect: *Skala Architect*

2 GENERAL CONSTRUCTION DATA

Economic Highlights 2023

Trends in Construction Costs for Philippines 2023

Construction Value

Construction Activity

Construction Materials Wholesale Price Index (CMWPI) for NCR - For the Year

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

Minimum Wage

Estimating Rules of Thumb

Embodied Carbon

Utility Costs for Selected Asian Countries

Lead Time of Different Packages

Progress Payment

Tender Price Index

LEED Certification Cost Premium

Construction Permits

2 General Construction Data

ECONOMIC HIGHLIGHTS 2023

GDP EXPANDS BY 5.6 PERCENT IN THE FOURTH QUARTER OF 2023, BRINGS THE FULL-YEAR 2023 GDP GROWTH RATE TO 5.6 PERCENT

The Philippine Gross Domestic Product (GDP) posted an annual growth of 5.6 percent in the fourth quarter of 2023, which brought the 2023 full-year GDP growth to 5.6 percent.

The main contributors to the fourth quarter 2023 annual growth were: Financial and insurance activities, 11.8 percent; Wholesale and retail trade; repair of motor vehicles and motorcycles, 5.2 percent; and Construction, 8.5 percent.

Moreover, for the whole 2023, the industries that contributed the most to the annual growth were: Wholesale and retail trade; repair of motor vehicles and motorcycles, 5.5 percent; Financial and insurance activities, 8.9 percent; and Construction, 8.8 percent.

All major economic sectors, namely: Agriculture, forestry, and fishing (AFF); Industry; and Services posted year-on-year growths in the fourth quarter of 2023 at 1.4 percent, 3.2 percent, and 7.4 percent, respectively. For the full year of 2023, AFF, Industry, and Services also posted growths of 1.2 percent, 3.6 percent, and 7.2 percent, respectively.

On the demand side, Household final consumption expenditure (HFCE) grew year-on-year by 5.3 percent in the fourth quarter of 2023. Similarly, Gross capital

Source:

National Accounts of the Philippines
Philippine Statistics Authority (www.psa.gov.ph)

formation, and Imports of goods and services both

posted annual growths of 11.2 percent and 2.9

percent, respectively. Meanwhile, Government final

consumption expenditure (GFCE) and Exports of

goods and services posted annual declines of 1.8

percent and 2.6 percent, respectively. For the whole

2023, HFCE grew by 5.6 percent; GFCE, 0.4 percent;

Gross capital formation, 5.4 percent; Exports of

goods and services, 1.3 percent; and Imports of

goods and services, 1.6 percent.

The Gross National Income (GNI) grew year-on-

year by 11.1 percent in the fourth quarter of 2023

bringing the full-year 2023 growth to 10.5 percent.

Likewise, Net Primary Income (NPI) from the Rest of

the World grew year-on-year by 97.7 percent during

the fourth quarter of 2023 and 96.6 percent for the

annual 2023.

Source:

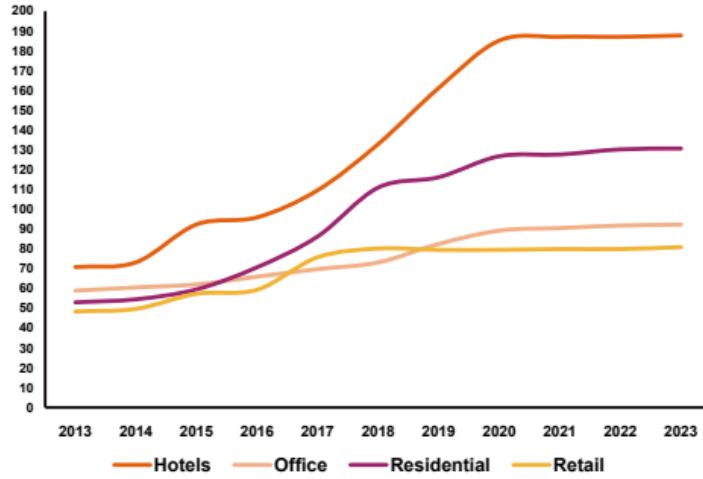
National Accounts of the Philippines

Philippine Statistics Authority (www.psa.gov.ph)

2 General Construction Data

TRENDS IN CONSTRUCTION COSTS FOR PHILIPPINES

Php / m² (Thousands)



Building Construction Cost (Php/m²)

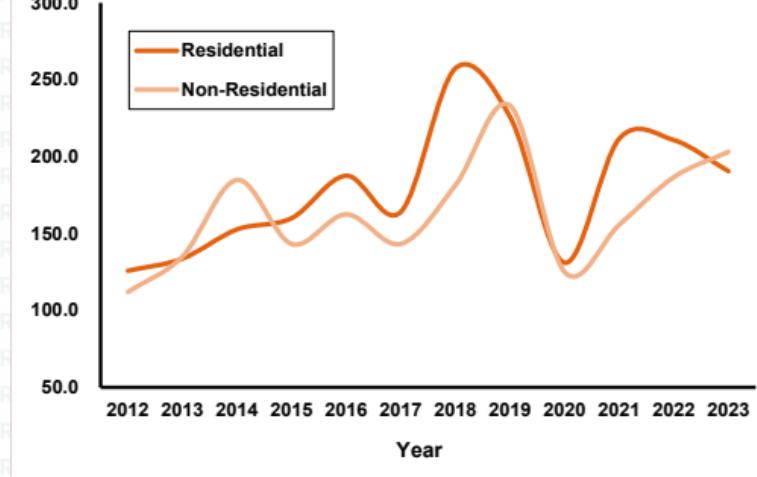
Year	Hotels	Office	Residential	Retail	US\$ to Php
2005	58,941	32,225	36,907	19,831	55.09
2006	61,577	34,894	37,973	22,322	51.31
2007	64,608	39,688	40,149	24,459	46.15
2008	62,042	41,806	40,917	23,572	44.47
2009	67,908	45,732	44,779	29,535	47.64
2010	70,822	48,042	46,914	33,156	45.11
2011	69,301	46,738	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	132,914	73,197	110,955	80,201	52.66
2019	161,217	82,497	116,191	79,537	51.05
2020	185,130	89,213	126,773	79,561	48.94
2021	186,990	90,503	127,643	79,951	50.77
2022	186,990	91,765	130,235	79,951	56.12
2023	187,700	92,250	130,680	80,935	55.57

Note:

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

CONSTRUCTION VALUE

Construction Value (Php Billions)

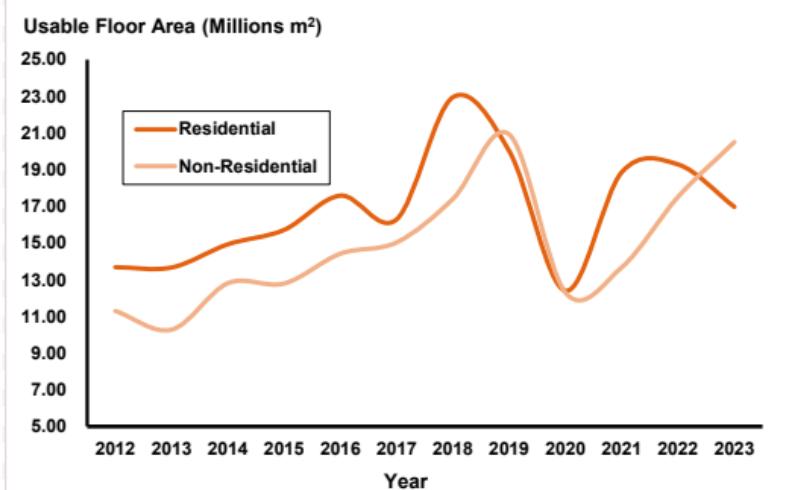


YEAR	Construction Value ('000)	
	Residential	Non-Residential
2009	80,108,885	51,295,024
2010	102,943,619	82,722,312
2011	100,220,969	89,952,721
2012	125,864,536	112,083,457
2013	133,783,612	135,163,094
2014	152,755,734	184,873,176
2015	160,065,906	143,221,467
2016	187,599,731	162,517,347
2017	164,153,250	143,315,470
2018	257,417,054	181,481,663
2019	225,818,368	233,185,922
2020	131,084,663	124,961,618
2021	211,657,593	155,698,797
2022	210,755,664	186,679,967
2023	190,552,312	203,118,641

*Forecast Source: www.psa.gov.ph

2 General Construction Data

CONSTRUCTION ACTIVITY



YEAR	Usable Floor Area (m ²)	
	Residential	Non-Residential
2009	10,059,645	5,918,411
2010	12,196,450	9,273,089
2011	11,674,389	8,875,138
2012	13,687,037	11,295,492
2013	13,672,027	10,278,621
2014	14,935,518	12,811,930
2015	15,723,803	12,793,261
2016	17,592,013	14,421,105
2017	16,301,228	15,035,707
2018	22,961,367	17,409,516
2019	20,011,536	20,916,613
2020	12,401,694	12,285,488
2021	18,874,688	13,681,466
2022	19,288,739	17,520,848
2023	16,976,547	20,504,369

* Forecast Source: www.psa.gov.ph

CONSTRUCTION COST HANDBOOK

PHILIPPINES 2024

CONSTRUCTION MATERIALS WHOLESALE PRICE INDEX IN THE NATIONAL CAPITAL REGION (NCR) 2023

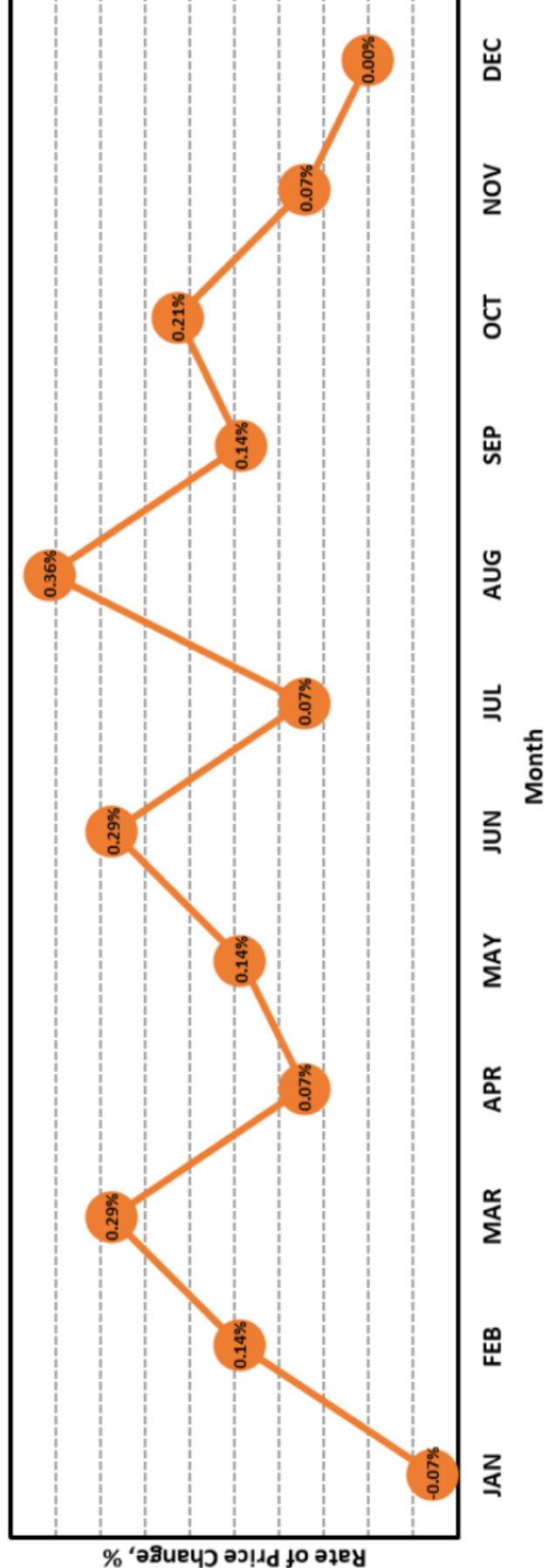
	2023												
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
ALL ITEMS	138.90	138.80	139.00	139.40	139.50	139.70	140.10	140.20	140.70	140.90	141.20	141.30	141.30
A. Sand and Gravel	149.30	149.00	149.20	148.80	148.90	150.50	150.60	150.60	150.60	150.60	151.20	151.20	151.20
B. Concrete Products & Cement	139.90	139.90	140.90	140.90	141.00	141.20	141.70	141.70	141.70	141.60	142.10	142.50	142.40
C. Hardware	134.40	134.30	134.50	136.20	136.60	136.80	137.70	138.10	140.10	140.40	140.30	140.40	140.60
D. Plywood	123.60	123.90	124.50	125.70	125.40	125.30	125.70	125.90	126.60	127.60	127.70	127.80	127.80
E. Lumber	147.00	147.30	147.30	147.30	147.50	147.60	148.30	148.30	148.30	148.30	148.30	148.30	148.70
F. G.I Sheet	146.30	145.20	145.20	145.90	145.90	145.90	148.20	150.10	150.60	150.60	150.70	150.70	150.70
G. Reinforcing & Structural Steel	141.10	140.80	140.30	140.90	141.00	140.90	140.90	140.60	141.90	141.90	141.90	141.90	141.90
H. Tile Works	140.50	141.20	139.90	137.10	137.50	138.70	138.90	139.60	140.00	140.00	140.40	140.40	140.70
I. Glass & Glass Products	130.70	130.70	130.70	130.40	130.40	130.40	130.40	130.40	130.40	130.40	130.40	130.40	130.40

2 General Construction Data

CONSTRUCTION MATERIALS WHOLESALE PRICE INDEX IN THE NATIONAL CAPITAL REGION (NCR) 2023 (Cont'd)

	2023												
	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
J. Doors, Jambs, and Steel Casement	119.90	119.70	119.70	120.00	120.00	120.00	120.10	120.60	121.00	122.30	122.30	122.40	
K. Electrical Works	146.00	146.30	147.20	147.80	148.10	149.60	149.80	149.90	151.70	151.80	152.30	152.60	
L. Plumbing Fixtures & Accessories / Waterworks	135.00	133.30	136.70	136.90	137.40	137.40	137.40	137.40	137.30	137.30	137.70	138.00	
M. Painting Works	123.10	123.30	123.50	125.70	126.20	126.40	126.40	126.70	127.10	127.60	128.50	128.60	
N. PVC Pipes	124.10	124.10	124.90	124.60	124.60	123.90	123.90	124.50	124.60	124.80	124.80	124.80	
O. Fuel and Lubricants	152.20	153.20	155.60	154.60	152.80	147.00	146.20	147.70	161.10	168.00	165.50	159.70	
P. Asphalt	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	104.20	
Q. Machinery and Equipment Rental	152.90	152.90	152.90	152.90	152.90	152.90	152.90	152.90	152.90	152.90	152.90	152.90	

Construction Materials Wholesale Price Index 2023
Monthly Price Movement (2012=100)



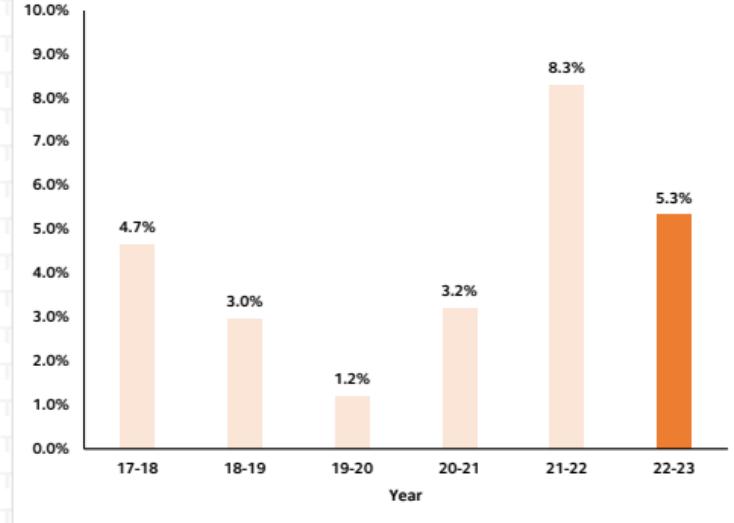
2 General Construction Data

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

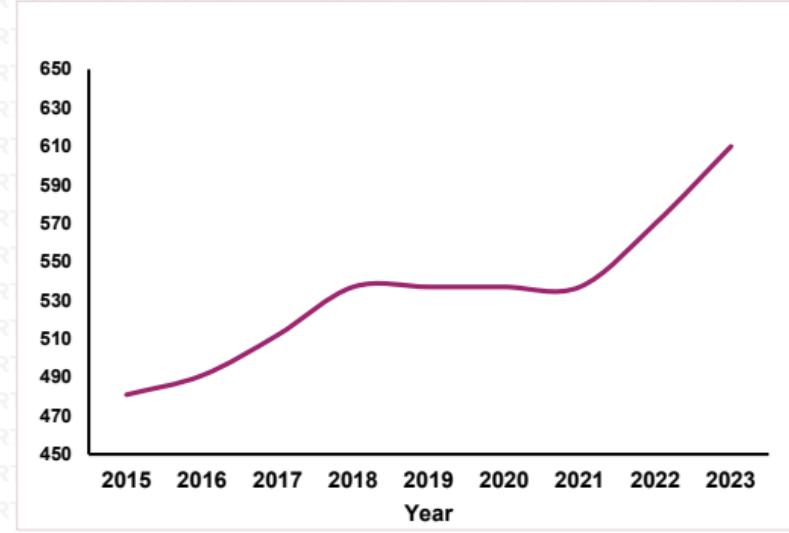
(2012=100)

Construction Materials Wholesale Price Index

Annual Average Price Movement (2012 = 100)



COMMODITY GROUP	2017 Ave.	2018 Ave.	2019 Ave.	2020 Ave.	2021 Ave.	2022 Ave.	2023 Ave.
ALL ITEMS	109.2	114.3	117.7	119.1	122.9	133.1	140.2
A. Sand & Gravel	116.7	120.7	131.5	133.8	138.3	145.4	150.2
B. Concrete Products & Cement	110.4	115.5	120.6	122.3	124.1	132.7	141.5
C. Hardware	107.7	113.9	115.8	120.4	123.0	130.1	138.0
D. Plywood	108.6	111.7	113.8	113.3	115.2	121.0	126.2
E. Lumber	111.9	120.6	127.0	131.8	135.0	141.7	148.0
F. G.I. Sheet	105.5	107.0	109.8	111.9	118.1	133.9	148.3
G. Reinforcing & Structural Steel	107.8	115.6	116.0	115.3	121.1	135.7	141.2
H. Tile Works	110.1	112.9	115.6	133.7	135.8	137.7	139.4
I. Glass & Glass Products	104.9	104.9	104.9	112.4	127.3	130.5	130.5
J. Doors, Jambs, & Steel Casement	106.6	109.7	109.9	110.0	111.8	115.9	120.7
K. Electric Works	109.7	117.0	123.3	125.3	130.4	141.5	150.0
L. Plumbing Fixtures & Accessories/Waterworks	117.9	119.4	124.6	125.0	124.0	132.9	137.1
M. Painting Works	103.9	104.7	104.9	105.7	107.5	115.6	126.6
N. PVC Pipes	106.4	107.1	109.5	115.8	118.5	125.5	124.5
O. Fuel & Lubricants	94.6	117.7	120.3	109.9	129.8	169.1	155.4
P. Asphalt	104.2	104.2	104.2	104.2	104.2	104.2	104.2
Q. Machinery and Equipment Rental	146.9	146.9	146.9	146.9	146.9	152.9	152.9

MINIMUM WAGE**Peso Day**

Year	NCR Wage Order No.	Amount of Increase	Peso per Day
08 January 1991	W.O. No. NCR 2	12.00	118.0
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
04 June 2022	W.O. No. NCR 23	33.00	570.00
16 July 2023	W.O. No. NCR 24	40.00	610.00

*Emergency Cost of Living Allowance (ECOLA)

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

2 General Construction Data

ESTIMATING RULES OF THUMB

Densities of Common Materials

Material	Density	Material	Density
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

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

Concrete	Ordinary Design Mix		Pumpcrete Design Mix	
	Psi	Mpa	1 1/2"	Gravel Size 3/4"
8,000	55		21	22
7,000	48		19	20
6,000	41		17	18
5,000	35		15	16
4,000	28		11.75	12.75
3,000	21		9	10

Bar Diameter (mm) Weight/m (kg/m) Perimeter (mm) Area (mm²)

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	1017.90
40	9.864	125.66	1256.64

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	to	0.55 m ³ /m ²
Formwork / floor area	2.0 m ³ /m ²	to	3.0 m ³ /m ²
Reinforcement	180 kg/m ³	to	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	0.50 m ² /m ²
Hotel	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 that the clearance between the floor and the lower-most projection from the ceiling including any lighting 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 footprints.

2 General Construction Data

ESTIMATING RULES OF THUMB

Average Loads

Lorry (24 ton)	10.0 m ³
Concrete Truck (24 ton)	5.5 m ³

Functional Area Distribution in 5-star Hotel

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

Dimensions of Typical Grade A Office Space

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

Average Lighting Level

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

ESTIMATING RULES OF THUMB

Average Power Density

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

Average Cooling Load

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

Indicative Dimensions for Sports Grounds

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

The above dimensions are for a single court with appropriate clearance.

No spectator seating or support area has been allowed.

2 General Construction Data

ESTIMATED EMBODIED CARBON FOR COMMONLY USED CONSTRUCTION MATERIALS

Description	Unit of Measurement	Embodied Carbon EC - kgCO2e
Concrete		
3,000 psi	m ³	222.46
5,000 psi	m ³	297.93
6,000 psi	m ³	328.83
7,000 psi	m ³	368.44
8,000 psi	m ³	421.08
9,000 psi	m ³	473.71
10,000 psi	m ³	526.34
12,000 psi	m ³	631.61
Reinforcement Steel Bar		
Grade 40	kg	1.99
Grade 60	kg	1.99
Grade 75	kg	1.99
Structural Steel	kg	2.76
Concrete Formworks	m ²	0.681
CHB Wall		
100mm thick	m ²	30.48
150mm thick	m ²	48.59
Mortar Topping (Cement and Sand)	m ²	8.82
Plaster / Render (Cement and Sand)	m ²	7.19
Drywall		
Gypsum Board	m ²	49.64
Painting		
Latex	m ²	2.12
Elastomeric	m ²	2.12
Enamel	m ²	3.13

ESTIMATED EMBODIED CARBON FOR COMMONLY USED CONSTRUCTION MATERIALS

Description	Unit of Measurement	Embodied Carbon EC - kgCO2e
Suspended Ceiling		
Gypsum Board	m ²	47.36
Ficem Board	m ²	50.41
Glass		
IGU Curtain Wall on aluminum framing; 6x12x6mm	m ²	825.24
Waterproofing		
Cementitious Capillary	m ²	1.51
Polyurethane	m ²	6.02
Metal Works		
Stair Nosing (1.8 x 14.7 x 33mm)		
- Brass	m	0.73
- Aluminum	m	1.16
Column Guards (angle bar)	m	32.98
Fire Exit Stair Railings (tubular steel)	m	59.27
Finishes including installation material		
Carpet Tiles	m ²	8.82
Ceramic Tiles	m ²	18.41
Porcelain Tiles	m ²	8.4
Marble	m ²	8.56
Granite	m ²	21.12
Pipes and Conduits		
Polyvinyl chloride (PVC) pipe series 1000		
- 50mm diameter	m	2.33
- 100mm diameter	m	6.1

2 General Construction Data

ESTIMATED EMBODIED CARBON FOR COMMONLY USED CONSTRUCTION MATERIALS

Description	Unit of Measurement	Embodied Carbon EC - kgCO2e
Pipes and Conduits		
Black iron (BI) pipe schedule 40		
- 25mm diameter	m	6.95
- 50mm diameter	m	15.1
- 100mm diameter	m	44.65
Galvanized iron (GI) pipe schedule 40		
- 25mm diameter	m	7.58
- 50mm diameter	m	16.45
- 100mm diameter	m	48.66
High density polyethylene (HDPE) pipe SDR 21		
- 50mm diameter	m	3.18
- 100mm diameter	m	15.65
Polyvinyl chloride (PVC) conduit		
- 25mm diameter	m	2.87
- 50mm diameter	m	6.4
- 100mm diameter	m	23.93
Intermediate metallic conduit (IMC)		
- 25mm diameter	m	5.36
- 50mm diameter	m	11.53
- 100mm diameter	m	31.54
Electrical metallic tubing (EMT)		
- 25mm diameter	m	2.12
- 50mm diameter	m	4.69
- 100mm diameter	m	12.44

ESTIMATED EMBODIED CARBON FOR COMMONLY USED CONSTRUCTION MATERIALS

Description	Unit of Measurement	Embodied Carbon EC - kgCO ₂ e
Wires		
Thermoplastic High Heat-resistant Nylon-coated wire (THHN)		
- 3.5 mm ²	m	0.15
- 5.5 mm ²	m	0.24
- 8.0 mm ²	m	0.42
- 14.0 mm ²	m	0.59
- 22.0 mm ²	m	0.93

2 General Construction Data

UTILITY COSTS FOR SELECTED ASIAN CITIES

COUNTRY	Exchange Rate Used	ELECTRICITY	
		Domestic	Commercial/ Industrial
	US\$=	US\$/kwh	US\$/kwh
Manila	PHP 55.57	0.209 - 0.238	0.220
Hong Kong	HK\$7.81	0.110	0.130
Singapore	S\$1.33	0.220 ^a	0.220 ^a
Kuala Lumpur	RM4.67	0.047 - 0.122	0.081 - 0.109
Bangkok	Baht 35.81	0.065 - 0.123**	0.087 - 0.089
Macau	MOP 8.04	0.180	0.180
Jakarta	IDR 15,599	0.087 - 0.109*	0.064 - 0.093**
Bangalore	INR 82.10	0.095 - 0.132	0.126 - 0.182
Ho Chi Minh	VND 24,440	0.125	0.107 / 0.068
Shanghai	RMB 7.20	0.043 - 0.136	4.725 (basic tariff) 0.082 (summer) 0.077 (non-summer)
Beijing	RMB 7.20	0.060 - 0.098	0.169 - 0.171 (Peak) 0.105 - 0.107 (normal)
Guangzhou	RMB 7.20	0.082 - 0.123	0.041 - 0.255
Chongqing	RMB 7.20	0.073 - 0.114	0.090 - 0.208

Cost are at 4th Quarter 2023 Levels.

Basis of Charges in Manila, Philippines

Water

Domestic: 15m³ - 19m³/month

Commercial/Industrial: 3m³/month

Electricity

Domestic: 52kWh - 669kWh

Commercial/Industrial: 9,902kWh

Basis of Charges in Hong Kong, China

Water

Domestic:

0-12m³ : Free of Charge

12-43m³ : HK\$4.16/m³

43-62m³ : HK\$6.45/m³

Above 62m³ : HK\$9.05m³

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

Domestic (bi-monthly consumption)

0-400 kWh: US\$0.87/kWh

400-1,000 kWh: HK\$1.004/kWh

1,000-1,800 kWh: HK\$1.162/kWh

1,800-2,600 kWh: HK\$1.47/kWh

2,600-3,400 kWh: HK\$1.699/kWh

3,400-4,200 kWh: HK\$1.803/kWh

Above 4,200 kWh: HK\$1.815/kWh

Basis of Charges in Singapore

* All rates are nett of GST

^a 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 ≤ 40m³

Domestic water tariff effective from 1 July 2018. Rate includes water conservation tax, water-borne fee,

sanitary appliance fee and is an average for > 40m³

Non-domestic water tariff effective from 1 July 2018. Rate includes water conservation tax, water-borne

fee and sanitary appliance fee

As of 27 October 2021

98 Unleaded petrol as of 27 October 2021

The data for Singapore is provided by *Asia Infrastructure Solutions Singapore Pte Ltd.*

Basis of Charges in Kuala Lumpur, Malaysia

Electricity

Commercial/Industrial: Low voltage

Unleaded Fuel

Fuel: Rates for 14 - 20 Dec 2023. Unleaded = Petrol Ron 95

The data for Kuala Lumpur is provided by *JUBM Group*.

Basis of Charges in Bangkok, Thailand

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

*Fuel (Unleaded) = Gasohol 95

The data for Bangkok is provided by *Mentabuild Limited*.

Basis of Charges in Macau, China

Electricity

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

Water

Domestic: Consumption charge = US\$0.56/m³ for 28m³ or below; US\$0.64/m³ for 29m³ to 60m³; US\$0.75/m³ for 61m³ to 79m³; and US\$0.90/m³ for 80m³ or above. Other charges (Depending on meter size 15mm to 200mm): Meter rental = US\$0.34 - 57.64/month;

Commercial/Industrial: Charges for ordinary users (e.g. Business, government buildings, schools, associations, hospitals and others) only.

Special users (e.g., gaming industries, hotels, saunas, golf courses, construction, public infrastructure, and other temporary consumption) are excluded.

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

UTILITY COSTS FOR SELECTED ASIAN CITIES

WATER		FUEL		
Domestic	Commercial/ Industrial	Diesel	Leaded	Unleaded
US\$/m3	US\$/m3	US\$/litre	US\$/litre	US\$/litre
0.443 - 0.455	2.290	1.123	N/A	1.248
0.830	0.590	2.620	N/A	3.100
2.210 ^{AA} 2.960 ^{AAA}	2.210 ^{AA}	1.960 ^{AAAAA}	N/A	2.610 ^{AAAAA}
0.122 - 0.428	0.561 - 0.612	0.460	N/A	0.439
0.237 - 0.404	0.265 - 0.441	0.844	N/A	1.3407*
0.560 - 0.900	0.750	2.100	N/A	1.860
0.067 - 0.478*	0.438 - 2.500**	1.039	N/A	0.856
0.760 - 0.960	1.850	1.080	NA	1.301
0.274	0.872 / 0.495	0.830	NA	0.940
0.479 - 0.810	0.690	1.044	N/A	1.158
0.617 - 1.112	1.112 - 1.172	1.054	NA	1.165
0.275 - 0.550	0.481	1.080	NA	1.130
0.271 - 0.813	0.546	1.054	N/A	2.172

Cost are at 4th Quarter 2023 Levels

Basis of Charges in Jakarta

*Domestic group in Indonesia will cover residence, religion building, non-profit organization building and government hospital, varies based on sector and power load.

** Commercial group in Indonesia will cover luxury residence, apartment, offices, hotel, commercial building, and factories, varies based on sector and power load

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

Basis of Charges in Bangalore

The data for Bangalore is provided by *Arkind LS Private Limited*

Basis of Charges in Ho Chi Minh, Vietnam

+ All rates are VAT inclusive

Basis of Charges in Beijing, China

Unleaded Fuel

Unleaded 95

Basis of Charges in Guangzhou, China

Fuel # Unleaded gasoline 92#

* Unleaded 95# = US\$1.283/litre; Unleaded 98# = US\$1.461/litre

Basis of Charges in Shanghai, China

Unleaded Fuel

Unleaded 95

Basis of Charges in Chongqing, China

Unleaded Fuel

Unleaded 95

2 General Construction Data

LEAD TIME OF DIFFERENT PACKAGES

Packages	Progress Code* (in weeks)			
	A	B	C	D
In-situ Concrete Works	1	1	2	-
Structural Steel Frames	4	2	-	5
Cladding-Curtain Walling	10	2	-	14
Brickwork	1	1	2	-
Roof Finishes - Profiled Metal	3	1	4	4
Windows	2	1	3	6
Drylining Plaster and Screeds	1	1	1	-
Demountable Partitions	2	1	8	8
General joinery	4	2	3	6
Raised floors	2	1	3	3
Suspended ceilings	2	2	2	4
Decorations (Wall Coverings)	-	3 to 4	2 to 4	-
Stone wall and floor finishes	3	2	4	5
Passenger lifts (non-standard)	8	3	-	27
Escalators	4	2	-	18
Mechanical Pipework	4	2	1	1
Ductwork	4	2	4	3
Sprinklers	6	2	3	3
Air-conditioning plant	2	2	3	6
Variable air-volume unit	1	1	3	6
Electrical package	6	3	-	-
Electrical - Panel box	2	2	-	10
Switchgear	2	2	-	10
Generators (600kW)	4	2	-	13
Light fittings	1	1	6	2
Security Systems	3	3	4	-

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

Packages	Progress Code* (in weeks)			
	A	B	C	D
Controls	4	3	3	-
Furniture	2	2	4	8
Data and Voice cabling	3	2	-	-
Stones	-	-	4 to 8	-
Countertops (Natural)	2	1	4	4
Countertops (Synthetic)	2	1	2	4
Decorative Glass	2	2	4	4
Specialty Water Feature	2 to 4	2	4	4 to 6
Specialty Light Diffuser: Stretched Fabric	2	2	2 to 3	2 to 4
Toilet Fixtures	-	-	-	6 to 8
Glass Reinforced Gypsum	3	2	6	6
Digital Elements (Screens, Software, etc)	2	2	12	8
Fire Suppression	2	1	2	2 to 4
Special Lightings	-	-	2 to 8	-

*Process Code

Legend

A-Working Drawing

B-Approve Working Drawing

C-Procurement of Materials

D-Manufacture

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

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

For example:

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.

2 General Construction Data

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 Claims



**CONSTRUCTION COST HANDBOOK
PHILIPPINES 2024**

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%

2 General Construction Data

TENDER PRICE INDEX

Year	Tender Price Index
2010	100.00
2011	103.93
2012	106.64
2013	106.60
2014	110.42
2015	112.79
2016	115.95
2017	122.44
2018	130.32
2019	134.35
2020	137.77
2021	148.76
2022	158.89
2023	162.37
2024	163.73
2025	168.88
2026	174.03

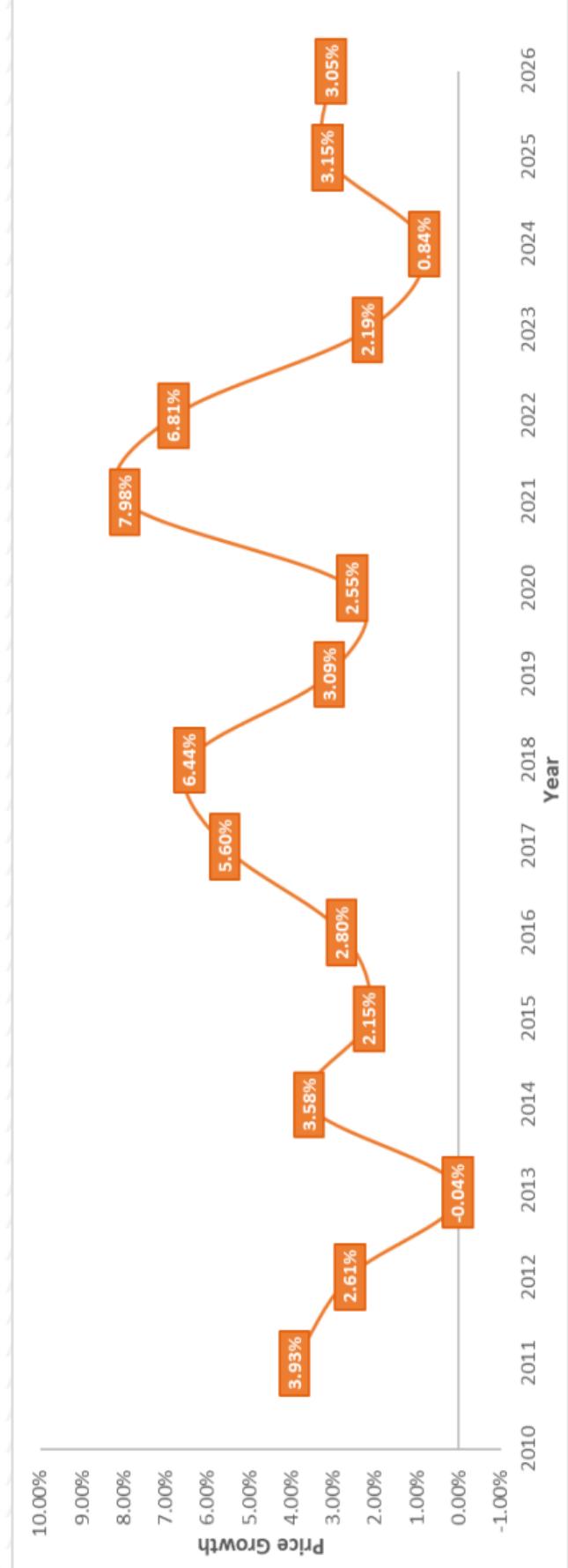
This tender price index data does not consider the construction fluctuations (i.e., prices of plant and equipment, materials, and labor) from the tender date up to the mid-point of the construction period. It is estimated that construction fluctuations would approximately be at 3% - 5% per annum.

The computation is based on a priced bill of quantities which is composed of Civil, Structural, Architectural and MEPF services.

The projection for year 2024 to year 2026 is based on geopolitical landscapes, global prices of commodities, and fuel and oil prices as of December 2023.

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

TENDER PRICE INDEX



2 General Construction Data

LEED CERTIFICATION COST PREMIUM

What is LEED?

LEED stands for Leadership in Energy and Environmental Design. It is a green building certification system sponsored by the United States Green Building Council.

Why LEED?

LEED certified buildings have lower energy and water consumption that reduces the cost of operations. Better indoor air quality, lighting, thermal comfort, quality views, and acoustic performance, as well as the reduction of carbon dioxide emissions and solid waste creates a healthier environment that helps improve both physical and mental health that leads to increase in productivity of the tenant or employees.

Additional Benefits of LEED

- Increased building valuation
- Reduces liability
- Promote better employee relationships
- Reduce energy and water usage
- Promote better indoor air quality
- Reduce maintenance and operation costs
- Triggers innovation and processes to optimize building performance
- Reduce construction waste during the process
- Promote and attract companies with sustainable goals
- Reduce 'sick building' syndrome in the employees
- Increase employee performance
- Promote the usage of recycled materials.

LEED CERTIFICATION COST PREMIUM

Rating Systems

- **Building Design and Construction:** works for all project types from hospitals to manufacturing plants, showrooms, and office buildings. LEED BD+C has options to fit every project. Use a specialty option for unique needs, or use New Construction and Major Renovations for everything else.

- **Interior Design and Construction:** (LEED ID+C) enables project teams who may not have control over whole building operations the opportunity to develop indoor spaces that are better for the planet and for people.

- **Operations and Maintenance:** offers existing buildings an opportunity to pay close attention to building operations by supporting whole buildings and interior spaces that have been fully operational and occupied for at least one year. The project may be undergoing improvement work or little to no construction.

- **LEED Certified Green Homes:** use less energy and fewer resources and are healthier for you and your family.

- Neighborhood Design is for new land development projects or redevelopment projects containing residential uses, nonresidential uses, or a mix. Projects can be at any stage of the development process, from conceptual planning to construction.

2 General Construction Data

LEED CERTIFICATION COST PREMIUM

Levels of Certification

- Certified (40 - 49 points)
- Silver (50 - 59 points)
- Gold (60 - 79 points)
- Platinum (80+ points)

Cost Premium on Office, Commercial, and Residential

Office and Commercial: Shell and Core



3%



4%



5%



7%

LEED CERTIFICATION COST PREMIUM

High Rise Residential: New Construction



3%



4%



5%



9%

Note:

LEED premium cost on office and commercial applies to average standard level, while residential applies to high end level. Innovation and Regional Priority credits were not considered on the computation.

2 General Construction Data

CONSTRUCTION PERMITS

CONSTRUCTION PERMITS	REQUIREMENTS BEFORE CONSTRUCTION	PURPOSE	LOCATIONS REQUIRED TO SECURE	WHERE TO SECURE	REQUESTS REQUIREMENTS	TIMELINE
1. Zoning Certificate	To ensure compatibility or conformity of the project with the existing Land Use Plan of the city or municipality	Prerequisite for applying permits to cover the business or activity conducted by a particular firm or entity is located in that barangay	All Areas	LGU -Office of the Municipal / City Planning and Development	<ul style="list-style-type: none"> Request Letter Barangay Clearance Proof of Land Ownership Site Development Plan 	1 month
2. Barangay Clearance			All Areas	LGU -Barangay Hall or Municipal Office	<ul style="list-style-type: none"> Request Letter Signed and Sealed Architectural Plans 	1 month
3. Civil Aviation Authority of the Philippines (CAAP) Permit	To check or limit the height of the structure located on the flight path of the airport.		Areas within the flight path of the airport;	Civil Aviation Authority of the Philippines	<ul style="list-style-type: none"> Duly signed application form Signed and sealed elevation plans Locational plan with vicinity map Certification of Geodetic Engineer Geodetic Coordinates (WGS 84 Datum) Copy of Reference Elevation from NAMRIA Copy of Horizontal Control Reference using WGS 84 	2 months

CONSTRUCTION COST HANDBOOK
PHILIPPINES 2024

2 General Construction Data

CONSTRUCTION PERMITS

CONSTRUCTION PERMITS	REQUIREMENTS BEFORE CONSTRUCTION	PURPOSE	LOCATIONS REQUIRED TO SECURE	WHERE TO SECURE	REQUIREMENTS	TIMELINE
	6. Laguna Lake Development Authority (LLDA) Clearance	To ensure that the proposed project will not cause significant impact on the Laguna Lake	Rizal, Laguna, Selected City or Municipalities in Metro Manila, Cavite and Batangas	Laguna Lake Development Authority	<ul style="list-style-type: none"> Duly accomplished and notarized application form ECC or Certificate of Non Coverage SEC Approved Articles of Incorporation including GIS or; Articles of Cooperative duly approved by CDA or; Valid Certificate of Business Registration from DTI, IEE, EIA 	<p>1 month</p> <p>3 months</p>

CONSTRUCTION COST HANDBOOK
PHILIPPINES 2024

Date on Timeline:

- The Zoning Certificate, Barangay Clearance, CAAP Permit, ECC, Locational Clearance, LLDA Clearance, and Fire Safety Evaluation Clearance are to be secured consecutively as a requirement for the Building Permit. For large scale construction, the approximate timeline in securing the permits is 13 months to 18 months, for small scale constructions it is no longer than 12 months.

2 General Construction Data

Abbreviations:

- **LGU** - Local Government Unit
- **NAMRIA** - National Mapping and Resource Information Authority
- **WGS** - World Geodetic System
- **PRC** - Professional Regulations Commission
- **PTR** - Professional Tax Receipts
- **CTC** - Certified True Copy
- **TCT** - Transfer of Certificate of Title
- **MOA** - Memorandum of Agreement
- **SPA** - Special Power of Attorney
- **SEC** - Securities and Exchange Commission
- **GIS** - General Information Sheet
- **CDA** - Cooperative Development Authority
- **DTI** - Department of Trade and Industry
- **CSA** - Civil, Structural and Architectural
- **MEPF** - Mechanical, Plumbing and Sanitary, Fire Protection

Proof of Land Ownership:

- Certified True Copy of Land Title
- Certificate of Transfer
- SEC Amendment
- Lease Contract

References:

- Local Government Units
- Civil Aviation Authority of the Philippines
- Department of Environment and Natural Resources
- Laguna Lake Development Authority
- Bureau of Fire Protection





Hann Casino Resort
Owner: Hann Philippines, Inc.
Architect: Atkins

3

General Overview

Construction Sector

3 Construction market update

ECONOMIC INDUSTRY

PROPERTY COMMENTARY

In General

The Philippine economy posted a slower growth of 5.6% for the year 2023 from an annual average of 7.5% in 2022, after a gross domestic product (GDP) growth rate of 5.6% in the final quarter of the year, below the registered growth of 6.0% in Q3 2023 and the 7.1% growth in Q4 2022. Despite the tamer economic expansion, the country's economy is seen to defy the exacerbating global headwinds, as well as the elevated inflation and interest rate environment, as it managed to outperform the major economies in the Asia Pacific region. The main driver of growth includes the normalizing labor market and buoyant inflow of overseas Filipino (OF) remittances, which supported household spending amidst elevated overall level of prices. Whilst the recent economic growth performance fell short of the government's target of 6-7%, faster expansion of between 6.5-7.5% is projected in 2024.

Full year inflation rate averaged 6.0% for 2023, faster than recorded annual inflation of 5.8% in 2022 and 3.9% in 2021. The country's inflation rate stayed above the central bank's target band of 3-4% in the first eleven months of 2023, peaking at 8.7% for the month of January before recording the lowest inflation rate for year at 3.9% in December. Among the main drivers of overall price growth were the faster annual price increases observed food and beverage items; restaurants and accommodation services; and furnishings, household equipment, and routine household maintenance. The Bangko Sentral ng Pilipinas (BSP) forecast inflation to remain well within the target range in the first quarter of 2024, whilst it is projected to settle at 3.7% in 2024 and 3.2% in 2025. Meanwhile, the central bank pegged the benchmark interest rate at 6.5% as of the end of 2023, while risks to the inflation outlook remain tilted to the upside, which include the increased transport fare; the impact of moderate El Niño weather conditions; rise in global oil market prices; and supply constraints on key food items.

Buoyed by the sustained reopening of businesses and the return-to-office push of companies, footfall levels

in key retail districts are closing to pre-pandemic levels whilst retail sales continue to be challenged by the heightened inflation that resulted in a modest growth in household spending. The resumption of in-office work, improving labour market, and the growth prospect of the overall economy is seen to further buoy local demand whilst global retailers continue to balance the lingering global market uncertainties.

The hotel segment has made a significant recovery amidst the resurgence of foreign visitor arrivals and strong domestic travel demand that significantly boosted occupancy levels and improved occupancies in key hotel and accommodation markets in Metro Manila and other key business hubs. Despite the drawbacks resulting from factors which include high inflation, staffing shortage, technological challenges, and looming recessionary threats in key economies, the hotel segment is poised for stronger growth amidst the anticipated rebound of the Meetings, Incentives, Conferences and Exhibitions (MICE) industry, and further strengthening domestic and international travel markets.

The growth of the manufacturing sector remained tamed as the impact of the global slowdown continues to restrict expansion activities in the manufacturing and trade industries. Despite the bleak global demand outlook, the strong growth fundamentals in logistics and e-commerce industries, propelled by the increased internet penetration and digital economy, as well as the growing middle-income population, will remain the major factors in driving changes to industrial real estate and will continue to create opportunities in the segment.

Commercial Sector

The consolidated office stock for Prime and Grade 'A' developments in Metro Manila reached roughly 9.5 million sq.m. by end of 2023. The total stock of Prime and Grade 'A' office spaces in Metro Manila increased by approximately 0.35 million sq.m. in 2023, which is roughly 64% of the total projected completions for the year. This figure, however, is an improvement in the recorded completions in the previous year of over

3 Construction market update

0.28 million sq.m., which is suggestive of the renewed leasing activity in Metro Manila. Taguig City (with major business districts, such as Bonifacio Global City, McKinley Hill, McKinley West, and ARCA South) corners approximately 28% of the total Prime and Grade 'A' stock. Makati City (consisting of the Makati CBD and its fringe areas) accounts for approximately 19%, while Pasig City and Quezon City captured 16% and 14% of the total Prime and Grade 'A' stock, respectively.

Net absorption figures in 2023 remains on positive growth trend as the demand from the IT-BPM sector continues in 2023, bringing the overall vacancy rate of Prime and Grade 'A' office spaces in Metro Manila to 16.9% by end-2023. Despite recovery in demand coming from the IT-BPM sector, the completion of new supply and confusions regarding legislations related to the flexible work scheme of the IT-BPM sector will still likely push vacancy rates upwards in 2024.

On the other hand, the average net rents in Prime and Grade 'A' developments in Metro Manila declined by 1.8% quarter-on-quarter and 1.4% year-on-year (YoY). The downward adjustments were due to the softening of asking rents of developments located in decentralized markets primarily due to prevailing high vacancies in the areas, while average rents in the main CBDs, particularly Makati CBD and Bonifacio Global City (BGC) remain steady.

Cushman & Wakefield Research forecasts the average net rents of Prime and Grade 'A' developments in Metro Manila through 2024 to recover within the range of PHP1,000 to PHP1,100 per sq.m. per month. The average net rents for developments within the main CBDs are likely to remain unchanged, while average net rents for developments located outside the main CBDs will likely recover as expansion plans of IT-BPM companies continue to be revived.

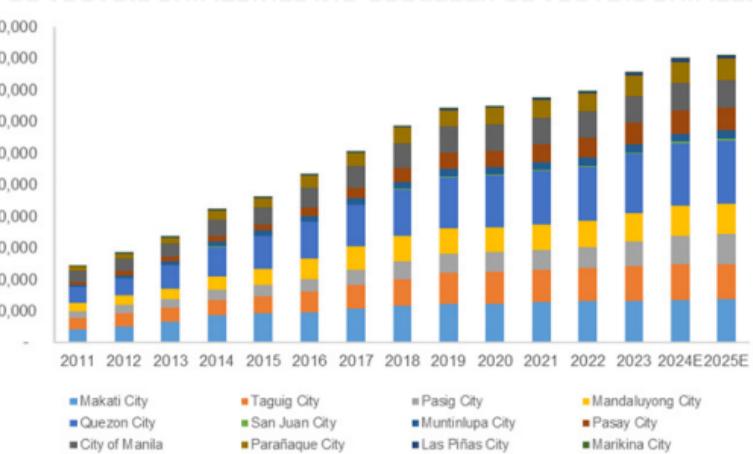
Residential Condominium Sector

By end of 2023, the total supply of completed residential condominium units in Metro Manila reached approximately 410,000 units. Majority of the existing developments are located in Quezon City (22%), followed by Makati City (17%) and Taguig City (13%).

Within the next four (4) years, there are 60,000 units that are expected to be completed. Both Quezon City and Pasig City are expected to have around 15,500 units added to their respective existing stocks.

Average monthly rents of both mid-end and luxury residential condominium developments in Metro Manila have marginally increased in 2023 and will continue to exhibit marginal growth rates in 2024. The estimated range of rental rates within Metro Manila is within PHP 500 to PHP 1,200 per sq.m. per month. Rental rates in Makati CBD and BGC are estimated to be in the higher end of the range between PHP 750 to PHP 1,600 per sq.m. per month.

Figure 1. Total Number of Residential Condominium Units in Metro Manila (2011-2025E)

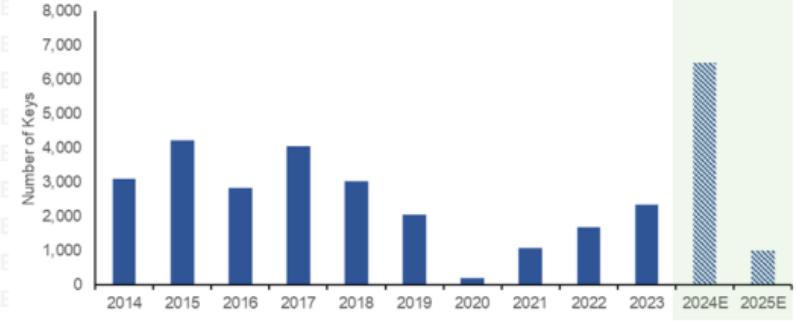


3 Construction market update

Hotels and Serviced Apartments Sector

Banking on the strong demand for domestic and resumption of international travel, global and local operators are gradually kick-starting construction plans of projects that were previously stalled by the pandemic. Investor confidence is also rising, as evident by several project launches of major global brands, as well as of homegrown brands in key travel destinations of the country. For the year 2023, new completions increased by 39% to around 2,350 keys, as compared to 1,694 keys delivered in 2022. The bulk of new supply was in Taguig City (31%), Pasay City (17%), City of Manila (16%), Parañaque City (15%), and Mandaluyong City (13%). The total stock of hotel and serviced apartments stood at roughly 46,500 keys in 2023, and it is estimated to reach around 53,000 in 2024 and around 54,000 keys in 2025. The existing stock is concentrated in Makati City (21%), Pasay City (19%), City of Manila (17%), Quezon City (11%), and Parañaque City (10%), while upcoming new supply up to 2025 will be coming from Quezon City (38%), Parañaque City (24%), Makati City (14%), Pasay City (8%), and City of Manila (7%).

In 2023, foreign visitor arrivals totaled 5 million, more than double the recorded inflow of foreign tourists in 2022 at 2.03 million, thereby breaching the 4.8 million target set by the Department of Tourism (DOT) for the year, whist still below the pre-pandemic level at 8.19 million in 2019. Similarly, visitor receipts for 2023 ballooned by 124.27% to reach PHP 482.54 billion from PHP 214.58 billion in the same period last year. The DOT maintains an optimistic outlook that the industry will sustain its growth trajectory as travel demand is expected to transcend challenges, which include the surge in air fares, staffing issues, and overall escalation of price levels as foreign visitor arrivals are eyed to reach 7.7 million in 2024.

Figure 2. Number of New Hotels and Serviced Residences in Metro Manila (2014-2025E)

Retail Sector

For 2023, new retail space supply was recorded at around a gross floor area (GFA) of 443,000 sq.m with the completion of a major shopping mall development in Quezon City, which accounts for 43% of new supply.

Other completions were in San Juan City (23%), Makati City (17%), Caloocan City (11%), and Parañaque City (7%) which brings the cumulative retail space GFA inventory to 9.7 million sq.m. New completions were significantly above the recorded 39,000 sq.m of new retail space GFA in 2022, as majority of the new supply deliveries were stalled projects in the past few years. Whilst new launches remain tamed in Metro

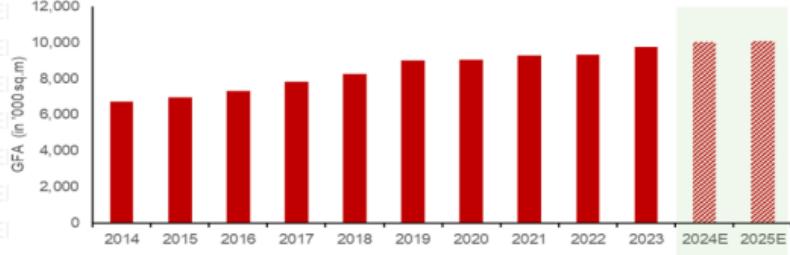
Manila, around 271,000 sq.m of retail space GFA is still expected in 2024, or a total of around 483,000 sq.m of retail space GFA up to 2026, which will bring supply inventory to around 10.2 million sq.m.

3 Construction market update

As of end of 2023, key retail districts have noted high recovery rates in terms of foot traffic and tenant sales, whilst significant vacancies were still observed in newer developments as expansion plans of global retailers remained constrained by lingering headwinds.

The retail segment is seen to gain further momentum with the improvements in the overall real estate sector, which will bring more footfall in retail developments, as well as in better macroeconomic fundamentals, specifically the stability of overall price levels and the anticipated rate cuts, which will encourage household spending.

Figure 3. Mid and High-end Shopping Mall Stock in Metro Manila (2014-2025E)



Industrial Sector

Due to a combination of external factors including supply chain issues, persisting geopolitical conflicts, and the impending recovery of the majority of the global economy which continues to face headwinds from surging inflation and a high interest rate environment, the manufacturing segment has been slowly losing ground and has yet to revert to its pre-pandemic growth. In 2023, the growth in Gross Value Added (GVA) in Manufacturing averaged at 1.3%, a decline from a growth of 4.9% in 2023. This slowdown in the sector has resulted in a more tamed demand for manufacturing warehouses as locators remain wary of the fluidity of the global market situation.

Meanwhile, the resurgence of e-commerce in the Philippines has become a major catalyst of the rapid expansion of the industrial segment in the past three years. According to the e-Economy SEA 2023 report by Google, Temasek, and Bain & Company, the country's e-commerce is forecast to grow by around 21% CAGR from 2023 to 2025, subsequently buoying the growth of the overall digital economy to reach USD 35 billion by 2025 from an estimate of only USD 24 billion in 2023.

The total supply of existing industrial estates in Mega Manila stood at around 6,021 hectares with the addition of around 145 hectares in 2023. The anticipated industrial estate pipeline in Mega Manila up to 2025 will further add around 430 hectares of industrial estates, which will be coming from the regions of Central Luzon and CALABA.

3 Construction market update

COMPANY PROFILE

Cushman & Wakefield (NYSE: CWK) is a leading global real estate services firm that delivers exceptional value for real estate occupiers and owners. Cushman & Wakefield is among the largest real estate services firms with approximately 50,000 employees in over 400 offices in approximately 60 countries. In 2021, the firm had revenue of \$9.4 billion across core services of property, facilities and project management, leasing, capital markets, and valuation and other services.

C&W in the Philippines headquartered in Bonifacio Global City, Taguig City was established in 2012 as a fully owned entity after operating for 12 years through a local partner/affiliate.

To learn more, visit www.cushmanwakefield.com or follow
@CushWake on Twitter.



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Email : tetet.castro@ap.cushwake.com



Pioneer House BGC
Owner: Pioneer Insurance & Surety Corporation
Architect: JSLA Architects

4 FINANCIAL

Philippines Key Data

Financial Definitions

Mortgage Repayment Table

Consumer Price Index

Exchange Rates Currency

Currency Charts

Manila Reference Rate

Financial

PHILIPPINES KEY DATA

POPULATION

Population (2022)	113.0 M
Population (2023)	114.0 M
Urban Population*	48.00%
Population under 15	29.20%
Population over 65	6.15%
Ave. Annual Growth Rate (2015-2020)	1.60%

GEOGRAPHY

Land Area	300,000 km ²
Agricultural Area (2016)	41.50%
Capital City	Manila
(population Metropolitan Manila - Census 2015)	12.88M
(population Manila - Census 2015)	1.78M

ECONOMY 2023

Monetary Unit	Peso
Average Headline Inflation Rate (2018=100) Full Year 2023	5.90%
Gross Domestic Product (GDP) Full Year 2023	Php 24,289,426 (in mil)
GDP per Capita Full Year 2023	Php 212,717.03

CONSTRUCTION 2023

Gross Value of Construction Output Full Year 2023	Php 3,644,094 (in mil)
Net Value of Construction Output Full Year 2023	Php 1,831,828
Net Value of Construction Output as a proportion of the GDP Full Year 2023	7.54%

*Population on Philippine Cities only

*Projection only

Source:

National Accounts of the Philippines

Philippine Statistical Yearbook

Philippine Statistics Authority

World Bank

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 interest rate that equates the percent value of expected future cash flows to the cost of the investment; can be compared to the Discount Rate.

NET PRESENT VALUE (NPV)

The present value of all future cash flows discounted back to today's values at the Discount Rate; 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.

FINANCIAL FORMULAE

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

PV = present value

FV = future value

PMT = payment amount

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

i = interest rate per period (e.g. 12% p.a. compounded monthly; i = 12% / 12 months = 1% per period)

Financial

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

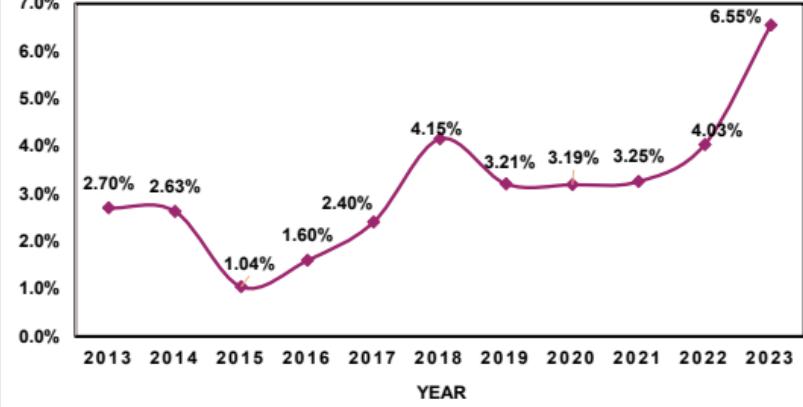
Example

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

over 10 years

Répayments = $1,000,000 / 1,000 \times \13.22

= \$13,220 per month

CONSUMER PRICE INDEX**% CHANGE IN CPI**

YEAR	INDEX (AVE)	% CHANGE
2012	100.0	0.00%
2013	102.7	2.70%
2014	105.4	2.63%
2015	106.5	1.04%
2016	108.2	1.60%
2017	110.8	2.40%
2018	115.4	4.15%
2019	119.1	3.21%
2020	122.9	3.19%
2021	126.9	3.25%
2022	132.0	4.03%
2023	140.7	6.55%

Note:

Base Date 2012 = 100

Source: Philippine Statistics Authority

Financial

EXCHANGE RATES

December 2023

COUNTRY	CURRENCY	FOREIGN CURRENCY IN PHP	PHP IN FOREIGN CURRENCY	US\$ IN FOREIGN CURRENCY
Australia*	dollar	37.95	0.03	1.46
Bahrain*	dinar	147.41	0.01	0.38
Brunei*	dollar	41.93	0.02	1.33
Canada*	dollar	42.00	0.02	1.32
China*	yuan	7.81	0.13	7.11
Denmark+	kroner	8.25	0.12	6.74
European Monetary Union*	euro	61.47	0.02	0.90
Hong Kong*	dollar	7.11	0.14	7.81
India+	rupee	0.67	1.50	83.17
Indonesia*	rupiah	0.004	277.78	15,435.28
Japan*	yen	0.39	2.54	141.39
Malaysia+	ringgit	12.07	0.08	4.60
New Zealand+	dollar	35.17	0.03	1.58

Notes:

* Convertible currencies with BSP

+ Non convertible currencies with BSP

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

Country	Currency	Foreign Currency in PHP	PHP in Foreign Currency	US\$ in Foreign Currency
Norway	krone	5.45	0.18	10.20
Pakistan+	rupee	0.20	5.08	282.07
Saudi Arabia*	rial	14.82	0.07	3.75
Singapore*	dollar	42.09	0.02	1.32
South Africa+	rand	3.00	0.33	18.53
Korea*	won	0.04	23.20	1,289.26
Sweden+	krone	5.56	0.18	9.99
Switzerland*	franc	65.81	0.02	0.84
Taiwan+	NT dollar	1.81	0.55	30.72
Thailand*	baht	1.63	0.61	34.17
United Arab Emirates (UAE)*	dirham	15.13	0.07	3.67
United Kingdom*	pound	70.76	0.01	0.79
United States of America*	dollar	55.57	0.02	1.00

Source: BSP Reference Rates

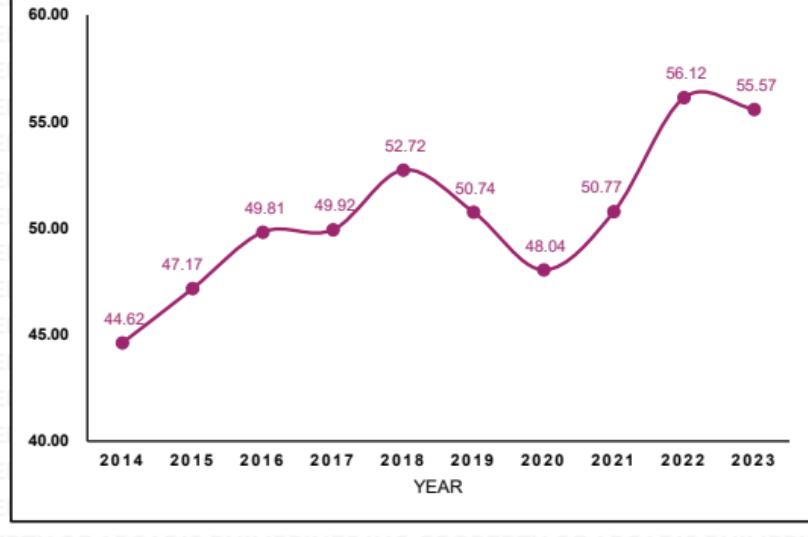
XE Currency Converter

Financial

CURRENCY CHARTS

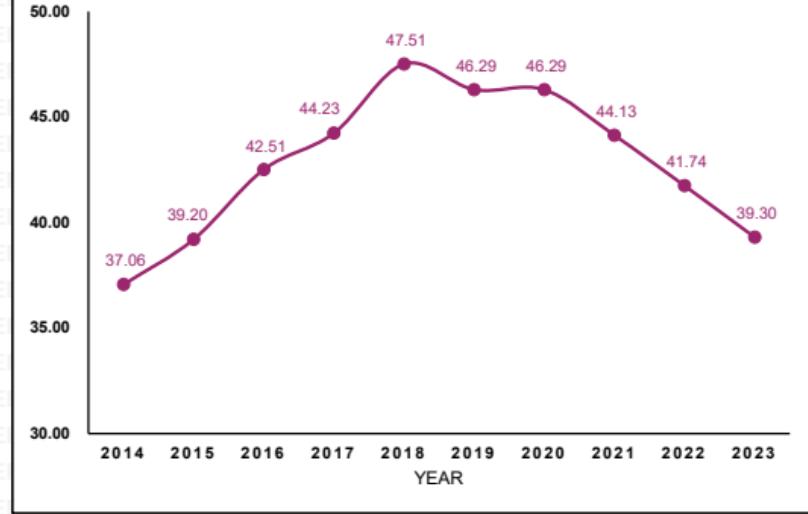
US DOLLAR

PHP PER US\$



JAPANESE YEN

PHP PER 100 JAPANESE YEN



Data Source: Bangko Sentral ng Pilipinas

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

STERLING POUND

PHP PER GBP



SINGAPOREAN DOLLAR

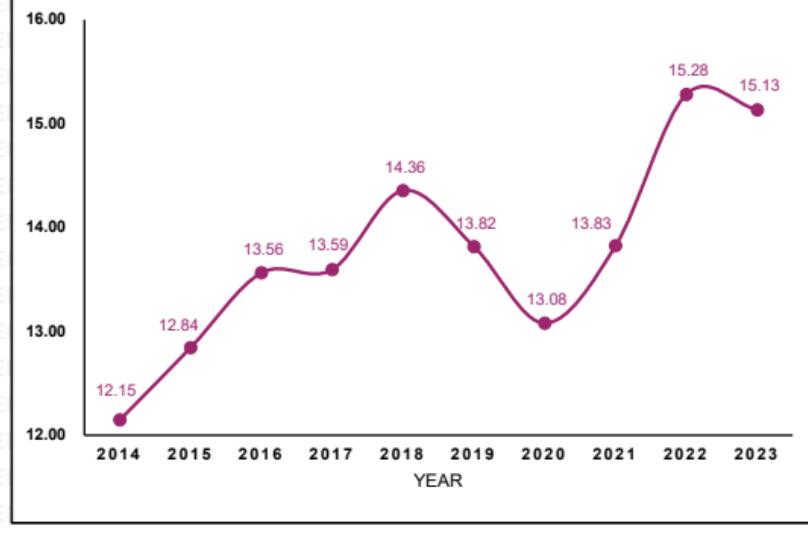
PHP PER SINGAPOREAN DOLLAR



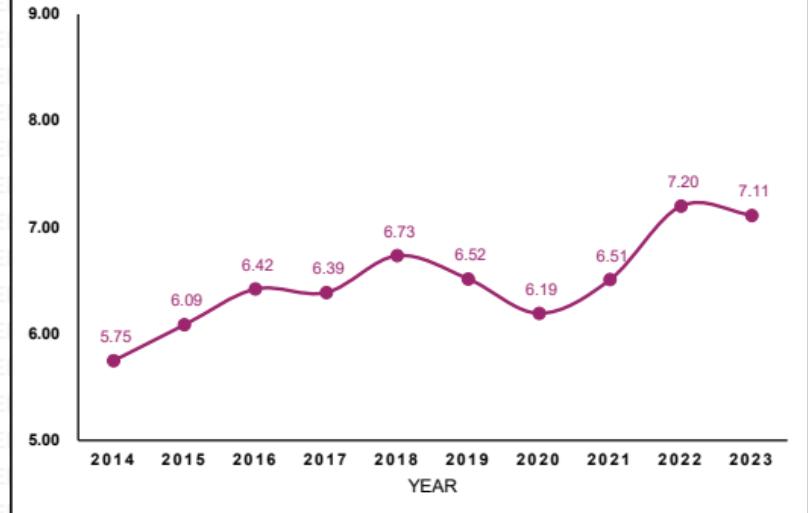
Financial

CURRENCY CHARTS

DIRHAM
PHP PER DIRHAM



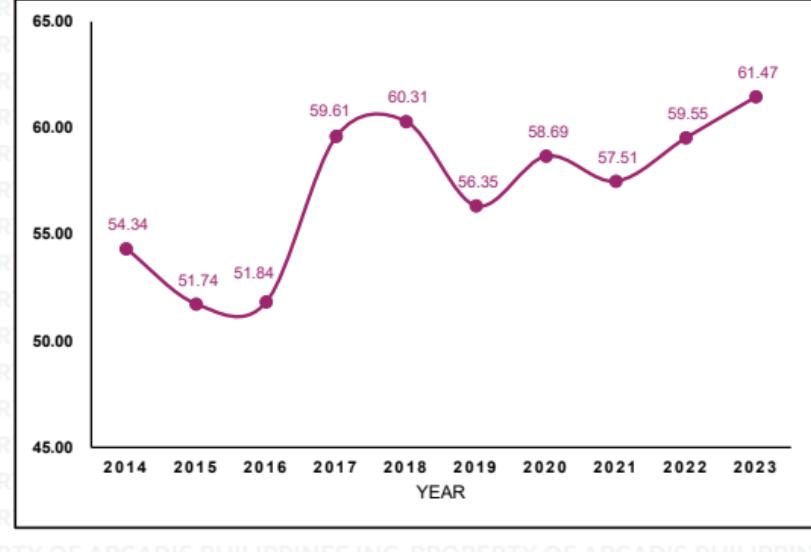
HONG KONG DOLLAR
PHP PER HONG KONG DOLLAR



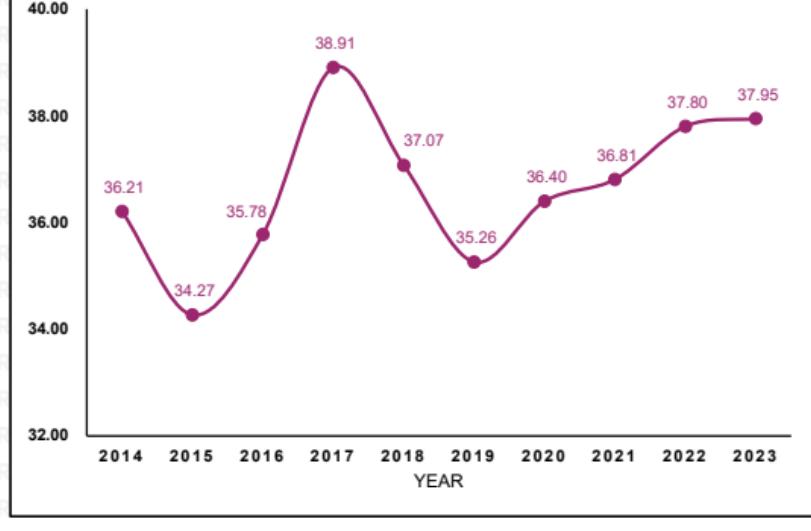
Data Source: Bangko Sentral ng Pilipinas

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

Euro PHP per Euro



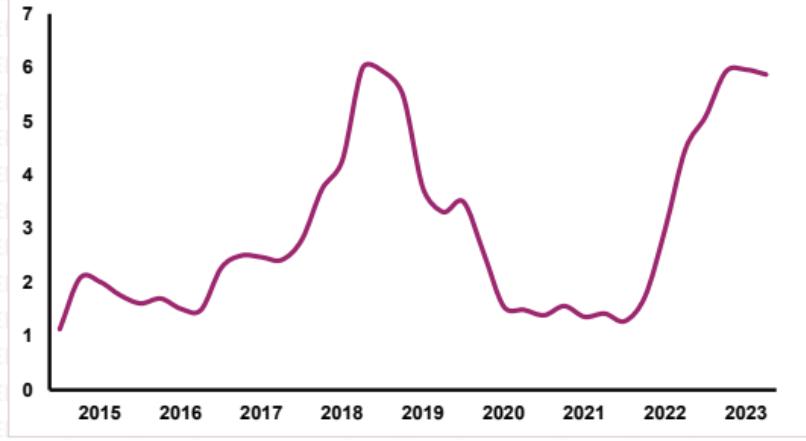
Australian Dollar PHP per Australian Dollar



Financial

MANILA REFERENCE RATE

MANILA REFERENCE RATE %



Note:

Based on all maturities

PHILIPPINE CENTRAL BANK MANILA REFERENCE RATE

DATE	%
Mar 2016	1.61
Jun 2016	1.70
Sep 2016	1.51
Dec 2016	1.49
Mar 2017	2.27
Jun 2017	2.50
Sep 2017	2.47
Dec 2017	2.42
Mar 2018	2.80
Jun 2018	3.74
Sep 2018	4.27
Dec 2018	5.99

**CONSTRUCTION COST HANDBOOK
PHILIPPINES 2024**

PHILIPPINE CENTRAL BANK MANILA REFERENCE RATE

(cont'd)

PROPERTY OF ARCADIS PHILIPPINES INC.	DATE	%
PROPERTY OF ARCADIS PHILIPPINES INC.	Mar 2019	5.93
PROPERTY OF ARCADIS PHILIPPINES INC.	Jun 2019	5.49
PROPERTY OF ARCADIS PHILIPPINES INC.	Sep 2019	3.75
PROPERTY OF ARCADIS PHILIPPINES INC.	Dec 2019	3.31
PROPERTY OF ARCADIS PHILIPPINES INC.	Mar 2020	3.50
PROPERTY OF ARCADIS PHILIPPINES INC.	Jun 2020	2.55
PROPERTY OF ARCADIS PHILIPPINES INC.	Sep 2020	1.55
PROPERTY OF ARCADIS PHILIPPINES INC.	Dec 2020	1.49
PROPERTY OF ARCADIS PHILIPPINES INC.	Mar 2021	1.39
PROPERTY OF ARCADIS PHILIPPINES INC.	Jun 2021	1.56
PROPERTY OF ARCADIS PHILIPPINES INC.	Sep 2021	1.36
PROPERTY OF ARCADIS PHILIPPINES INC.	Dec 2021	1.42
PROPERTY OF ARCADIS PHILIPPINES INC.	Mar 2022	1.28
PROPERTY OF ARCADIS PHILIPPINES INC.	Jun 2022	1.74
PROPERTY OF ARCADIS PHILIPPINES INC.	Sep 2022	3.00
PROPERTY OF ARCADIS PHILIPPINES INC.	Dec 2022	4.48
PROPERTY OF ARCADIS PHILIPPINES INC.	Mar 2023	5.09
PROPERTY OF ARCADIS PHILIPPINES INC.	Jun 2023	5.92
PROPERTY OF ARCADIS PHILIPPINES INC.	Sep 2023	5.96
PROPERTY OF ARCADIS PHILIPPINES INC.	Dec 2023	5.87



5 OTHER INFORMATION

Philippine Map

Public Holidays

Conversion Factors

Arcadis Professional Services | Cost and Commercial Management

Sustainability Solutions

Project & Programme Management

Resilience - Water, Engineering and Design

BIM Management

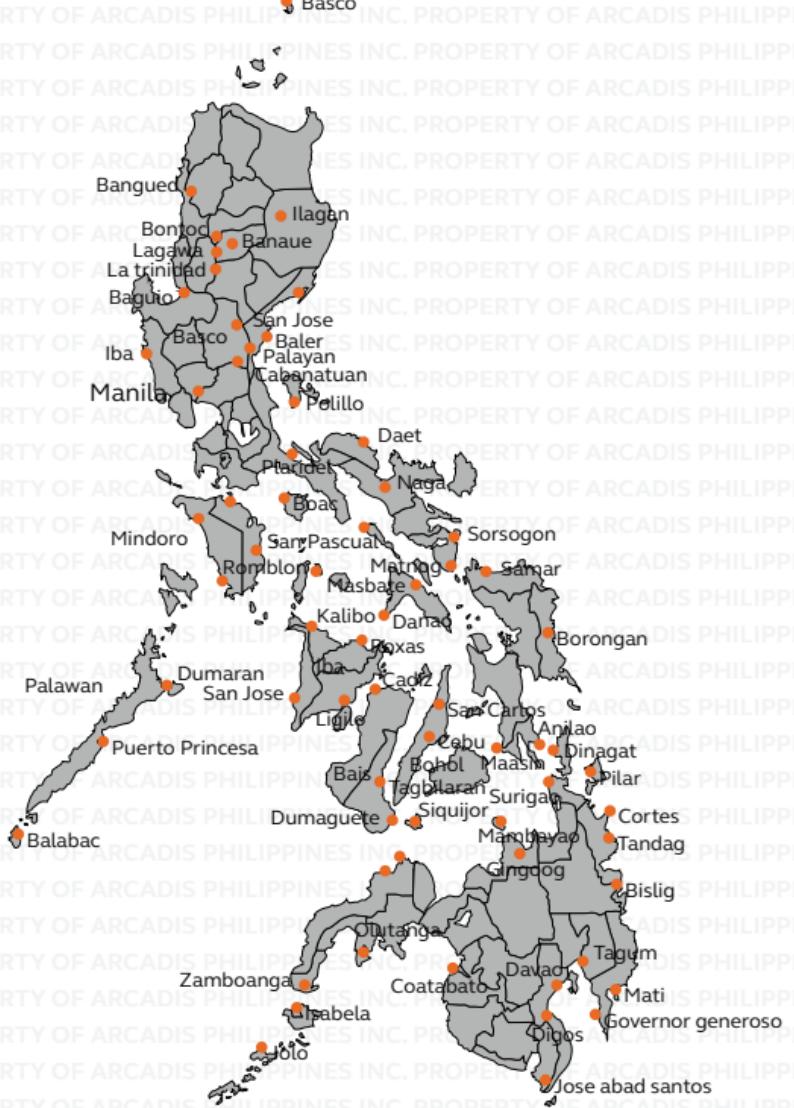
Digital Solutions

Quality System

Directory of Offices

5 Other Information

Philippine map



PUBLIC HOLIDAYS

Philippines	2024
A. Regular Holidays	
New Year's Day	01 Jan
Maundy Thursday	28 Mar
Good Friday	29 Mar
Araw ng Kagitingan	09 Apr
Eid'l Fitr (Feast of Ramadhan)	10 Apr
Labor Day	01 May
Independence Day	12 Jun
National Heroes Day	26 Aug
Bonifacio Day	30 Nov
Christmas Day	25 Dec
Rizal Day	30 Dec
B. Special Non-Working Holidays	
Chinese New Year (Additional)	10 Feb
Black Saturday (Additional)	30 Mar
Ninoy Aquino Day	21 Aug
All Saint's Day	01 Nov
All Soul's Day	02 Nov
Feast of the Immaculate Conception of Mary	08 Dec
Christmas Eve (Additional)	24 Dec
Last Day of the Year	31 Dec

5 Other Information

CONVERSION FACTORS

	Unit
Length	
10 mm	= 1 cm
100 cm	= 1 m
1,000 m	= 1 km
	12 in = 1 ft
	3 ft = 1 yd
	1,760 yd = 1 mile
Area	
10,000 m ²	= 1 ha
100 ha	= 1 km ²
	9 ft ² = 1 yd ²
	4,840 yd ² = 1 acre
	640 acre = 1 mile ²
Volume	
1,000 ml	= 1 L
1,000 L	= 1 m ³
1,000 cm ³	= 1 L
	0.83 gal. (UK) = 1 gal. (US)
	8 pt. (US) = 1 gal. (US)
	4 qt. (US) = 1 gal. (US)
Mass/force	
9.806 N	= 1 kg
1,000 g	= 1 kg
1,000 kg	= 1 tonne
'16 tael	= 1 catty
	1,000 lbs. = 1 kip
	16 oz = 1 lb
	2,224 lb = 1 ton
Pressure	
1 Pa	= 1 N/m ²
1,000 Pa	= 1 KPa
1 Mpa	= 1 N/mm ²
0.01 kg/cm ²	= 1 Kpa
	0.068 atm = 1 psi
	14.5 psi = 1 bar
	0.491 psi = 1 in. Hg
Power	
1,000 w	= 1 kw
1 w	= 1 VA x pf*
	550 ft-lb/sec = 1 hp
Cooling Load	
12,000 BTU/hr	= 1 TR
3,024 kcal/hr	= 1 TR
3,517 KW	= 1 TR

CONSTRUCTION COST HANDBOOK PHILIPPINES 2024

	To imperial (approx)	To metric (approx)
Length		
1 in.	= 25.400 mm	1 cm = 0.394 in.
1 ft	= 30.480 cm	1 m = 3.281 ft.
1 yd	= 0.914 m	1 m = 1.094 yd
1 mile	= 1.609 km	1 km = 0.621 mile
Area		
1 ft ²	= 0.093 m ²	1 m ² = 10.764 ft ²
1 yd ²	= 0.836 m ²	1 m ² = 1.196 yd ²
1 acre	= 0.405 ha	1 ha = 2.471 acres
1 mile ²	= 2.590 km ²	1 km ² = 0.386 mile ²
Volume		
1 pt. (UK)	= 0.568 L	1 L (UK) = 1.760 pt.
1 pt. (US)	= 0.473 L	1 L (US) = 2.113 pt.
1 gal. (UK)	= 4.546 L	1 L (UK) = 0.220 gal.
1 gal (US)	= 3.785 L	1 L (US) = 0.264 gal.
Mass/force		
1 oz.	= 28.350 g	1 gram = 0.035 oz.
1 lb.	= 0.454 kg	1 kg = 2.205 lb.
1 ton	= 1.016 tonne	1 tonne = 0.984 ton
1 catty	= 0.605 kg	
Pressure		
1 bar	= 100 KPa	1 MPa = 145 psi
1 psf	= 47.88 Pa	1 kg/cm ² = 14.22 psi
1 psi	= 6.895 KPa	1 KPa = 0.295 in. Hg
1 atm.	= 101.3 KPa	1 KPa = 20.89 psf
Power		
1 hp	= 0.746 kw	1 kw = 1.340 hp
Temperature		
(°F - 32) x 5/9		(°C x 9/5) + 32

5 Other Information

ARCADIS PROFESSIONAL SERVICES

COST AND COMMERCIAL MANAGEMENT

- Preliminary cost advice and cost planning
- Procurement advice on appropriate contract packaging, tendering procedures and procurement options.
- Management of the selected procurement route.
- 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
- Financial evaluation of "package" bid contracts
- Cost and contract research
- Reinstatement Valuation and/or Assessments
- Construction Feasibility Studies
- Budget Formulation
- Analysis of cost/design options

ARCADIS PROFESSIONAL SERVICES COST AND COMMERCIAL MANAGEMENT

- **Cost Planning**
- **Value engineering**
- **Cash flow evaluations**
- **Cost monitoring and/or cost control of construction works**
- **Bill of Quantities preparation to ensure that all materials have been considered, measured and included ready for tendering.**
- **Preparations of fixed asset registers**
- **Cost assessment of Sustainability Solutions initiatives**

5 Other Information

SUSTAINABILITY SOLUTIONS

Overview of Core Services

Our sustainability solutions team at Arcadis partner with businesses in the Philippines to navigate the evolving sustainability landscape and leverage our network of global specialists to provide a comprehensive approach and achieve their ESG goals.

Sustainable Building Certifications

Leadership in Energy and Environmental Design (LEED)

- A framework for healthy, highly efficient, and cost-saving green buildings, which offer environmental, social and governance benefits.
- We provide:
 - Consultancy service with full technical support;
 - Project management;
 - Program training through eco-charrettes;
 - Construction management;
 - Energy and daylight simulation; and
 - Commissioning

WELL

- A human-centric framework which ensures that spaces where humans live, work, and play are designed and constructed with health, well-being, and productivity in mind.
- We provide:
 - Consultancy service with full technical support during both the documentation and verification phases

SUSTAINABILITY SOLUTIONS

Building for Ecologically Responsive Design Excellence (BERDE)

- The Philippine Green Building Council's (PHILGBC) own green building rating system.

• We provide:

- Assistance to project teams in understanding synergies among BERDE categories
- Offer BERDE Certification Project management

Excellence in Design for Greater Efficiencies (EDGE)

- An innovation of IFC, EDGE helps property developers to build and brand green in a fast, easy and affordable way. EDGE is supported by free software that offers us solutions to reduce energy, water, and the energy embodied in building materials by at least 20 percent.
- EDGE certification is recognized by the major green finance standards and streamlines green debt reporting requirements. The simplicity and low cost of EDGE, plus its focus on quantifying emission reductions makes it invaluable to map and track a path to zero carbon.

The program has been generously supported by the following donors: Austria, Canada, Denmark, ESMAP, EU, Finland, GEF, Hungary, Japan and Switzerland.

• We provide:

- EDGE Expert consultancy
- EDGE Auditor service

5 Other Information

SUSTAINABILITY SOLUTIONS

Building performance and Life cycle

Life cycle assessment - Calculate the total environmental and cost impact of a project, while identifying the best opportunities for mitigation and positive impact

Energy audit - Provides expert and unbiased advice and solutions on energy usage through capital expenditure costing to ensure an optimized payback period is achieved for any proposed investment.

Energy modeling - Produces computer simulations using programs to reduce building energy consumption through Energy Efficiency Measures (EEM) which focus on optimizing the combined effect of the building envelope, HVAC systems, lighting, and equipment, without compromising project cost, occupant safety, and comfort.

Early Cost and Carbon Assessment - Evaluates cost and embodied carbon early in the asset design phase for optimization and to predict the environmental impact of material and design options.

Commissioning - Verifies and documents that the facility and all its systems and assemblies were planned, designed, installed, tested, operated, and maintained to meet the owner's project requirements.

Detailed Lifecycle Analysis (LCA) / Whole Building Lifecycle

Assessment (WbLCA) - Provides a comprehensive understanding of a project's life cycle environmental impact, including operational and embodied carbon to optimize sustainable design with quantifiable environmental metrics, viability, and environmental performance; and provide sustainable and cost-effective outcomes

SUSTAINABILITY SOLUTIONS

- Baseline LCA and Lifecycle Costing (LCC)
 - Identifies high-impact materials and carbon and energy hotspots
- Comparative analysis
 - Explores feasible alternative design options to cost-effectively reduce hotspots.

Sustainability Consulting and Reporting

Sustainability advisory - Help clients understand the organization's baseline to create an ESG strategy towards their sustainability ambitions and goals through materiality assessment, defining key performance indicators (KPIs), assigning roles within the organization, and goal validation

Environmental, Social, and Governance (ESG) Due Diligence

- Cultivates a deep understanding of an organization's current state by establishing a baseline focusing on the following topics:

- Energy efficiency
- Carbon assessment
- Greenhouse gas (GHG) calculation
- Environmental regulation review
- Climate risk
- Water usage and efficiency
- Waste production and management
- Biodiversity
- Connectivity and accessibility
- Welfare and wellbeing
- Impact on local community
- Strategic Capital Expenditure (CAPEX) investments are proposed to increase ESG performance, thereby fostering long-term benefits and sustainable competitive advantage.

5 Other Information

SUSTAINABILITY SOLUTIONS

ESG Reporting - Provides transparency about sustainability practices and ethical conduct, both while adhering to the company's ESG strategy. It not only satisfies the growing demand from stakeholders for responsible business behavior; it also enables investors to make informed decisions based on the organization's long-term viability.

PROJECT AND 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; and

• 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:

• collaboration

• deep understanding of clients needs and aspirations

• providing tailor-made solutions, and

• 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 assist with business

planning. Where appropriate, we assist with the development

of master plans, option appraisals, overseeing of site

acquisitions, and 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.

5 Other Information

PROJECT AND PROGRAMME MANAGEMENT

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 a 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.

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.

PROJECT AND PROGRAMME MANAGEMENT

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 and clear outputs that make a real contribution to project success
- Enables corrective action advice to mitigate programme slippages and variations

5 Other Information

RESILIENCE - WATER, ENGINEERING AND DESIGN

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 concern 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 a 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.

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.

Conveyance

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

Water Management

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

RESILIENCE - WATER, ENGINEERING AND DESIGN

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.

Technical Advisory

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

- Asset Valuation;
- Regulatory Compliance Review;
- Capital Improvement Planning;
- Water Demand Projections; and
- Loan Monitoring

Due Diligence and Asset Management

We are capable of providing asset management services for various types of engineering and infrastructure systems such as water and wastewater utilities, mechanical and electrical assets of industrial plants, bridge and pavement systems, and building assets.

- Enterprise asset management solutions
- Asset blueprint development
- ISO55000(1) certification process
- Building and plant audits
- Data solutions and analytics
- Digital monitoring
- Reliability modelling
- Determination of optimal preventive interventions
- Life Cycle Cost Analysis

We provide Technical Due Diligence (TDD) services that

involve a process of systematic review, analysis, and discovery of the conditions of assets from various viewpoints such as architectural, constructional, structural, MEP, fire safety and external façade checking.

5 Other Information

BIM MANAGEMENT

Arcadis' mission of "improving quality of life" extends beyond the traditional construction consultancy scope. Our BIM experience and capabilities have allowed us to deliver value in the Digital Age.

Arcadis Philippines is an established construction consultant that has supported private sector clients in the Philippines since 1982. We work across a range of sectors supporting local and foreign companies with technically viable solutions that manage quality, time, cost, and health and safety. We lead our projects from the Philippines but work collaboratively with our partner offices to bring the world's best to each project as required. We aim to work alongside our clients as partners, bringing not only quality 'service', but also knowledge and expertise that help make informed decisions.

Arcadis Philippines has supported high profile clients deliver successful projects and realize benefits from their investments. Whether straightforward or complex, we have the necessary expertise to provide advisory and consultancy for clients with unique requirements.

As BIM Advisors and Digital Solutions experts, we bring global capabilities to the Philippine market, ensuring that our clients are always within reach of the very best construction digital solutions and have the industry's best practices in their arsenal.

DIGITAL SOLUTIONS

Many companies know that digital tools and platforms can help their business but need guidance on the best ways to unlock their full potential. Our team understands digital technologies and help our clients leverage them to generate value.

Immersive Data Visualization (Holobuilder):

360° Reality Capture is our Virtual Reality & Augmented Reality toolset for Project Management & Construction Management, Virtual Asset Data Models, and Operational and Health & Safety Training.

Holobuilder provides enhanced visualization of construction project progress and can be an optional add-on to our core services where you can:

- Capture: Capture your jobsite in the most and efficient way possible.
- View: See your jobsite in 360 degrees from anywhere, anytime. Photos become available instantly. Your project is fully documented and recorded for photographic proof of progress.
- Control: Easily compare photos side by side with your historical photos to make sure project progress is going as planned.

ADDITIONAL DIGITAL OFFERINGS

- Facade Inspections using infrared technology and drones
- Road Maintenance Inspections through visual recognition and AI Digital Scanning and 3D modelling.

5 Other Information

OUR LOCAL SERVICES:

• Cost and Commercial Management

• Sustainable Building Certification

• Development Management

• Project Management

• Construction Management

• Water Consultancy

• Conveyance and Network Consultancy

• Technical Due Diligence

• BIM Management

• Digital Solutions

QUALITY SYSTEM

ISO 9001:2015

ISO 14001:2015

PROPER Arcadis Philippines Inc. recognises the importance of Quality

PROPER Assurance, especially in a country where Quantity Surveying is

PROPER not a well recognized profession and quality service is of par-

PROPER amount importance. The establishment of a standard quality

PROPER control system for all aspects of the services being provided,

PROPER coupled with our in-house staff training programmes, ensures

PROPER that Arcadis Philippines Inc. continues to provide the best services

PROPER available to our clients.

PROPER The Certification for ISO 9001:2015 and ISO 14001:2015

PROPER was issued by the BSI (British Standard Institution). BSI is the

PROPER business standards company that helps over 80 clients worldwide

PROPER to adopt standards of best practice and turn them into habits of

PROPER excellence. BSI was appointed by Royal Charter as the world's

PROPER first national Standards Body to develop standards for the UK

PROPER and was a founding member of the International Organization for

PROPER Standardization (ISO). BSI is responsible for originating many of

PROPER the world's most commonly used standards including ISO 9001

PROPER and publishes over 2,500 product specification and business

PROPER process standards annually. These standards address today's

PROPER issues from sustainable events to nano-technology, spanning

PROPER sectors including aerospace, construction, healthcare, and IT.



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About Arcadis

Arcadis is the world's leading company delivering data-driven sustainable design, engineering, and consultancy solutions for built assets. We are more than 36,000 architects, data analysts, designers, engineers, project planners, water management and sustainability experts, all driven by our passion for improving quality of life. As part of our commitment to accelerating a planet positive future, we work with our clients to make sustainable project choices, combining digital and human innovation, and embracing future-focused skills across the environment, energy and water, buildings, transport, and infrastructure sectors. We operate across 30 countries, collaborating across borders to help serve the changing needs of our clients, wherever they are in the world.

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