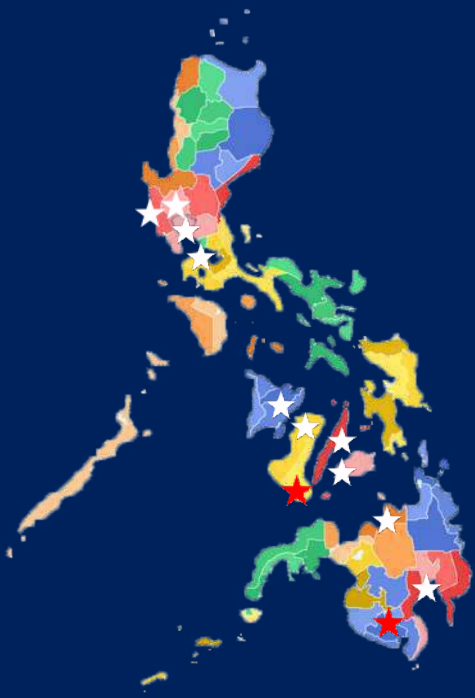
RLB Rider Levett Bucknall

RIDERS DIGEST 2018

PHILIPPINE
EDITION

Rider Levett Bucknall Philippines, Inc.
OFFICES NATIONWIDE



LEGEND:

★ RLB Phils., Inc Office:
- Manila
- Sta Rosa, Laguna
- Cebu
- Davao
- Cagayan de Oro
- Bacolod
- Iloilo
- Bohol
- Subic
- Clark

★ RLB Future Expansions:
- Dumaguete
- General Santos

RIDERS DIGEST PHILIPPINES 2018

A compilation of cost data and related information on the Construction Industry in the Philippines.

Compiled by:

Rider Levett Bucknall Philippines, Inc.

A proud member of Rider Levett Bucknall Group

Main Office:
Building 3, Corazon Clemeña Compound No. 54 Danny Floro Street, Bagong Ilog, Pasig City 1600 Philippines
T: +63 2 234 0141/234 0129
+63 2 687 1075
F: +63 2 570 4025
E: rlb@ph.rlb.com

Sta. Rosa, Laguna Office:
Unit 201, Brain Train Center Lot 11 Block 3, Sta. Rosa Business Park, Greenfield Brgy. Don Jose, Sta. Rosa City Laguna, 4026 Philippines
M: +63 922 806 7507
E: rlb.starosa@ph.rlb.com

Cebu Office:
Suite 602, PDI Condominium Archbishop Reyes Ave. corner J. Panis Street, Banilad, Cebu City, 6014 Philippines
T: +63 32 268 0072
E: rlbcebu@ph.rlb.com

Davao Office:
Room 308 3rd Floor Cocolife Bldg. CM Recto Claveria cor. J. Palma Gil St. Davao City
M: +63 917 550 7013

Bohol Office:
Cascajo, Panglao Island, Bohol 6340 Philippines
T:+63 977 8529548
E: rlb@ph.rlb.com

Bacolod Office:
2nd Floor, Mayfair Plaza, Lacson cor. 12th Street, Bacolod City, Negros Occidental 6100 Philippines
T: +63 34 432 1344
E: rlb.bacolod@ph.rlb.com

Iloilo Office:
2nd Floor (Door 21) Uy Bico Building, Yulo Street. Iloilo City Proper, Iloilo, 5000 Philippines
T:+63 33 320 0945
E: rlb@ph.rlb.com

Cagayan de Oro Office:
Rm. 702, 7th Floor, TTK Tower Don Apolinar Velez Street Brgy. 19 Cagayan De Oro City 9000 Philippines
T: +63 88 8563734
M: +63 998 573 2107
E: rlb.cdo@ph.rlb.com

Subic Office:
The Venue Bldg. Unit 418, Lot C-5, Commercial Area, Subic Bay Gateway Park, Phase 1, Subic Bay Freeport Zone, Zambales
T: +63 88 850 4105
+63 998 573 2107
E: coraballard@ph.rlb.com

Clark Office:
Units 202-203 Baronera Place Bldg., Mc Arthur Hi-way Dau, Mabalacat City, Pampanga
M: +63 918 965 3891

Cost information in this publication is indicative and for general guidance only. Prices and rates are as at 3rd Quarter of 2017 and expressed in Philippine Peso unless otherwise stated. References to legislative provisions and regulations are as at 31 December 2017 only.

Ninth Edition 2018

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MISCELLANEOUS

Message from the
CHAIRMAN AND PRESIDENT

Rider Levett Bucknall Philippines, Inc. proudly presents to you the ninth Philippine Edition of "**Riders Digest**," a compilation of cost data and related information in the Philippine Construction Industry.

Rider Levett Bucknall Philippines is a member of the Rider Hunt, Levett & Bailey, and Bucknall Austin Group now **RIDER LEVETT BUCKNALL (RLB)**, an independent global property and construction practice with 120 offices in 80 different countries covering six continents namely OCEANIA, which covers all of Australia and New Zealand; ASIA, which covers The Philippines, China, Hong Kong, Indonesia, Japan, Korea, Malaysia, Singapore, Taiwan, Thailand and Vietnam; EMEA, which covers Europe and Middle East; NORTH AMERICA which covers Phoenix, Boston, Chicago, Denver, Honolulu, New Jersey, Las Vegas, Los Angeles, Florida, Portland Oregon, San Francisco, Seattle, and Washington DC together with Canada; and SOUTH AFRICA which includes Cape Town, Johannesburg, and Pretoria.

Our group employs almost 4,000 people in its offices across the world, integrating local knowledge and expertise with access to the global network to provide the best and most up-to-date service our clients deserve. Our open communication and interaction between offices transform to greater experience across every sector in the Construction Industry. The Philippine office is now operating in its 28th year, having commenced its operation in 1989.

We have provided our Quantity Surveying and Project/ Construction Management Services on over 850 projects in the Philippines, from Office Towers, Residential Condominiums, Hotels, Residential Estates, Industrial Development Plants, Institutional Schools, Ports and Harbors, Roads and Bridges, Airports and Airports Buildings, Commercial Centers, Hospitals, BPOs, and Land Development Works. We have also served a number of overseas projects within the Pacific Rim including Guam, Saipan, Palau, Hawaii, Australia, Malaysia, Vietnam, and as far as the Middle East, Pakistan, and Syria.

Our corporate vision is to be the leading global practice in our respective market and deliver sustainable and

competitive advantage to our clients through the passion of our people and our focus on integrity, professionalism, innovation, team work, and client satisfaction. We have adopted our core values and objectives, together with our global network and in-depth knowledge, making Rider Levett Bucknall Philippines, Inc. truly unique and consistent in providing quality services to our clients.

Our combined experience and expertise enable us to provide excellent and efficient services. We protect our integrity, optimize the use of resources, and create maximum performance and value throughout the life cycle of every project we handle. Rider Levett Bucknall Philippines, Inc. is committed to developing tools and techniques that help our clients save costs while getting their desired results, not only at present, but also in the future.

The entire Rider Levett Bucknall Group ensures that a significant fund is allocated for research and development programs, uses the latest technology, and develops training to maintain quality staff performance.

The publication of our Riders Digest and International Report on Construction Market Intelligence from our global network of offices will continue to be beneficial by providing professional input, expert advise, and value added services to our clients. As key resources in the International Construction Industry, these will prioritize benchmarking of construction services throughout the International market.

Rider Levett Bucknall Philippines, Inc. hopes that you find this publication informative and useful, aiding in the successful completion of your construction needs.

Corazon Clemeña Ballard
CHAIRMAN & PRESIDENT
Rider Levett Bucknall
Philippines, Inc.

QUALITY POLICY STATEMENT

RLB Rider Levett Bucknall

RIDER LEVETT BUCKNALL PHILIPPINES, INC.

QUALITY POLICY STATEMENT

RIDER LEVETT BUCKNALL PHILIPPINES' Policy is to provide optimal services in accordance with stated customer requirements. Guided by our principles of excellence, quality and sustainability, we foster lasting customer confidence and business relations while meeting our contractual obligations. The services we offer in full or in combination are as follows:

- Quantity Surveying (QS)
- Project Management (PM)
- Construction Management (CM)
- Special Services within our expertise

We are ambitious and dedicated to push outside the boundaries of limitations to capture and implement innovations relevant to our company goals and stakeholder needs and expectations.

We are steadfast in our compliance to our managements systems and our Chairman and President has the ultimate authority and responsibility to ensure continuing effectiveness and improvement of our policies and processes conformable to international and global standards.

It is part of our company's training programme that this policy is understood, implemented and maintained at all levels in the organization. It is also communicated to our stakeholders for their information and cooperation.

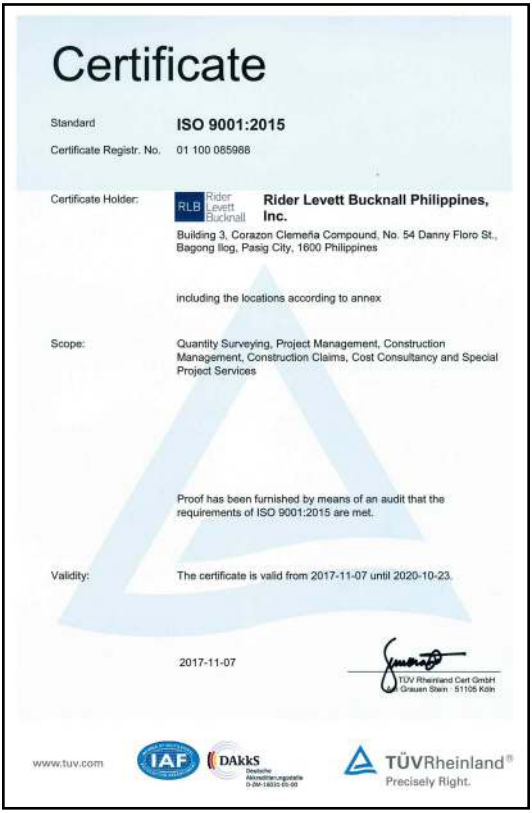
This statement represents our executive management commitment, on behalf of the Corporation, to the Quality Policy.

Signed :

CORAZON C. BALLARD
Chairman & President

Date : 10 July 2017

ISO 9001:2015 CERTIFICATE



Certificate

Standard: ISO 9001:2015

Certificate Registr. No.: 01 100 085988

Certificate Holder: Rider Levett Bucknall Philippines, Inc.

Building 3, Corazon Clemeña Compound, No. 54 Danny Floro St., Bagong Ilog, Pasig City, 1600 Philippines

including the locations according to annex

Scope: Quantity Surveying, Project Management, Construction Management, Construction Claims, Cost Consultancy and Special Project Services

Proof has been furnished by means of an audit that the requirements of ISO 9001:2015 are met.

Validity: The certificate is valid from 2017-11-07 until 2020-10-23.

2017-11-07

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ISO 9001:2015 CERTIFICATE

Annex to certificate

Standard **ISO 9001:2015**

Certificate Registr. No. 01 100 085988

No.	Location	Scope
/01	**Rider Levett Bucknall Philippines, Inc.** Building 3, Corazon Clemeña Compound, No. 54 Danny Floro St., Bagong Ilog, Pasig City, 1600 Philippines	Quantity Surveying, Project Management, Construction Management, Construction Claims, Cost Consultancy and Special Project Services
/02	**Rider Levett Bucknall Philippines, Inc.** Suite 602, PDI Condominium, Archbishop Reyes Ave., corner J. Panis Street, Banilad, Cebu City 6014 Philippines	Quantity Surveying, Project Management, Construction Management, Construction Claims, Cost Consultancy and Special Project Services

2017-11-07

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Philippine Construction Trends

Number of Construction Projects by Type

Distribution of Construction Projects by Region

Value of Construction By Type of Building

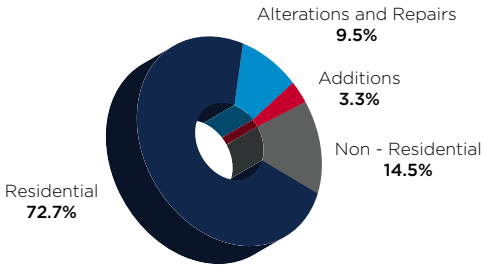
Number and Value of Residential Construction

Number and Value of Non-Residential Construction By Type

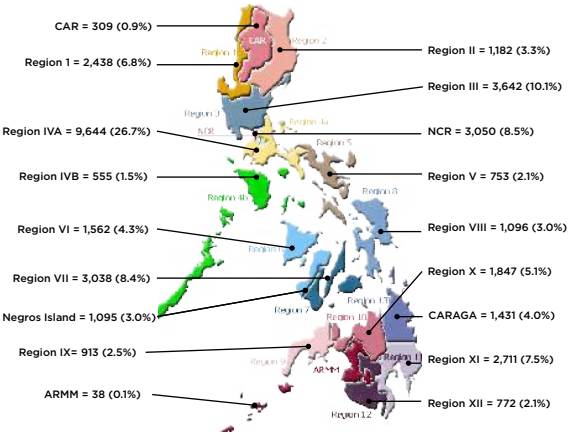
PHILIPPINE CONSTRUCTION TRENDS

Number of Construction Projects by Type
Third Quarter 2017

TYPE	NUMBER
Additions	1, 176
Alterations and Repairs	3, 442
Non-Residential	5, 231
Residential	26, 227
TOTAL:	**36, 076**



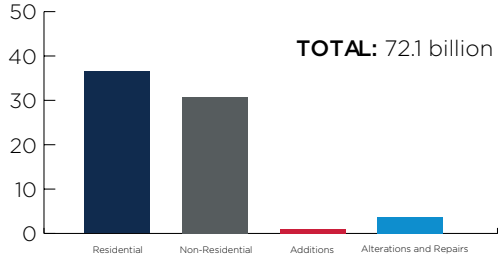
Distribution of Construction Projects by Region
Third Quarter 2017



Total in the Philippines: 36,076

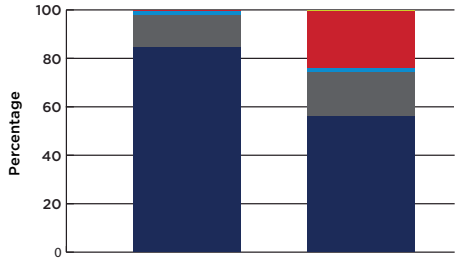
Data Source: PSA

Value of Construction Projects by Type
Third Quarter 2017



TYPE	Residential	Non-Residential	Additions	Alterations & Repairs
VALUE (in billion pesos)	36.5	30.8	1.0	3.8

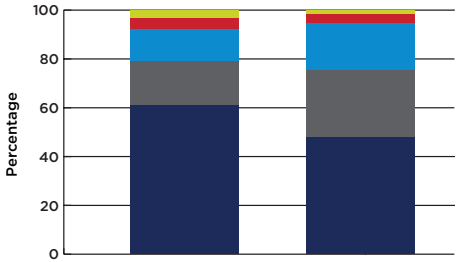
Number and Value of Residential Construction by Type
Third Quarter 2017



TYPE	Number of Residential Construction	Value of Residential Construction
Single House	22,182 (84.5%)	20.5 billion (56.1%)
Apartment/ Accessoria	3,434 (13.1%)	6.6 billion (18.1%)
Duplex/ Quadruplex	510 (1.9%)	0.6 billion (1.6%)
Residential Condominium	26 (0.1%)	8.6 billion (23.6%)
Other Residential	75 (0.3%)	0.21 billion (0.6%)
	TOTAL: 26,227	**TOTAL: 36.5 billion**

Data Source: PSA

Number and Value of Non-Residential Construction by Type, Third Quarter 2017



TYPE	Number of Residential Construction	Value of Residential Construction
Commercial	3,187 (60.9%)	14.8 billion (47.9%)
Institutional	965 (18.4%)	8.5 billion (27.5%)
Industrial	679 (13.0%)	5.9 billion (19.1%)
Agricultural	231 (4.4%)	1.2 billion (3.9%)
Other Residential	169 (3.2)	0.5 billion (1.6%)
	TOTAL: 5,231	**TOTAL: 30.8 billion**

Data Source: PSA

Philippine Construction Cost Data

Definition of Terminologies

Building Construction Prices

External Works

Construction Elements

Construction Materials Wholesale Price Index

Summary of Current Regional Daily Minimum Wage Rates

Building Services

Definition of Terminologies - Building Services

Office Fit-Out, Workstations

Office Refurbishment

Definition of Terminologies

Central Business District (CBD)
The Central Business District is within the Metro Manila cities of the Philippines. It consists of seven planning areas, namely Makati City, Global City-Taguig, Quezon City, Pasig City, Mandaluyong City, San Juan, and Manila. It is the prime area of all the commercial and financial activities in the region and includes developments from nearby provinces around the perimeter of Metro Manila.

Construction Floor Area (CFA)
CFA is the area of all building enclosed covered spaces measured to the outside face of the external walls, including covered basement and above ground car park, areas.

Gross Floor Area (GFA)
GFA is the sum of fully enclosed covered areas and the unenclosed covered areas of the building for purposes of planning submissions (refer to Page 59: Measurement of Building Areas for more information).

Net Lettable Area (NLA)
NLA is the total tenancy area designated for rentable purposes.

Building Works
Building Works include substructure (piling, foundation, and basement), super-structure, architectural works, finishes and fittings, external works, site works, preliminaries, attendance, and other builder's work in connection with services.

Building Services
Building Services include mechanical services, including heating, air conditioning, mechanical, ventilation, fire protection system, sanitary, and plumbing; and electrical services, which include electrical installation, vertical transportation, and building management systems. Exclusions; Special equipment – Chutes, incinerators, compactors, pneumatic refuse disposal system, facade maintenance equipment, engineered smoke control systems etc., IT services – high speed cables etc.

The office within the CBD refers to good quality office buildings located at the Central Business District, for the upper range of the rental market and leading owner occupiers, such as head quarter offices for financial institutions and major companies.

Offices outside CBD refer to medium quality office buildings that are built for the middle range of the rental market.

Hotels
Types of hotels listed are based on 'five-star', 'four-star' and 'three-star' international hotel ratings.

Retail – Shopping Malls
Shopping malls with typical amenities and finishes in common spaces. Exclusions: Tenant equipment, shop fittings and finishes in tenancy spaces.

Industrial Buildings
Quality reflects a simplified type of construction suitable for light or heavy industries, Exclusions: Special and operating equipment, processing plant and proprietary systems.

Residential
Ratio of kitchen, laundry and bathroom areas to living areas and the quality of finishes required will affect the cost range. Range given is significantly affected by the height and configuration of the building. Exclusions: Show apartments. Loose furniture, special light fittings, household electrical appliances, kitchen equipment and building owners' special requirements.

Institutions of Higher Learning
Tertiary educational schools such as universities, polytechnics, and other colleges that require full range of educational facilities and amenities.

Car Park
Above Grade – minimal external walling excluding mechanical ventilation.

Basement – diaphragm wall or contiguous bored piles wall with standard mechanical ventilation provisions.

PHILIPPINE CONSTRUCTION COST DATA

Building Construction Prices

All construction prices for the Philippines are indicative only and are as at Third Quarter 2017. Items generally excluded from the order of costs are land costs, legal and professional fees, development charges, authority fees, finance costs, loose furniture, fittings, art works, tenancy works such as but not limited to sub-divisional partitions in office building and shop fit-out in retail spaces,

DEVELOPMENT TYPE
Office Buildings
10 - 35 Storeys (NCR)
10 - 35 Storeys (Province)
Hotels including FF&E
Five (5) Star
Villas
Retail - Shopping Malls
Retail Strip (NCR)
Shopping Malls (NCR)
Shopping Malls (Province)
Industrial
Commissary
BPO
with Fit-Out Works
without Fit-Out Works
Clubhouse
Clubhouse (Premier)
Clubhouse (Secondary)
Residential
High-End Residential Building
Mid-End Residential Building
Low-End Residential Building
Rowhouse (one - four storey)
Duplex
Single Detached
Institutional
Schools
Hospitals with FF&E

Exclusions: * Land Cost * Legal and Professional Fees * Development Charges * Local Authority Fee * Finance Cost * Loose Furniture, Fittings and Works of Art * Tenancy Work * Site Infrastructure Work * Diversion of Existing Services * Resident Site Staff Cost * Models and Prototypes * Future Cost Escalation * Goods and Services Tax

private telephone systems, site infrastructure work, diversion of existing services, resident site staff cost, models and prototypes, and future cost escalation (unless otherwise stated). All prices stated below include a general allowance for foundation and external works.

RANGE OF COSTS PER CONSTRUCTION FLOOR AREA (PHP PER SQUARE METRE)	
Low	High
35,000	51,600
26,200	32,600
80,200	94,300
105,000	139,000
47,200	62,500
36,200	65,500
29,500	53,300
49,700	63,500
35,500	50,100
26,500	44,900
128,000	289,000
51,100	67,600
36,500	67,500
29,800	45,100
28,800	34,600
39,700	47,100
28,100	37,200
33,000	58,900
38,200	46,800
34,600	52,300

Note: As foreign currency exchange rates fluctuate on a daily basis, we have not converted the Philippine Peso rate to foreign currencies.

External Works

LANDSCAPING Philippine Peso per Square Metre	Low	High
Dense, Shrubs, Topsoil and Grassing	6,206	7,140
Grassing, Large Areas, Topsoil, Sowing, Treating	4,137	4,767
Price per Hectare (in Millions of Pesos)	Low	High
Light, Large Areas, Minimal Planting	13	14
CAR PARKS - ON GROUND Philippine Peso per Car	**Low**	**High**
Light Duty Paving	90,080	95,739
Heavy Duty Paving	95,739	101,378
ROADS (Premix finish including kerbs, channels, and drainage) Philippine Peso per Metre	**Low**	**High**
Residential estate, 6.80 meters wide excluding foot-paths and nature Strips	90,080	95,739
Industrial estate 10.40 meters wide including minimal to extensive formation	95,739	101,378

Construction Elements

The following rates are indicative only and include an allowance for profit and overheads but exclude preliminaries. The rates are not valid for tendering or pricing of variations.

SUB-STRUCTURE Philippine Peso per Cubic Metre	Low	High
Reinforced concrete (10000 PSI)	7,083	7,437
Reinforced concrete (8000 PSI)	5,603	5,883
Reinforced concrete (6000 PSI)	4,510	4,972
Reinforced concrete (5000 PSI)	4,416	4,637
Reinforced concrete (4000 PSI)	3,679	3,863
Reinforced concrete (3000 PSI)	3,276	3,439
Reinforced concrete (1,500 PSI)	3,228	3,390

Construction Elements

COLUMNS Philippine Peso per Metre	**Low**	**High**
Reinforced concrete, 900mm x 900mm	20,538	25,137
Steel with reinforced concrete casing	29,253	33,579

UPPER FLOORS Philippine Peso per Square Metre	**Low**	**High**
150mm reinforced concrete suspended floor slab (3000 PSI)	3,329	7,644
Concrete slab on Metal deck with structural steel supports and 2-hour fire spray	12,170	13,881

STAIRCASES Number per Flight	**Low**	**High**
1050mm wide reinforced concrete stair with painted steel tube balustrade (average rise 3.70m)	243,096	277,129
1050mm wide reinforced concrete scissor stair with painted tube handrail (average rise 3.70m)	56,672	428,927
2000mm wide grand public stair with glass and brass balustrade (4.00m rise)	2,983,785	3,867,780
ROOFS Philippine Peso per Square Metre	**Low**	**High**
RC Slab (3000 PSI) graded to fall and built-up roofing membrane	5,544	8,831
Structural steel, purlins and insulated metal deck roof	11,088	17,136
EXTERNAL WALLS Philippine Peso per Square Metre	**Low**	**High**
150mm concrete hollow block walls jointed in cement mortar including reinforcement	1,187	1,828
100mm concrete hollow block walls jointed in cement mortar including reinforcement	1,655	1,738
Single glazed window unit (casement type)	11,780	20,297
Double glazed window unit (casement type)	16,622	25,468

PHILIPPINE CONSTRUCTION COST DATA

EXTERNAL WALLS Philippine Peso per Square Metre	Low	High
Aluminum with 10mm tempered glass curtain wall system	15,756	34,913

EXTERNAL DOORS (Excluding Ironmongery) Philippine Peso per Number	Low	High
Single leaf steel doors	12,055	30,996
Double leaf steel doors	21,022	89,009
Double leaf glazed doors	92,345	96,962
Double leaf auto operating doors	328,818	464,226

INTERIOR WALLS Philippine Peso per Square Metre	Low	High
250mm reinforced concrete wall (3000 PSI)	6,164	7,392
100mm brick or block wall	1,082	1,654
Stud plasterboard wall	2,258	2,772
Fire rated steel stud wall	4,725	6,164
2 hour shaft wall	6,983	8,211

INTERNAL DOORS (Excluding Ironmongery) Philippine Peso per Number	Low	High
Single leaf solid core wood flush door	7,802	16,290
Single leaf half hour fire rated steel door	13,561	30,996
Double leaf auto operating door	254,100	349,650

INTERIOR SCREENS Philippine Peso per Number	Low	High
Laminated toilet partition with one cubicle	23,300	36,761
Stone finish toilet partition	50,820	56,154

WALL FINISHES Philippine Peso per Square Metre	Low	High
Cement and sand plaster and emulsion paint	777	1,024
Cement render and vinyl fabric	1,533	2,258
Cement render and ceramic/homogenous tile	1,120	3,077
Stone wall cladding (granite, marble, etc.)	8,831	11,088
Marble wall cladding	11,088	14,375

CEILING FINISHES Philippine Peso per Square Metre	Low	High
Fiber cement plaster board ceiling Painted	1,300	1,796
One way exposed grid with mineral fiber board acoustic ceiling	1,796	3,204
Molded plasterboard ceiling system	4,725	6,258
Aluminium louvre ceiling system	6,878	8,831
FLOOR FINISHES Philippine Peso per Square Metre	**Low**	**High**
Carpet tile	1,953	2,258
Ceramic / Homogeneous tile	1,175	4,410
Granite tile	8,731	22,071
Access floors	3,896	7,182

SPECIALIST SERVICES		
SANITARY AND PLUMBING Philippine Peso per Number	**Low**	**High**
Average cost per plumbing point including fixture, soil waste and vent	38,703	48,353
Average cost for storm water drains, industrial	567	977

VERTICAL TRANSPORTATION Philippine Peso per Number	Low	High
Glass sided escalator (4m rise)	13,965,000	14,700,000
17 passenger lift	8,925,000	29,271,375
Hydraulic lift serving	2,940,000	3,675,000
OTHER ITEMS Philippine Peso per Cubic Metre	**Low**	**High**
Structural excavation	368	567
Philippine Peso per Square Metre	**Low**	**High**
Waterproofing Membrane / Fluid Applied	567	1,334

Construction Materials Wholesale Price Index

National Capital Region, Year 2017 (2000=100)

COMMODITY GROUP	AVE	DEC	NOV	OCT	SEP
Sand and Gravel	229.0	229.9	229.9	229.9	229.9
Concrete Products	221.4	227.4	227.4	225.1	220.1
Cement	196.7	196.5	194.2	193.3	195.4
Hardware	228.7	230.9	230.1	229.5	230.4
Plywood	193.9	195.1	193.6	193.4	193.1
Lumber	251.2	253.3	253.2	252.7	252.0
G.I. Sheet	186.6	187.4	186.6	186.5	185.7
Reinforcing Steel	278.4	282.8	282.8	278.0	278.0
Structural Steel	284.6	292.1	292.1	292.1	287.2
Tileworks	190.2	190.0	191.3	191.5	191.5
Glass and Glass Products	185.2	185.2	185.2	185.2	185.2
Doors, Jambs and Steel Casement	209.7	211.9	210.9	210.4	210.6
Electrical Works	212.9	213.5	213.4	213.3	213.3
Plumbing Fixtures & Accessories / Waterworks	185.9	186.1	185.6	185.8	185.5
Painting Works	210.0	210.0	210.5	210.4	211.1
PVC Pipes	184.0	184.2	184.2	184.2	184.2
Fuels and Lubricants	309.2	334.3	333.5	326.9	320.6
Asphalt	466.8	466.8	466.8	466.8	466.8
Machinery and Equipment Rental	168.7	168.7	168.7	168.7	168.7

Source: Philippine Statistics Authority, Industry and Trade Statistics Department

AUG	JUL	JUN	MAY	APR	MAR	FEB	JAN
230.4	230.0	229.2	228.9	228.4	227.8	227.3	226.6
220.4	219.6	219.6	219.6	219.6	219.6	219.1	218.7
194.3	195.3	196.6	197.5	198.5	199.2	199.4	200.1
229.6	228.2	228.2	227.6	227.6	227.4	227.4	227.1
193.9	193.7	193.7	193.7	194.1	194.1	194.1	194.3
252.0	250.2	250.2	251.2	251.2	251.2	248.5	248.8
186.7	186.7	187.0	186.7	186.7	186.7	186.7	186.3
276.4	273.6	276.0	280.0	279.3	278.6	278.0	277.7
284.0	281.2	281.2	281.2	281.2	281.2	281.2	280.4
191.5	190.3	190.3	189.2	189.2	189.2	189.2	189.2
185.2	185.2	185.2	185.2	185.2	185.2	185.2	185.2
209.9	210.4	210.3	210.3	210.3	207.7	207.4	205.7
212.9	213.0	213.0	212.9	212.9	212.6	212.2	211.9
185.7	186.1	186.1	186.3	186.3	186.3	185.8	185.2
210.6	210.3	209.9	209.7	209.7	209.7	209.3	208.9
184.2	184.2	184.2	184.1	184.1	184.1	182.9	182.9
310.9	299.5	292.2	296.6	298.7	297.8	301.2	298.6
466.8	466.8	466.8	466.8	466.8	466.8	466.8	466.8
168.7	168.7	168.7	168.7	168.7	168.7	168.7	168.7

Summary of Current Regional Daily Minimum Wage Rates

Non-Agriculture, Agriculture
As at January 2018, In Pesos

REGION	WAGE ORDER NO.	DATE OF EFFECTIVITY	NON-AGRI	AGRICULTURE	
				PLANT	NON-PLANT
NCR	WO 21	October 05, 2017	P 475.00 - 512.00	P 475.00	P 475.00
CAR	WO 18	June 5, 2017	270.00 - 300.00	270.00 - 300.00	270.00 - 300.00
I	WO 18	October 02, 2016	243.00 - 280.00	252.00	243.00
II	WO 18	September 25, 2017	340.00	320.00	320.00
III	WO 20	May 01, 2017	329.00 - 380.00	314.00 - 350.00	302.00 - 334.00
IV-A	WO 17	July 01, 2016	293.00 - 378.50	293.00 - 353.50	293.00 - 333.50
IV-B	WO 08	September 24, 2017	247.00 - 290.00	247.00 - 290.00	247.00 - 290.00
V	WO 18	June 2, 2017	280.00 - 290.00	280.00 - 290.00	280.00 - 290.00
VI	WO 23	March 16, 2017	271.50 - 323.50	281.50	271.50
VII	WO 20	March 10, 2017	308.00 - 366.00	288.00 - 348.00	288.00 - 348.00
VIII	WO 19	February 12, 2017	285.00	251.00	245.00
IX	WO 19	October 01, 2016	296.00	283.00	283.00
X	WO 19	July 16, 2017	316.00 - 338.00	304.00 - 326.00	304.00 - 326.00
XI	WO 19	December 16, 2016	340.00	335.00	335.00
XII	WO 19	October 09, 2016	295.00	272.00	272.00
CARAGA	WO 15	December 08, 2017	290.00	290.00	290.00
ARMM	WO 16	March 01, 2016	265.00	255.00	255.00

Note: WO - Wage Order
RA - Republic Act
COLA - Cost Of Living Allowance
ECOLA - Emergency Cost Of Living Allowance

Summary of Daily Minimum Wage Rates

Per Wage Order, By Region, Non-Agriculture
(1989 - 2017)

National Capital Region

RA/ WO	DATE	AMOUNT		
		BASIC	ALLOWANCE	TOTAL
RA 6727	July 1, 1989	P 89.00		P 89.00
WO 01	Nov. 1, 1990	106.00		106.00
WO 02	Jan. 8, 1991	118.00		118.00
WO 03	Dec. 16, 1993	135.00		135.00
	April 1, 1994	145.00		145.00
WO 04	Feb. 2, 1996	161.00		161.00
	May 1, 1996	165.00		165.00
WO 05	Feb. 6, 1997	180.00		180.00
	May 1, 1997	185.00		185.00
WO 06	Feb. 6, 1998	198.00		198.00
WO 07	Oct. 31, 1999	198.00 - 223.50		198.00 - 223.50
WO 08	Nov. 1, 2000	213.00 - 250.00		213.00 - 250.00
WO 09	Nov. 5, 2001	213.00 - 250.00	15.00	228.00 - 265.00
	Feb. 1, 2002	213.00 - 250.00	30.00	243.00 - 280.00
WO 10	Jul. 10, 2004	213.00 - 250.00	50.00	263.00 - 300.00
WO 11	Jun. 16, 2005	238.00 - 275.00	50.00	288.00 - 325.00
WO 12	Jul. 11, 2006	288.00 - 300.00	50.00	313.00 - 350.00
WO 13	Aug. 28, 2007	325.00 - 362.00		325.00 - 362.00
WO 14	June 14, 2008	340.00 - 377.00	5.00	345.00 - 382.00
	Aug. 28, 2008	345.00 - 382.00		345.00 - 382.00
WO 15	Jul. 1, 2010	367.00 - 404.00		367.00 - 404.00
WO 16	May 26, 2011	367.00 - 404.00	22.00	389.00 - 426.00
WO 17	Jun. 3, 2012	389.00 - 426.00	20.00	409.00 - 446.00
	Nov. 1, 2012	389.00 - 426.00	30.00	419.00 - 456.00
WO 18	Oct. 4, 2013	399.00 - 436.00	30.00	429.00 - 466.00
	Jan. 1, 2014	414.00 - 451.00	15.00	429.00 - 466.00
WO 19	April 4, 2015	444.00 - 466.00	15.00	459.00 - 481.00
WO 20	June 2, 2016	444.00 - 481.00	10.00	454.00 - 491.00
WO 21	October 5, 2017	465.00 - 502.00	10.00	475.00 - 512.00

PHILIPPINE CONSTRUCTION COST DATA

Region VII – Metro Cebu

RA/ WO	DATE	AMOUNT		
		BASIC	ALLOWANCE	TOTAL
RA 6727	Jul. 1, 1989	P 89.00		P 89.00
WO 01	Nov. 8, 1990	89.00 - 105.00		89.00 - 105.00
WO 02	Feb. 1, 1991 - Sept. 30, 1991	89.00 - 105.00	250/mo. or 9.55/day	98.55 - 114.55
WO 02A	Oct. 1, 1991	89.00 - 105.00	5.73	94.73 - 110.73
WO 03	Dec. 19, 1993	89.00 - 120.73		89.00 - 120.73
WO 04	Jan. 1, 1996	94.00 - 131.00		94.00 - 131.00
	Jul. 1, 1996	99.00 - 136.00		99.00 - 136.00
	Oct. 1, 1996	104.00 - 141.00		104.00 - 141.00
WO 05	Mar. 15,1997	115.00 - 145.00		115.00 - 145.00
WO 05-A	Jul. 1, 1997	111.00 - 150.00		111.00 - 150.00
	Oct. 1, 1997	111.00 - 155.00		111.00 - 155.00
WO 06	Apr. 1, 1998	116.00 - 160.00		116.00 - 160.00
	Oct. 1, 1998	121.00 - 165.00		121.00 - 165.00
	April 1, 1999	126.00 - 165.00		126.00 - 165.00
	Oct. 1, 1999	131.00 - 165.00		131.00 - 165.00
WO 07	Jan. 1, 2000	136.00 - 170.00		136.00 - 170.00
WO 08	Apr. 1, 2000	140.00 - 170.00		140.00 - 170.00
WO 07	Jul. 1, 2000	145.00 - 175.00		145.00 - 175.00
WO 08	Nov. 10, 2001	150.00 - 180.00		150.00 - 180.00
WO 08	Jan. 1, 2001	155.00 - 185.00		155.00 - 185.00
WO 06	June 1, 2001	160.00 - 190.00		160.00 - 190.00
WO 08	Dec. 1, 2001	165.00 - 195.00		165.00 - 195.00
WO 09	Jan. 6, 2002	170.00 - 200.00		170.00 - 200.00
WO 10	Aug. 8, 2004	178.00 - 208.00		178.00 - 208.00
WO 11	June 16, 2005	190.00 - 223.00		190.00 - 223.00
WO 12	Aug. 2, 2006	200.00 - 241.00		200.00 - 241.00
WO 13	Nov. 11, 2007	205.00 - 250.00		205.00 - 250.00
WO 14	June 16, 2008	222.00 - 267.00		222.00 - 267.00
WO 15	Sep. 1 , 2010	240.00 - 285.00		240.00 - 285.00
WO 16	Sep. 22 , 2011	260.00 - 305.00		260.00 - 305.00
WO 17	Dec. 7, 2012	282.00 - 327.00		282.00 - 327.00
WO 18	Mar. 21, 2014	282.00 - 327.00	13.00	295.00 - 340.00
WO 18-A	Dec. 14, 2014	295.00 - 340.00		295.00 - 340.00
WO 19	Oct. 10, 2015	308.00 - 353.00		308.00 - 353.00
WO 20	March 10, 2017	308.00 - 366.00		308.00 - 366.00

Region XI – Davao Region

RA/ WO	DATE	AMOUNT		
		BASIC	ALLOWANCE	TOTAL
RA6727	July 1, 1989	P 89.00		P 89.00
WO 01	Nov. 21, 1990	99.00 - 104.00		99.00 - 104.00
WO 02	Feb. 15, 1991 - May 15, 1991	99.00 - 104.00	7.92 - 8.32	106.92 - 112.32
WO 03	Dec. 1, 1993	99.00 - 104.00	25.00	124.00 - 129.00
WO 04	Jan. 1, 1995	114.00 - 119.00		114.00 - 119.00
WO 05	Jan. 1, 1997	123.00 - 129.00		123.00 - 129.00
	June 1, 1997	123.00 - 135.00		123.00 - 135.00
WO 06	Jan. 1, 1998	126.00 - 135.00	10.00	136.00 - 145.00
WO 07	Nov. 1, 1999	146.00 - 148.00	10.00	156.00 - 158.00
WO 08	Nov. 1, 2000	158.00 - 160.00	10.00	168.00 - 170.00
	May 1, 2001	168.00 - 170.00	10.00	178.00 - 180.00
WO 09	Jan. 1, 2002	168.00 - 170.00	25.00	193.00 - 195.00
WO 10	Jan. 1, 2004	193.00 - 195.00		193.00 - 195.00
WO 11	Feb. 5, 2005	207.00 - 209.00		207.00 - 209.00
WO 12	July 2, 2005	207.00 - 209.00	15.00	222.00 - 224.00
WO 13	July 27, 2006	222.00 - 224.00	16.00	238.00 - 240.00
WO 14	Sep. 16, 2007	222.00 - 224.00	26.00	248.00 - 250.00
WO 15	June 16, 2008	240.00	25.00	265.00
	Sep. 16, 2008	250.00	15.00	265.00
WO 16	Sep. 1, 2010	271.00	15.00	286.00
WO 17	Jan. 1, 2012	286.00	5.00	291.00
	May. 1, 2012	286.00	15.00	301.00
WO 18	June 1, 2014	312.00		312.00
	Dec. 1, 2014	312.00	5.00	317.00
WO 19	Dec. 16, 2016	335.00	5.00	340.00
	May 1, 2017	340.00		340.00

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

Building Services

As at Third Quarter 2017, in Philippine Pesos per Square Metre

DEVELOPMENT TYPE	RANGE OF COSTS PER CONSTRUCTION FLOOR AREA										
	HVAC		Sanitary and Plumbing		Fire Protection		Electrical		Vertical Transport		Total Services
OFFICE BUILDINGS	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	
10 - 35 Storeys (NCR)	3,198	4,675	1,379	1,581	1,033	1,338	5,568	6,230	1,360	1,418	
10 - 35 Storeys (Province)	722	2,243	649	839	590	689	2,169	5,126	812	1,524	
HOTELS INCL. FF&E											
Five Star	4,256	6,925	2,190	4,277	1,733	2,838	11,480	12,414	1,882	1,916	
Villas	3,217	4,254	4,606	6,091	3,626	4,796	4,917	6,502			
RETAIL - SHOPPING MALLS											
Retail Strip (NCR)	2,768	3,661	3,667	4,849			12,697	16,792			
Shopping Malls (NCR)	1,973	3,372	2,364	4,934	1,214	1,812	4,969	12,897	148	399	

Note: The order of costs for Building Services provided herein is indicative and based on Construction Floor Area Assumptions. Detailed Requirements and Specifications for Building Services need to be considered and provided in conceptual designs to derive at cost estimates for specific project budgetary purposes.

DEVELOPMENT TYPE	**RANGE OF COSTS PER CONSTRUCTION FLOOR AREA**										
	HVAC		Sanitary and Plumbing		Fire Protection		Electrical		Vertical Transport		**Total Services**
RETAIL - SHOPPING MALLS	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	
Shopping Malls (Province)	1,607	2,746	1,925	4,018	989	1,476	4,047	10,503	120	325	
RESIDENTIAL											
High-End Residential Building	1,818	3,956	1,662	5,278	789	818	4,209	6,280	818	2,652	
Mid-End Residential Building	1,005	3,844	1,089	3,893	443	772	2,307	6,259	335	1,696	
Low-End Residential Building	585	1,153	810	2,034	308	730	1,589	3,871	211	1,700	
Rowhouse (one - four storey)	2,441	3,436	3,444	4,629			3,684	6,291			

DEVELOPMENT TYPE	RANGE OF COSTS PER CONSTRUCTION FLOOR AREA										
	HVAC		Sanitary and Plumbing		Fire Protection		Electrical		Vertical Transport		Total Services
RESIDENTIAL	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	
Duplex	-	-	1,614	2,134			790	1,045			
Single Detached	32,978	58,855	6,288	7,565			647	2,761			
INDUSTRIAL											
Commissary	3,996	4,409	1,561	2,557	4,588	14,753	6,619	8,120			
BPO											
with Fit-Out Works	2,361	7,624	1,444	1,846	684	708	2,049	6,261	1,890	1,958	
without Fit-Out Works											
CLUBHOUSE											
Clubhouse (Premier)	10,114	13,376	3,321	7,657	8,876	11,738	12,847	47,082			
Clubhouse (Secondary)	-	-	2,199	2,908	-	-	10,369	13,713			

DEVELOPMENT TYPE	RANGE OF COSTS PER CONSTRUCTION FLOOR AREA										
	HVAC		Sanitary and Plumbing		Fire Protection		Electrical		Vertical Transport		Total Services
INSTITUTIONAL	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	Minimum	Maximum	
Schools	2,365	4,253	730	1,197	110	513	1,001	5,970	798	2,044	
Hospitals with FF&E	2,817	5,275	1,504	3,201	1,121	1,151	5,208	11,854	1,070	1,076	

Building Services

Definition of Terminologies

HVAC (Heating Ventilation and Air Conditioning)
HVAC includes chiller plant, cooling towers, chilled water, condenser water pumps and pipework, air-handling unit systems, and fan coil systems.

It also includes AC ductwork, diffusers, split type air-conditioning units and ductwork, mechanical ventilation ('MV') fan system, MV ductwork, diffusers and accessories, AC electrical, and automatic control works where appropriate.

Sanitary & Plumbing
Sanitary & Plumbing works refer to water tanks and pumps, hot/cold water distribution piping, installation of water piping to sanitary ware and fittings, installation of waste piping to sanitary ware, aboveground and underground drainage piping system where appropriate.

Fire Protection System
Fire Protection system includes sprinkler, external fire hydrants, hosereels, wet and dry risers, automatic fire alarms, and fire extinguishers where appropriate. .

Electrical Installation
Electrical Installation refers to power transformer, substation, HV & LV switch gear, distribution/sub-main cables, final sub-circuits, cable support systems and containments. Lighting protection system, earthing system, luminaries and lighting control system, standby generators, telecommunications system, public address system, intercom system, and MATV/CATV system may also fall under Electrical Installation, where appropriate.

Vertical Transportation
Vertical Transport spans Lifts, Escalators, Travelators, Dumbwaiters, etc, where appropriate.

Building Management Systems (BMS)
BMS include Control Systems (mainly for HVAC services) where appropriate.

Exclusions
Security Systems, IT systems, AV systems, car parking System, compactors, chutes; special equipment such as proprietary systems, medical gases, incinerators, pneumatic refuse disposal system, facade maintenance equipment, engineered smoke control systems etc.; supply of kitchen equipment.

Office Fit-Out

The following costs that include workstations are an indication of those currently achievable for good quality office accommodation.

Type of Tenancy	Open Planned Php/ m2	Fully Partitioned Php/m2
Computer Areas	17,100 - 19,700	20,300 - 23,600
Executive Areas and Front of House	30,900 - 35,600	36,400 - 41,900
Insurance Offices; Government Departments	17,100 - 19,700	20,300 - 23,600
Major Company Headquarters	25,600 - 29,600	31,200 - 42,500
Solicitors, Financiers	25,600 - 29,600	31,200 - 35,900

Workstations

3,500mm. average length including screens generally 1,220m. high (managerial 1,620mm high), desks, storage cupboards, shelving etc. Supply of chairs is excluded.

Type of Workstation	Php / Workstation
Call Centre	39,800 - 45,800
Executive	122,900 - 142,100
Secretarial	56,900 - 65,400
Technical Staff	78,000 - 89,700

Office Refurbishment

The following refurbishment costs include demolition and removal of partitions and internal finishes, provide new floor, ceiling and wall finishes but exclude fitting out. The lower end of the range indicates re-use and modification.

Type of Office	Php / m2
Offices Typical Floor	40,200 - 46,300
Offices Core Upgrade (excluding lift Modernization)	30,800 - 36,400

Hotel Fit-Out

The cost of typical hotel guest room fit-out varies within its wide range and is dependent on the quality of finishes specified for different rating hotels. Scope

of fit-out includes preliminaries, wall, floor and ceiling finishes, painting, timber fitments, sanitary wares and bathroom accessories, glazing at bathroom, installation of decorative lighting, curtains, blinds, etc. These costs exclude loose items, such as but not limited to furniture, room equipment and appliances, supply of decorative lighting, and bedding.

Hotel Rating	Php / Room
Three Star	2,772,000 - 3,057,000
Four Star	3,938,000 - 4,529,000
Five Star	5,543,000 - 6,114,000

Estimating Data

Reinforcement Ratios

Average Construction Payment Drawdown

Vertical Transport Services

Reinforcement Ratios

The following ratios give an indication of the average weight of high tensile rod reinforcement per cubic metre of concrete (Grade 35) for the listed elements. Differing structural systems, ground conditions, height of buildings, load calculations and sizes of individual elements and grid sizes will result in considerable variation to the stated ratios. For project specific ratios, a civil & structural engineer should be consulted.

Element	Ave kg / m^3
Pile caps	115 - 250
Bored Piles (compression)	30 - 60
Bored Piles (tension)	150 - 250
Raft Foundation	150 - 220
RC pad footings	70 - 100
Ground beams	200 - 300
Basement	**Ave kg / m^3**
Retaining Wall	150 - 250
RC Wall	125 - 150
Slab	100 - 200
Edge Beams	220 - 300
Above Ground	**Ave kg / m^3**
Columns	250 - 500
Beams	180 - 300
Slab	110 - 200
Walls (core)	130 - 320
Lift Core	125 - 200
Household Shelter	200 - 300
Stairs	130 - 160

Average Construction Payment Drawdown

The tabulation below is derived from the statistical average of a series of case histories, which gives an indication of the anticipated rate of expenditure when used for a specific project for preliminary budgetary purposes. All data are related to the date of submission of contractors' claims to the client and not actual payment, which is generally one month later.

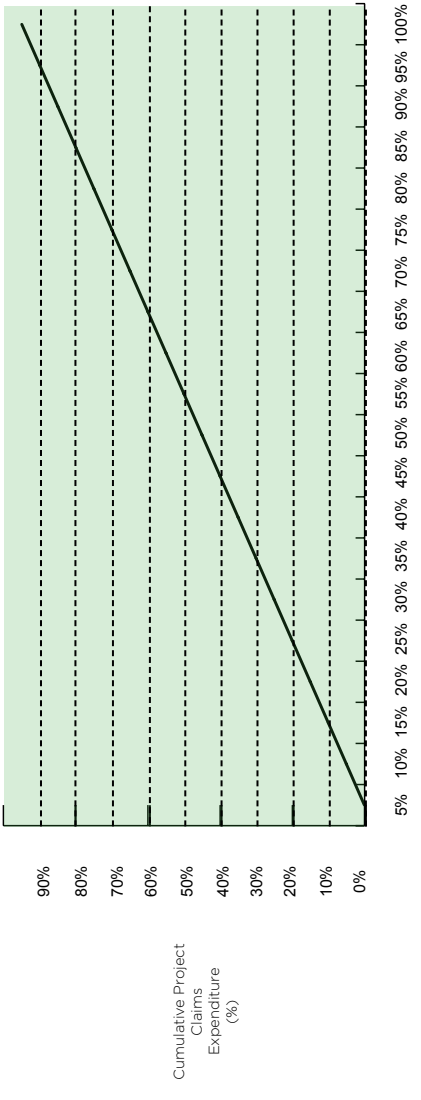
No adjustment has been made for the retention money on the assumption that such money will be paid by the client into a joint account with the Contractor. The payment of the outstanding monies due to the contractors and sub-contractors after the date of practical completion takes place at irregular intervals with payments spread over an indefinite period.

The average rate of claims expenditure on construction projects are from Php 100,000,000 to PhP 1,300,000,000 and/or greater than one year but less than two years construction period to practical completion.

Contract Period	Overall Project
%	%
55	52.85
60	60.15
65	67.15
70	73.68
75	79.60
80	84.79
85	89.07
90	92.29
95	94.32
100	97.50

Contract Period	Overall Project
%	%
5	0.75
10	2.70
15	5.71
20	9.65
25	14.40
30	19.80
35	25.73
40	32.06
45	38.65
50	45.40

Note: The remaining 2.5% would be released after a period of six to twelve months after hand-over of the project



Vertical Transport Services

Application	Lift Type	Speed (M/ Sec)	Base Cost ($)	No. of Floors Served	$/Floor Additional Floors Served	$/Floor By passed
OFFICE & RESIDENTIAL	Electro-Hydraulic passenger	0.5	$70,000 - $95,000	2	$8,500	$6,500
	Gearless 9 to 13 Passenger	1.0	$75,000 - 105,000	2	$7,000	$5,000
	Gearless 9 to 13 Passenger	1.65 - 1.75	$95,000 - 145,000	8	$7,000	$5,000
	Gearless Up to 17 Passenger	1.65 - 1.75	$120,000 - $170,000	8	$7,000	$6,000
	Gearless Up to 23 Passenger	2.0 - 2.5	$150,000 - $270,000	15	$8,000	$6,000
	Gearless	3.0 - 3.5	$435,000	20	$8,000	$6,000
	Gearless	4.0	$575,000	20	$10,000	$8,000
	Gearless	5.0	$660,000	20	$10,000	$8,000
	Gearless	6.0	$920,000	30	$10,000	$8,000
	Gearless	7.0	$990,000	30	$10,000	$8,000
	Gearless	8.0	$1,100,000	40	$10,000	$8,000

Vertical Transport Services

Application	Lift Type	Speed (M/ Sec)	Base Cost ($)	No. of Floors Served	$/Floor Additional Floors Served	$/Floor By passed
HOSPITALS	Gearless 23 pax Bed Lift	1.75	$180,000	8	$7,000	$5,000
	Gearless Up to 40 Passenger	2.50	$680,000	10	$13,500	$8,000
LARGE GOODS LIFTS	Gearless Up to 2000kg	1.0	$305,000	2	$14,000	$8,000
	Gearless Up to 5000kg	0.50	$510,000	2	$16,500	$10,500
SERVICE LIFT (DUMB-WAITER)	Bench Height Unit	0.50	$35,000	2	$4,500	$1,800
	Large Unit	0.20	$55,000	20	$5,500	$2,300
ESCALATORS	Rise 2.5 to 5.0m	0.50	$140,000 - $320,000	20	N.A.	N.A.
TRAVELLATOR	Distance 1.3 to 5.0m	0.50	$120,000 - $340,000	N.A.	N.A.	N.A.
	To 4.0m	0.15	$68,500	2	N.A.	N.A.
DISABLED PLATFORM LIFT	Above 4.0m	0.15	$88,500	3	N.A.	N.A.

Notes:

Lift types up to 17-passenger capacity serving not more than 18 floors are more commonly equipped with motor room-less systems.

Costs provided above are indicative and vary depending on the brand name and technical specifications.

International Construction

Building Costs

Specific Definitions for International Construction Costs

Construction Market Activity Cycle Model

Sector Data

Building Costs

All costs are stated in local currency as shown below, as at Third Quarter 2017. The following data represents estimates of current building costs in the respective market. Costs may vary as a consequence of factors such as site conditions, climatic conditions, standards of specification, market conditions etc.

Location /City	Local Currency	Cost per m²			
		OFFICE BUILDING			
		Premium Offices		Grade A	
		Low	High	Low	High
AMERICAS					
Boston	$USD	2,960	4,840	1,940	2,960
Chicago	$USD	2,475	3,875	1,505	2,155
Denver	$USD	1,720	2,745	1,235	1,885
Honolulu	$USD	3,070	5,705	2,635	4,305
Las Vegas	$USD	1,505	3,175	1,130	2,045
Los Angeles	$USD	2,260	3,390	1,560	2,370
New York	$USD	3,765	5,920	2,960	4,035
Phoenix	$USD	1,720	2,960	1,185	1,885
Portland	$USD	1,940	2,690	1,400	1,940
San Francisco	$USD	2,155	3,765	1,940	2,960
Seattle	$USD	2,045	2,530	1,400	1,990
Washington D.C.	$USD	2,690	4,305	1,885	2,960
ASIA					
Beijing	RMB	7,550	11,200	6,850	12,450
Chengdu	RMB	6,900	9,940	7,750	11,240
Guangzhou	RMB	7,100	10,750	8,000	11,350
Ho Chi Minh City	VND('000)	24,000	29,700	26,500	34,400
Hong Kong	$HKD	22,900	34,100	23,200	32,700
Jakarta	Rp('000)	9,648	11,725	11,065	13,200
Kuala Lumpur	RINGGIT	2,500	3,500	2,800	4,000
Macau	MOP	18,200	25,300	19,500	26,200
Seoul	KRW('000)	2,250	2,740	2,430	2,890
Shanghai	RMB	7,250	10,700	8,000	11,500
Shenzhen	RMB	7,000	10,550	7,850	11,250
Singapore	$SGD	3,000	3,400	3,200	4,000
EUROPE					
Birmingham	GBP	1,799	2,555	NA	NA
Bristol	GBP	1,982	2,608	NA	NA
London	GBP	2,478	3,227	NA	NA
Manchester	GBP	1,967	2,579	NA	NA
MIDDLE EAST & AFRICA					
Abu Dhabi	AED	5,800	7,000	5,800	7,000
Dubai	AED	5,800	7,000	5,800	7,000
Saudi Arabia	SAR	5,673	7,245	6,156	7,597
Doha	QAR	6,500	7,800	7,100	8,500
OCEANIA					
Adelaide	$AUD	2,600	3,500	3,000	3,850
Auckland	$NZ	3,400	4,000	3,750	4,500
Brisbane	$AUD	2,600	3,500	2,700	3,700
Canberra	$AUD	3,274	3,997	3,520	4,245
Christchurch	$NZ	3,600	4,200	3,750	4,500
Darwin	$AUD	3,100	4,000	3,250	4,150
Melbourne	$AUD	3,060	3,455	3,265	3,670
Perth	$AUD	3,150	4,080	3,445	4,470
Sydney	$AUD	3,400	3,880	3,920	4,450
Wellington	$NZ	3,100	4,000	NA	NA

Rates are in national currency per sqm of Gross Floor Area except as follows:
Chinese cities, Hong Kong and Macau: Rates are per square metre of Construction Floor Area, measured to outer face of external walls.
Singapore, Ho Chi Minh City, Jakarta and Kuala Lumpur: Rates are per square metre of Construction Floor Area, measured to outer face of external walls and inclusive of covered basement and above ground parking areas.
Chinese cities, Hong Kong, Macau and Singapore: All hotel rates are inclusive of Furniture, Fittings and Equipment (FF&E).

Cost per m²					
RETAIL				**RESIDENTIAL MULTI STOREY**	
Mall		Strip Shopping			
Low	High	Low	High	Low	High
1,695	2,690	1,075	1,615	1,885	3,230
1,400	2,260	1,130	1,400	1,400	2,260
970	1,560	755	1,455	915	2,045
2,260	5,330	1,885	4,680	2,100	4,790
1,240	5,165	700	1,560	755	4,360
1,400	3,175	1,130	1,830	1,720	2,800
2,690	4,305	1,615	2,690	2,155	4,035
1,185	1,830	805	1,400	970	1,990
1,505	2,585	1,290	1,940	1,615	2,585
2,100	3,500	2,420	3,500	3,015	4,575
1,400	2,850	1,185	1,670	1,505	2,690
1,345	2,690	1,075	1,615	1,885	3,230
8,700	12,700	7,350	11,450	4,200	5,850
7,300	1,100	6,600	10,540	3,700	5,000
8,100	11,500	7,000	10,500	3,950	5,250
19,300	25,700	NA	NA	15,400	18,400
23,000	29,200	19,600	25,500	22,800	36,500
6,520	8,515	NA	NA	6,430	7,920
2,100	3,500	NA	NA	1,900	3,000
19,900	24,500	13,650	16,250	14,650	21,450
1,520	2,190	1,280	1,940	1,550	2,100
7,600	12,000	6,750	11,000	3,800	5,200
7,450	11,450	6,550	10,050	3,800	5,300
2,200	3,400	NA	NA	2,000	2,700
2,720	3,810	870	1,630	1,510	1,725
2,730	3,842	869	1,643	1,719	1,725
3,304	4,645	1,061	1,998	2,077	2,100
2,764	3,882	881	1,667	1,688	1,725
4,100	6,500	NA	NA	4,700	6,100
4,100	6,500	NA	NA	4,700	6,100
4,728	6,198	3,361	4,728	4,796	9,482
5,300	6,500	NA	NA	6,500	7,500
1,550	2,950	1,300	1,825	2,450	3,550
2,500	2,800	1,400	1,800	3,300	3,600
2,300	3,100	1,100	1,600	2,400	2,900
2,250	3,156	1,205	1,984	2,996	3,626
2,500	2,800	1,400	1,800	3,300	3,600
1,730	2,590	1,230	2,090	2,100	2,520
2,065	3,060	1,080	1,580	2,580	3,300
2,300	2,800	1,025	2,565	2,725	3,375
1,880	3,930	1,460	1,890	2,870	3,770
2,600	2,800	NA	NA	3,450	3,600

Building Costs

All costs are stated in local currency as shown below, as at Third Quarter 2017. The following data represents estimates of current building costs in the respective market. Costs may vary as a consequence of factors such as site conditions, climatic conditions, standards of specification, market conditions etc.

Location /City	Local Currency	Cost per m²			
		HOTELS			
		3 Star		5 Star	
		Low	High	Low	High
AMERICAS					
Boston	$USD	2,420	3,765	3,765	5,380
Chicago	$USD	2,045	2,585	3,120	4,845
Denver	$USD	1,615	1,990	2,155	3,355
Honolulu	$USD	3,500	5,865	5,545	8,020
Las Vegas	$USD	1,615	3,230	3,765	5,380
Los Angeles	$USD	2,260	3,120	3,390	5,060
New York	$USD	2,960	4,035	4,035	5,920
Phoenix	$USD	1,615	2,690	2,960	5,115
Portland	$USD	1,615	2,045	2,045	2,960
San Francisco	$USD	2,690	3,765	3,230	5,380
Seattle	$USD	1,720	2,260	2,315	3,390
Washington D.C.	$USD	2,420	3,500	3,500	5,115
ASIA					
Beijing	RMB	9,600	12,350	12,900	17,000
Chengdu	RMB	8,730	11,000	11,600	14,900
Guangzhou	RMB	9,460	11,500	12,800	16,500
Ho Chi Minh City	VND('000)	23,400	30,300	31,100	38,100
Hong Kong	$HKD	29,400	34,000	35,700	43,600
Jakarta	Rp('000)	10,410	11,875	13,670	17,420
Kuala Lumpur	RINGGIT	2,500	3,500	5,000	7,000
Macau	MOP	24,600	28,400	30,600	37,600
Seoul	KRW('000)	1,960	2,490	3,040	4,510
Shanghai	RMB	9,300	12,000	12,600	16,600
Shenzhen	RMB	9,120	11,500	12,100	15,800
Singapore	$SGD	3,300	3,700	4,300	5,600
EUROPE					
Birmingham	GBP	1,280	1,890	2,100	3,000
Bristol	GBP	1,314	1,759	2,275	3,033
London	GBP	1,764	2,266	2,612	3,516
Manchester	GBP	1,333	1,774	2,107	2,882
MIDDLE EAST & AFRICA					
Abu Dhabi	AED	6,000	8,500	9,000	12,000
Dubai	AED	6,000	8,500	9,000	12,500
Saudi Arabia	SAR	5,989	7,456	8,304	10,110
Doha	QAR	7,500	8,500	11,500	14,500
OCEANIA					
Adelaide	$AUD	2,550	3,450	3,550	4,450
Auckland	$NZ	3,800	4,300	4,500	5,500
Brisbane	$AUD	2,800	4,000	4,000	5,500
Canberra	$AUD	2,933	4,095	4,031	4,970
Christchurch	$NZ	3,800	4,300	4,500	5,500
Darwin	$AUD	2,830	3,550	3,600	4,450
Melbourne	$AUD	3,110	3,570	3,920	5,090
Perth	$AUD	2,645	3,635	3,600	4,430
Sydney	$AUD	2,980	3,770	4,230	5,610
Wellington	$NZ	3,800	4,300	4,500	5,500

Rates are in national currency per sqm of Gross Floor Area except as follows:
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Singapore, Ho Chi Minh City, Jakarta and Kuala Lumpur: Rates are per square metre of Construction Floor Area, measured to outer face of external walls and inclusive of covered basement and above ground parking areas.
Chinese cities, Hong Kong, Macau and Singapore: All hotel rates are inclusive of Furniture, Fittings and Equipment (FF&E).

Cost per m²					
CAR PARKING				**INDUSTRIAL WAREHOUSE**	
Multi Storey		Basement			
Low	High	Low	High	Low	High
755	1,075	970	1,615	1,075	1,885
700	1,185	970	1,505	1,075	1,400
540	755	970	1,290	970	1,615
1,075	1,560	1,505	2,850	1,560	2,420
540	915	645	1,615	540	1,075
1,075	1,290	1,240	1,775	1,075	1,830
970	1,615	1,345	2,155	1,240	2,155
430	700	645	1,075	590	1,075
915	1,130	1,185	1,615	970	1,615
1,075	1,400	2,045	1,775	1,505	2,045
860	1,075	1,075	1,560	970	1,345
700	1,075	860	1,345	970	1,615
2,220	3,000	3,700	6,500	4,300	5,300
2,050	2,800	3,650	5,950	3,500	4,200
2,050	2,950	3,650	6,300	4,100	4,900
8,800	13,100	18,000	24,500	5,970	8,400
8,950	10,600	18,400	25,200	15,100	18,300
3,460	4,450	4,450	6,190	4,650	5,680
800	1,200	1,400	3,200	1,000	1,900
NA	NA	10,600	13,400	NA	NA
NA	NA	820	1,050	1,140	1,390
2,050	2,950	3,850	6,400	3,900	4,900
2,050	2,900	3,700	6,300	3,850	4,700
700	1,400	1,500	2,250	1,100	1,600
350	675	629	1,375	400	560
404	809	869	1.456	364	657
424	848	1,106	1,820	458	826
333	667	881	1,441	365	667
1,800	3,600	2,850	4,500	1,500	2,500
2,300	3,600	3,100	4,500	1,850	2,850
920	1,220	2,265	2,845	3,312	3,626
NA	NA	2,750	4,500	NA	NA
610	925	1,325	1,950	625	1,000
750	1,000	2,000	2,500	700	900
700	1,000	1,600	2,100	600	900
747	1,034	1,003	1,429	693	715
850	1,350	1,750	2,200	720	1,100
750	1,250	1,170	1,530	800	1,390
670	1,080	1,130	1,480	565	980
750	1,000	1,850	3,100	550	815
730	1,100	1,050	1,680	700	860
800	1,100	2,000	2,500	750	950

Specific Definitions for International Construction Costs

Office Building

Premium Offices

Refer to landmark high-quality office buildings located in a major Central Business District (CBD) office market, which are trendsetters in establishing rents and accommodating leading owner occupiers including headquarter buildings for banks, insurance, multi national corporations and other major companies.

Grade A Offices

Refer to high quality buildings which are built for the middle range of the rental market.

Hotel

Range of costs exclude FF&E.

Industrial

Quality reflects a simplified type of construction suitable for light industry.

Residential

Owner Occupied

Multi-storey units reflect medium to luxury quality, air-conditioned, and accommodation up to 20-storeys in height.

Investment

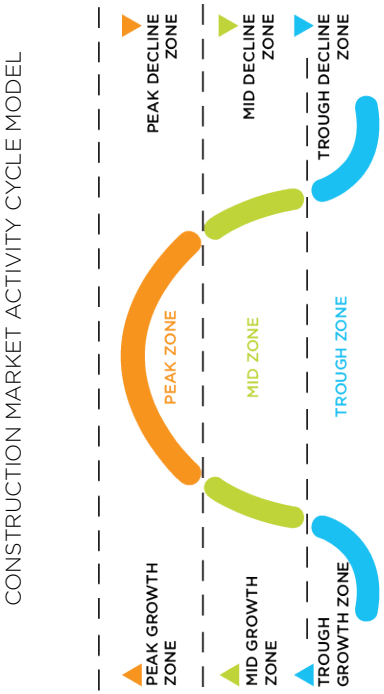
Reflects low-medium quality with basic fit-out provisions.

Note:
The ratio of kitchen, laundry, and bathroom areas to living areas and finishes required will affect the cost range. Range given is significantly affected by the height and configuration of the building.

Exclusions:
Loose furniture, carpet, special light fittings, washing machines, dryers, refrigerators, and tenants special requirements.

Construction Market Activity Cycle Model

The Cycle Model illustrates the different growth and decline zones in a theoretical construction industry business cycle. The tabulation in the following page provides an overview of the relative growth/decline of each development sector in various cities. Each city has its own industry business cycle in the context of its own economy, and as such the performance of each development sector is not strictly comparable between cities. Reflected data is as at Third Quarter 2017.



INTERNATIONAL CONSTRUCTION

Sector Data

LOCATION	HOUSES	APARTMENTS	OFFICES	INDUSTRIAL	RETAIL	HOTEL	CIVIL
AMERICAS							
BOSTON	🟠▲	🟠▲	🟢▼	🟢▼	🟢▼	🟠▼	🟢▼
CHICAGO	🟢▼	🟠▼	🟢▼	🔵▼	🔵▲	🟠▼	🔵▲
DENVER	🟢▼	🟢▼	🟠▼	🟢▲	🔵▲	🟢▼	🟢▼
HONOLULU	🟢▼	🟠▼	🔵▼	🔵▼	🟠▲	🟠▼	🟢▼
LAS VEGAS	🔵▼	🔵▼	🔵▲	🔵▼	🔵▼	🔵▼	🔵▼
LOS ANGELES	🟠▲	🟠▼	🟢▲	🟢▼	🟢▲	🟠▼	🟠▲
NEW YORK	🟠▲	🟠▲	🟢▼	🟢▲	🟢▼	🟠▼	🟠▼
PHOENIX	🟢▼	🟠▼	🟢▼	🟢▲	🔵▼	🟢▼	🟠▲
PORTLAND	🟢▼	🟠▼	🟢▼	🟢▲	🔵▼	🟠▼	🟢▼
SAN FRANCISCO	🟠▼	🟠▼	🟠▼	🟠▼	🟠▼	🟠▼	🟢▼
SEATTLE	🟢▼	🟠▼	🟠▼	🟢▼	🟢▼	🟠▼	🟢▼
WASHINGTON DC	🟠▼	🟠▼	🟢▼	🟢▼	🟢▼	🟠▼	🟢▼
ASIA							
BEIJING	🔵▲	🟠▲	🟢▲	🔵▲	🟢▲	🟢▲	🟢▼
CHENGDU	🟢▼	🔵▼	🟢▲	🟢▼	🟢▲	🟢▲	🟢▼
GUANGZHOU	🔵▲	🟢▼	🟠▲	🔵▼	🟠▲	🟢▲	🟠▼
HO CHI MINH CITY	🟢▼	🟠▼	🟢▼	🔵▼	🔵▼	🔵▼	🔵▼
HONG KONG	🟠▲	🟠▲	🟠▲	🟠▲	🟠▲	🟠▲	🟠▲
JAKARTA	🟢▼	🟢▼	🟠▼	🟢▼	🔵▼	🟢▼	🟢▼
KUALA LUMPUR	🔵▼	🔵▼	🟢▲	🟢▲	🟢▲	🟢▲	🟠▼
MACAU	🟢▲	🟢▲	🟢▲	🟢▲	🟢▲	🟢▲	🟠▲
MANILA	🟠▼	🟠▼	🟢▼	🔵▲	🔵▼	🟠▼	🟠▲
SEOUL	🟠▼	🟠▼	🟠▼	🟠▲	🟠▲	🟠▲	🟠▲
SHANGHAI	🟢▲	🔵▼	🔵▼	🔵▼	🟢▼	🟢▲	🟢▼
SHENZHEN	🟢▲	🟢▼	🟢▼	🔵▲	🟠▼	🟠▲	🟠▼
SINGAPORE	🔵▲	🔵▲	🔵▲	🔵▲	🔵▲	🔵▲	🟠▼

Sector Data

LOCATION	HOUSES	APARTMENTS	OFFICES	INDUSTRIAL	RETAIL	HOTEL	CIVIL
EUROPE							
BIRMINGHAM	🟢▼	🟢▼	🟢▼	🟠▼	🟢▲	🟠▼	🟠▼
LONDON	🟠▲	🟠▲	🟠▲	🟢▼	🟢▲	🟠▼	🟠▼
MANCHESTER	🟠▼	🟠▼	🟢▼	🟠▼	🟢▼	🟠▼	🟢▼
MIDDLE EAST AND AFRICA							
ABU DHABI	🔵▼	🔵▼	🔵▲	🔵▼	🟢▲	🔵▲	🔵▲
DOHA	🔵▼	🔵▼	🟢▲	🟢▼	🟠▼	🟢▼	🟠▼
DUBAI	🟢▲	🟢▲	🟢▲	🟢▲	🟠▲	🟢▲	🟠▼
OCEANIA							
ADELAIDE	🟢▼	🟢▼	🔵▲	🟢▼	🟢▼	🔵▼	🟢▼
AUCKLAND	🟠▼	🟠▼	🟢▼	🟢▼	🟢▼	🟢▼	🟠▼
BRISBANE	🟠▲	🟠▲	🟢▲	🟢▼	🟠▲	🟢▼	🟢▲
CANBERRA	🟠▼	🟠▼	🔵▼	🔵▲	🔵▲	🔵▲	🟢▼
CHRISTCHURCH	🟢▲	🔵▼	🟠▲	🟢▼	🟢▼	🟢▼	🟠▼
DARWIN	🟢▼	🔵▲	🔵▼	🟢▼	🟢▼	🔵▼	🟢▼
GOLD COAST	🟠▲	🟠▲	🔵▲	🟢▼	🟠▲	🔵▼	🟢▼
MELBOURNE	🟠▼	🟠▼	🟠▼	🟢▼	🟠▼	🟠▼	🟠▼
PERTH	🟢▲	🟢▲	🔵▲	🟢▼	🟢▼	🟠▲	🟢▼
SYDNEY	🟠▼	🟠▼	🟠▼	🟠▲	🟠▲	🟢▼	🟠▲
WELLINGTON	🟢▼	🟢▼	🟢▼	🟢▼	🟢▼	🟢▼	🟠▼

Philippine Construction Information

Building for Ecologically Responsive Design Excellence (B.E.R.D.E.)

LEED® Green Building Rating System

Development Data Measurement of Building Areas

Government System Implemented for Private and Public Construction

Construction Industry-Related Agencies

Building for Ecologically Responsive Design Excellence (BERDE)

BERDE is the National Voluntary Green Building Rating System in the Philippines. It is developed by the Philippine Green Building Council (PHILGBC), and is used to measure, verify, and monitor the environmental performance of buildings that exceeds existing mandatory regulations and standards. It is consensus-driven, and achieved through a multi-stakeholder consultation and collaboration process.

Version Development Process and Rating Scheme

In 2007, the PHILGBC formed the BERDE Program to develop a nationally accepted and recognized rating system. The BERDE Program is administered and implemented by the BERDE Committee, a multi-sectoral committee with members appointed by the PHILGBC Board of Trustees from its members and partners. This committee also serves as the program's Technical Management Board to ensure a technically balanced green building rating system.

A BERDE green building rating scheme undergoes a series of workshops and consultations with industry stakeholders before its final release and adoption.

BERDE Assessment and Certification for Buildings

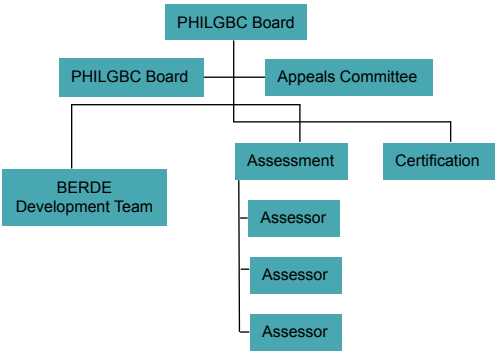
1. Project Registration
The building owner submits the project information and commits to the certification process, and with compliance to all relevant building and environment laws, regulations and mandatory standards.

2. Design Assessment
The project proponent submit design plans, specifications,

calculations and other documented and verifiable proof of compliance to the intent of BERDE. The certification body shall form a team of BERDE Assessors to review and assess the submittal. A project is deemed BERDE Design Certified once found compliant to BERDE and meets at least a cumulative score of 51.

3. Construction Assessment and BERDE Certification
Once the building is completely constructed and ready for occupancy and/or operational, the project proponents submit as-built plans and other robust documentation as evidence of compliance to the intent of BERDE. Once the project is found compliant with the requirements of BERDE and meets at least a cumulative point of 51, the project is certified BERDE and is presented with a rating equivalent to the points achieved.

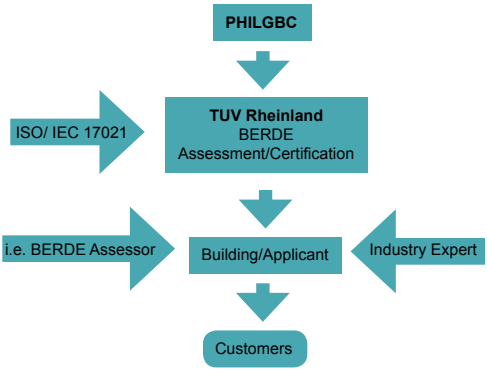
Developing the BERDE Certification Functional Chart



The PHILGBC Board of Trustees is the highest policy making body in the BERDE Rating System structure and owns the BERDE Certification Mark.

The BERDE Development Team drafts, finalizes, and approves the BERDE Rating Program. They conduct periodic review of the Rating Program and provide technical assistance, where necessary, in its interpretation. TÜV Rheinland Philippines undertakes the BERDE assessment activities, to include documentation review, assessment, and assessment reporting. They appoint a technical review or certification person/panel to independently review the Assessment Report and be responsible for the award of the BERDE Certification.

BERDE Rating Certification Structure



Technical Assessors and Experts Pool

TÜV Rheinland Philippines supports the PHILGBC in the development of the criteria for the Technical Assessors and Experts. TÜV Rheinland Philippines maintains a list of its technical assessors and experts pool for the BERDE Rating Program.

TÜV Rheinland Philippines in collaboration with PHILGBC undertakes capacity building programs, such as trainings or workshops in order to qualify the technical assessors and experts and ensure that they have common understanding on the interpretation of the BERDE Rating system, thus ensure the consistent implementation and assessment of the BERDE Rating program. A regular Experience Exchange program shall be required to all qualified technical assessors and experts in order to maintain their appointment status.

As part of TÜV Rheinland Philippines' compliance with ISO/IEC 17021, it ensures that the designated assessment team, including the technical assessors and experts, are not in any way involved in the consulting for the applicant or project.

Proposed Timeline for BERDE Rating Program

Man-day Table and Fee Structure

TÜV Rheinland Philippines charges on a man-day rate basis for its assessment and certification and/or registration activities. TÜV Rheinland Philippines in

collaboration with PHILGBC, develops a man-day table or matrix to determine how much time (man-days) is needed, considering the size and complexity of the project, such as location, size of lot, number of floors of the building, for the Assessment Team to spend for its assessment and certification activities, such as but not limited to documentation review, assessment and documentation/ report preparation. TÜV Rheinland Philippines shall charge the current man-day rate and registration fees duly approved by PHILGBC and published accordingly.

Minimum Program Requirements
Each project must meet minimum requirements in order to quality for BERDE certification. All projects must comply with applicable environmental laws, be a complete permanent building or space, have a site boundary (distinct property lines), comply with minimum occupancy rates, commit to sharing whole building energy and water usage data, and comply with a minimum building area to site-area ratio.

Scoring and Rating

The BERDE Rating System provides a cross-cutting measure of building performance. Weighting is a central concern when combining performance across credits and credit categories. This work is an effort for the BERDE weighting system to address the social, economic and environmental impact priorities of the Philippines.

Objectives
The BERDE 1.0 Credit Weighting Tool was developed to provide a transparent and reproducible system for understanding building impacts and using this information to assign weights to individual BERDE credits. The workbook is a decision support tool that is intended to provide a framework for credit weighting – and not definitive answers.

Weighting Approach
The BERDE weighting system is based on the concept that the value of credits or CRITERIA will be determined by a basic weighting equation (see following page). This equation brings together information on indicators addressed, impact categories (i.e. social, economic, environmental), and the relative importance of CRITERIA indicators. This approach is implemented in a Microsoft Excel based workbook called the BERDE 1.0 Credit Weighting Tool. The tool ultimately provides a set of credit weightings such as those illustrated in the succeeding pages.

Basic Weighing Equation

UN Sustainable Development Indicators Addressed
X
Social, Economic and Environmental Impacts
X
Relative Importance of Each Impact
=
Credit or Criteria Weight

Definitions:

Indicators Addressed:
Each BERDE requirement or criteria addresses different U.N. Sustainable Development Indicators (SDIs).

Environmental Impacts:
Each U.N. Sustainable Development Indicator belongs to different impact categories (Social, Economic and Environmental).

Relative Importance:
Each relevant Database Indicator, that belongs to different UN SDIs, compares the Philippines' standing against the rest of the world. The data puts the Philippines better or worse than the World average. A "worse than the world average" standing gives the indicator a relative importance.

Data source: www.berdeonline.org

BERDE for New Construction - Commercial Buildings

SUMMARY OF POINTS

Management	Points
MN-PT-1 : BERDE Consultant	2
MN-PT-2 : Stakeholder Consultation	6
MN-PT-3 : Design Charrette	1
MN-PT-4 : Security	1
MN-PT-5 : Sustainability Commitment	1 - 4

Land Use and Ecology	Points
LE-PT-1 : Land Re-use	2 - 6
LE-PT-2 : Protection and Improvement of Ecological Features	2 - 6
LE-PT-3 : Pro-Local Biodiversity Open Space	2 - 3
LE-PT-4 : Heat Island Effect : Non-Roof	1 - 2
LE-PT-5 : Heat Island Effect : Building Roof	1
LE-PT-6 : Flood Risk Minimization	2

Water	Points
WT-PT-1 : Water Sub-Metering	1
WT-PT-2 : Potable Water Consumption Reduction	1 - 4
WT-PT-3 : Efficient Landscape Irrigation	1 - 2

Energy	Points
EN-PT-1 : Energy Sub-Metering	1
EN-PT-2 : Energy Efficient Lighting	1
EN-PT-3 : Natural Ventilation	1
EN-PT-4 : On-Site Renewable Energy Generation	1
EN-PT-5 : Energy Efficiency Improvement	1
EN-PT-6 : Energy Efficient Building Envelope	1
EN-PT-7 : Energy Efficient Equipment	1
EN-PT-8 : Building Automation Systems	1 - 2

Transportation	Points
TR-PT-1 : Bicycle Rider Amenities	1
TR-PT-2 : Fuel Efficient and Low Emitting Vehicles	1
TR-PT-3 : Parking	3

PHILIPPINE CONSTRUCTION INFORMATION

Transportation	Points
TR-PT-4 : Proximity To Key Establishments	3
TR-PT-5 : Public Access	1
TR-PT-6 : Contribution To Public Transport Amenities	1 - 3
TR-PT-7 : Public Transportation Access	1 - 4
TR-PT-8 : Transportation Impact Assessment	2

Indoor Environment Quality	Points
EQ-PT-1 : External View and Daylighting	1
EQ-PT-2 : Illumination Control	1
EQ-PT-3 : Glare Control	1
EQ-PT-4 : Thermal Control	1
EQ-PT-5 : Indoor Air Quality	1
EQ-PT-6 : Microbial Contamination Prevention	1
EQ-PT-7 : Low VOC Environment	1

Materials	Points
MT-PT-1 : Civil Works	2
MT-PT-2 : Electrical Works	2
MT-PT-3 : Architectural Works and Finishes	2

Emissions	Points
EM-PT-1 : Pollutant and Greenhouse Gas Inventory	2
EM-PT-2 : Ozone Protection	1
EM-PT-3 : Emission Control	1

Waste	Points
WS-PT-1 : Construction Waste Diversion	2 - 6
WS-PT-2 : Materials Recovery Facility	5

Heritage Conservation	Points
HC-PT-1 : Heritage Feature Protection	3
HC-PT-2 : Heritage Features Promotion	1

Innovation	Points
IN-PT-1 : Innovation In Design Or Process	1 - 10
IN-PT-2 : Innovation In Performance	

Under MN:	Points
- Conduct a design phase commissionability review	1
- Conduct of extended commissioning after one year	1
Under LE:	Points
- Flood risk assessment report data based on 50-year, 24-hour rainfall	1
- Flood risk assessment report data based on 100-year, 24-hour rainfall	1
Under WT:	Points
- Installation of water submeters for major water usages accounting for 40% of total water consumption	1
- Integration of water metering system with BAS	1
Under EN:	Points
- BAS in place for monitoring MVAC	1
- Conduct of CFD studies of naturally ventilated spaces	1
- Annual energy reduction cost greater than 15%	1
- 25% energy reduction OR 150 kWH/m2 per year (12-hour operation) OR 300 kWh/m2 per year (24-hour operation)	1
- Energy modelling reports representing building performance	1
- 10% improvement above minimum EER for unitary A/Cs OR 10% improvement in efficiency baseline for chillers	1
- 20% improvement above minimum EER for unitary A/Cs OR 20% improvement in efficiency baseline for chillers	2
- 30% improvement above minimum EER for unitary A/Cs OR 30% improvement in efficiency baseline for chillers	3
- Inclusion of lifts, lighting, RE systems, and external loads in BAS	1
Under EQ:	Points
- Use of automatic lighting controls	1
- 100% compliance with required VOC levels for materials	1
Under MT:	Points
- Any three of the criteria identified in MT-PT-1 are met	1
- All criteria identified in MT-PT-1 are met	2
- All criteria identified in MT-PT-2 are met	1
TOTAL POINTS	**100** maximum points

Data Source: BERDE-NC-COM v.1.1.0 (2013)

LEED® Green Building Rating System

LEED, or **Leadership in Energy & Environmental Design,** is a green building certification program that recognizes best-in-class building strategies and practices. To receive LEED certification, building projects satisfy prerequisites and earn points to achieve different levels of certification. Prerequisites and credits differ for each rating system, and teams choose the best fit for their project.

I. BACKGROUND OF LEED®

Following the formation of the U.S. Green building council (USGBC) in 1993, the organization's members quickly realized that the sustainable building industry needed a system to define and measure "green buildings." USGBC began to research existing green building metrics and rating systems. Less than a year after formation, the members acted on the initial findings by establishing a committee to focus solely on this topic. The composition of the Committee was diverse; it included architects, real estate agents, a building owner, a lawyer, an environmentalist, and Industry representatives. This cross section of people and professions added richness and depth both to the process and to the ultimate product.

Features of LEED®
The LEED Green Building Rating Systems are voluntary, consensus-based, and market-driven. Based on existing and proven technology, they evaluate environmental performance from a whole building perspective over a building's life cycle, providing a definitive standard for what constitutes a green building in design, construction, and operation.

The LEED Credit Weightings
In LEED 2009, the allocation of points between credits is based on the potential environmental impacts and human benefits of each credit with respect to a set of impact categories. The impacts are defined as the environmental or human effect of the design, construction, operation, and maintenance of the building, such as greenhouse gas emissions, fossil fuel use, toxins and carcinogens, air and water pollutants, indoor environmental conditions. A combination of approaches, including energy modelling, life-cycle assessment, and transportation analysis, is used to quantify each type of impact. The resulting allocation of points among credits is called credit weighting.

The LEED 2009 credit weightings process is based on the following parameters, which maintain consistency and

usability across rating systems:

- All LEED credits are worth a minimum of 1 point.
- All LEED credits are positive, whole numbers; there are no fractions or negative values.
- All LEED credits receive a single, static weight in each rating system; there are no individualized scorecards based on project location.
- All LEED rating systems have 100 base points; Innovation in Design (or Operations) and Regional Priority credits provide opportunities for up to 10 bonus points.

Given the above criteria, the LEED 2009 credit weightings process involves 3 steps:

1. A reference building is used to estimate the environmental impacts in 13 categories associated with a typical building pursuing LEED certification.
2. The relative importance of building impacts in each category are set to reflect values based on the NIST weightings.
3. Data that quantify building impacts on environmental and human health are used to assign points to individual credits.

Each credit is allocated points based on the relative importance of the building-related impacts that it addresses. The result is a weighted average that combines building impacts and the relative value of the impact categories.

II. OVERVIEW AND PROCESS

The LEED 2009 green building rating system for new construction and major renovations is a set of performance Standards for certifying the design and construction of commercial or institutional buildings and high-rise Residential buildings of all sizes, both public and private. The intent is to promote healthful, durable, affordable, and environmentally-sound practices in building design and construction.

Prerequisites and credits in the LEED 2009 for new construction and major renovations addresses 7 topics:

- Sustainable Sites (SS)
- Water Efficiency (WE)
- Energy and Atmosphere (EA)
- Materials and Resources (MR)
- Indoor Environmental Quality (IEQ)

- Innovation In Design (ID)
- Regional Priority (RP)

LEED 2009 for new construction and major renovations certifications are awarded according to the following scale:

- Certified 40–49 points
- Silver 50–59 points
- Gold 60–79 points
- Platinum 80 points and above

The Green Building Certification Institute (GBCI), which administers the LEED certification program, will recognize buildings that achieve 1 of these rating levels with a formal letter of certification.

When to Use LEED 2009 for New Construction
LEED for new construction was designed primarily for new commercial office buildings, but it has been applied to many other building types by LEED practitioners. All commercial buildings, as defined by standard building codes are eligible for certification as LEED for new construction buildings. Examples of commercial occupancies include offices, institutional buildings (libraries, museums, churches, etc.), hotels, and residential buildings of 4 or more habitable stories.

Registration
Project teams interested in earning LEED certification for their buildings must first register the project with GBCI. Projects can be registered on the GBCI website (www.gbci.org). The website also has information on registration costs for USGBC national members as well as non-members. Registration is an important step that establishes contact with GBCI and provides access to software tools, errata, critical communications, and other essential information.

Certification
To earn LEED certification, the applicant project must satisfy all the prerequisites and qualify for a minimum number of points to attain the established project ratings. Having satisfied the basic prerequisites of the program, applicant projects are then rated according to their degree of compliance within the rating system.

III. MINIMUM PROGRAM REQUIREMENTS

The LEED 2009 minimum program requirements (MPRS) define the minimum characteristics that a project must

possess in order to be eligible for certification under LEED 2009. These requirements define the categories of buildings that the LEED rating systems were designed to evaluate, and taken together serve three goals: to give clear guidance to customers, to protect the integrity of the LEED program, and to reduce challenges that occur during the LEED certification process. It is expected that MPRS will evolve over time along with LEED rating system improvements. The requirements will apply only to those projects registering under LEED 2009.

To view the MPRS and the MPR supplemental guidance, visit the LEED resources and tools section at **www.usgbc.org.**

IV. Exemplary Performance Strategies

Exemplary performance strategies result in performance that greatly exceeds the performance level or expands the scope required by an existing LEED 2009 for new construction credit. To earn exemplary performance credits, teams must meet the performance level defined by the next step in the threshold progression. For credits with more than 1 compliance path, an innovation in design point can be earned by satisfying more than 1 compliance path if their benefits are additive.

The credits for which exemplary performance points are available through expanded performance or scope are noted In the LEED reference guide for green design & construction, 2009 edition and in LEED-Online.

Data Source: www.usgbc.org

LEED 2009 for New Construction and Major Renovations Project Checklist

Sustainable Site	26 possible points	
Prerequisite 1	Construction Activity Pollution Prevention	Required
Credit 1	Site Selection	1
Credit 2	Development Density and Community Connectivity	5
Credit 3	Brownfield Redevelopment	1
Credit 4.1	Alternative transportation: Public transportation access	6
Credit 4.2	Alternative transportation: Bicycle storage and Changing rooms	1
Credit 4.3	Alternative transportation: Low-Emitting and fuel-Efficient vehicles	3
Credit 4.4	Alternative transportation: Parking Capacity	2
Credit 5.1	Site Development: Protect or Restore Habitat	1
Credit 5.2	Site Development: Maximize open space	1
Credit 6.1	Stormwater Design: Quantity Control	1
Credit 6.2	Stormwater Design: Quality Control	1
Credit 7.1	Heat island Effect: Non-roof	1
Credit 7.2	Heat island Effect: Roof	1
Credit 8	Light Pollution Reduction	1

Water Efficiency	10 possible points	
Prerequisite 1	Water Use Reduction	Required
Credit 1	Water Efficient Landscaping	2-4
Credit 2	Innovative Wastewater Technologies	2
Credit 3	Water Use Reduction	2-4

Energy and Atmosphere	10 possible points	
Prerequisite 1	Water Use Reduction	Required
Prerequisite 2	Water Efficient Landscaping	Required
Prerequisite 3	Innovative Wastewater Technologies	Required
Credit 1	Optimize Energy performance	1-19
Credit 2	On-site Renewable Energy	1-7
Credit 3	Enhanced Commissioning	2
Credit 4	Enhanced refrigerant Management	2
Credit 5	Measurement and Verification	3
Credit 6	Green Power	2

Materials and resources	14 possible points	
Prerequisite 1	Storage and Collection of recyclables	Required
Credit 1.1	Building reuse: Maintain Existing walls, floors and roof	1-3
Credit 1.2	Building reuse: Maintain Existing interior Non-structural Elements	1
Credit 2	Construction Waste Management	1-2
Credit 3	Materials Reuse	1-2
Credit 4	Recycled Content	1-2
Credit 5	Regional Materials	1-2
Credit 6	Rapidly Renewable Materials	1
Credit 7	Certified Wood	1

Indoor Environmental Quality	15 possible points	
Prerequisite 1	Minimum Indoor Air Quality Performance	Required
Prerequisite 2	Environmental Tobacco Smoke (ETS) Control	Required
Credit 1	Outdoor Air Delivery Monitoring	1
Credit 2	Increased Ventilation	1
Credit 3.1	Construction Indoor Air Quality Management Plan: During Construction	1

PHILIPPINE CONSTRUCTION INFORMATION

Indoor Environmental Quality	15 possible points	
Credit 3.2	Construction Indoor Air Quality Management Plan: Before Occupancy	1
Credit 4.1	Low-Emitting Materials: Adhesives and Sealants	1
Credit 4.2	Low-Emitting Materials: Paints and Coatings	1
Credit 4.3	Low-Emitting Materials: Flooring systems	1
Credit 4.4	Low-Emitting Materials: Composite Wood And Agrifiber Products	1
Credit 5	Indoor Chemical And Pollutant Source Control	1
Credit 6.1	Controllability Of Systems: Lighting	1
Credit 6.2	Controllability Of Systems: Thermal Comfort	1
Credit 7.1	Thermal Comfort: Design	1
Credit 7.2	Thermal Comfort: Verification	1
Credit 8.1	Daylight And Views: Daylight	1
Credit 8.2	Daylight And Views: Views	1

Innovation in Design	6 possible points	
Credit 1	Innovation in Design	1-5
Credit 2	LEED accredited professional	1

Regional Priority	4 possible points	
Credit 1	Regional Priority	1-4

LEED 2009 for New Construction and Major Renovations
100 base points; 6 possible Innovations in Design and 4 Regional Priority points

Certified 40-49 points
Silver 50-59 points
Gold 60-79 points
Platinum 80 points and above

Data Source: LEED 2009 for New Construction and Major Renovations Rating System. USGBC Member Approved November 2008 (Updated July 2016).

Development Data
Measurement of Building Areas

Prior to 1989, the development intensity for residential development was measured in terms of density i.e. persons per hectare. For non-residential developments such as industrial, warehousing, institutional, commercial buildings etc., the intensity was measured in terms of plot ratio.

Following the introduction of the new development charge system from 1 September 1989, the Gross Floor Area concept was adopted to determine the development intensity of a building, thereby standardizing the previous methods of calculating development intensity for different types of developments.

The definition of Gross Floor Area (GFA) based on Rider Levett Bucknall Philippines, Inc. Operating Procedure No.2 (OP-02) is as follows:

All covered spaces fulfilling the functional requirements of the building measured to the outside face of the external walls or the external perimeter. Areas occupied by partitions, columns, internal structural or party walls, stairwells, lift shafts, plant rooms, water tanks and the like are included. Sloping surfaces such as staircases and car park ramps have been measured flat on plan.

Note that; the rooms passing through two or more storey (e.g. foyer, atrium, lobby etc.) - the area is measured once only at floor level. The rooms passing through two or more storey with a gallery or mezzanine – the area is measured once only at ground floor level and the area of the mezzanine or gallery added.

Extreme care must therefore be taken to ensure that any areas quoted by the Architect or Client are understood by all parties.

Gross Floor Area (G.F.A.)
The sum of the "Fully Enclosed Covered Area" and "Unenclosed Covered Area" as defined.

Fully Enclosed Covered Area (F.E.C.A)
The sum of all areas at all building floor levels, including basements (except unexcavated portions), floored roof spaces and attics, garages, penthouses, enclosed porches and attached enclosed covered ways alongside buildings, equipment rooms, lift shafts, vertical ducts, staircases and any other fully enclosed spaces and usable areas of the

building, computed by measuring from normal outside face of the exterior walls but ignoring any projections such as plinths, columns, piers and the like which project from the normal inside face of the exterior walls.

It shall not include open courts, light wells, connecting or isolated covered ways and net open areas of upper portions of rooms, lobbies, halls, interstitial spaces and the like which extend through the storey being computed.

Unenclosed Covered Area (U.C.A)
The sum of all areas at all building floor levels, including roof balconies, open verandahs, porches and porticos, attached open covered ways alongside buildings, under-crofts and usable space under buildings, unenclosed access galleries (including ground floor) and any other trafficable covered areas of the building which are not totally enclosed by full height walls, computed by measuring the area between the enclosed walls or balustrade (i.e. from the inside face of the U.C.A. excluding the wall or balustrade thickness).

When the covering element (i.e. roof or upper floor) is supported by columns, is cantilevered or is suspended, or any combination of these, the measurements shall be taken to the edge of the paving or to edge of the cover, whichever is lesser. U.C.A. shall not include eaves overhangs, sun shading, awnings and the like where these do not relate to clearly defined trafficable covered areas, nor shall it include connecting or isolated covered ways.

Net Rentable Area (N.R.A.)
The sum of rentable areas within a commercial type building, measured from the inside face of exterior walls and windows at a height of 1.5m above floor level and including the area occupied by structural columns.

Deductions from NRA:

- All stairs, toilets, cleaner's cupboards, lift shafts, escalators and tea rooms where provided as standard facilities in the buildings.
- Lobbies between lifts facing other lifts serving the same floor.
- Areas set aside as public space or thoroughfares and not used exclusively by occupants of the building. (Note: excludes any additional common areas resulting from the sub-division of a whole floor to accommodate more than one tenant.)
- Areas set aside as plant and lift motor rooms or for the provision of facilities or services to the building and not for the exclusive use of the occupants of the building.

- Areas set aside for use by service vehicles and for delivery of goods and access ways thereto.
- Areas set aside for car parking and access ways thereto.

Usable Floor Area (U.F.A.)
The sum of the floor areas at floor level from the general inside face of walls of all interior spaces related to the primary function of the building. This will normally be computed by calculating the "Fully Enclosed Covered Area" (F.E.C.A.) and deducting all of the areas supplementary to the primary function of the building.

Deductions from UFA:

- **Common Use Areas.** All floored areas in the building for circulation and standard facilities provided for the common use of the occupants, tenants and/or the public such as lobbies and foyers to entrances, stairways and lifts, stairways, landings and fire escapes, verandahs and balconies, corridors and passages, toilets and rest room areas, cloak and locker rooms, cleaner's rooms, including stores and cupboards, tea making and similar amenity areas.

- **Service Areas.** All areas set aside for building plant supplying services and facilities common to the building for the use of occupants, tenants and/or public such as mechanical plant and equipment rooms, electrical equipment and switch rooms, tank rooms, lift motor rooms, meter cupboards, telecommunications switch rooms, refuse collection areas, loading bays and all car parks including access ways thereto.

- **Non-habitable Areas**. All non-habitable building spaces such as that occupied by internal columns and other structural supports, internal walls and permanent partitions, lift shafts, service ducts and the like.

Government System Implemented for Private and Public Construction

In the Philippines, there are two distinct systems that govern the tendering and implementation of public and private construction contracts.

Private Construction
Contractors are usually selected on the basis of their reputations as competent builders or in consideration of their personal relationships with the project owner. Private contracts are also generally negotiated or tendered through sealed canvass bidding and some through electronic bidding (e-bidding). The contract is awarded at the price agreed upon through the negotiation process. The terms and conditions of the contract constitute the law or agreement between the contracting parties.

Public Construction
Presidential Decree No. 1594 and its Implementing Rules and Regulations (much like the AB 92 of Sweden) primarily governs government infrastructure contracts, particularly those funded from local appropriations, by the contract terms and conditions. However, for projects funded partly or wholly from foreign financing, the International Conditions of Contract or "FIDIC" and the bank guidelines apply.

The Implementing Rules and Regulations of Presidential Decree No. 1594 and Its Objectives

Presidential Decree No. 1594 has been formulated and approved by the Government of The Philippines to adopt a comprehensive, uniform and updated set of policies and guidelines, rules and regulations covering government contracts for government infrastructure and other construction projects in order to achieve a more efficient and effective implantation of these projects. It is intended to:

- Bring about maximum efficiency in project implantation and minimize project cost and contract variations through sound practices in construction management.
- Promote healthy partnership between the government and the private sector in furthering national development, and
- Enhance the growth of the local construction industry and optimize the use of indigenous manpower, materials and other resources.

Generally, government construction projects are undertaken by contract after competitive public bidding. Projects may be undertaken by administration or "force account" or by negotiated contract only in exceptional cases where time is of the essence, or where there is lack of qualified bidders or contractors, or where there is conclusive evidence that greater economy and efficiency would be achieved through this arrangement.

Life Cycle Economy

Under Philippine government projects, a Warranty Period of one (1) year is provided and calculated from the date of final completion of the contract works as certified by the Executing Agency. Within the above prescribed period, the Contractor should maintain the facility at his own expense and is liable for any failure or defect noted which is traceable to poor workmanship, use of poor quality materials or non-compliance to plans and specifications.

The Contractor, at his own expense, should correct the defects and failure or refusal to do so will warrant the Executing Agency to carry out the corrective work with all the consequential expenses chargeable from any monies due to the Contractor. However, defects and failures due to ordinary wear and tear and for causes other than the fault of the Contractor shall not be taken against the Contractor.

After one year, a Certificate of Acceptance is issued by Executing Agency and the facility is now turned over to the Government for property management and maintenance. However, the contractor, after the date of issuance of a Certificate of Final Acceptance for the project, remains criminally and administratively liable for any damages or defects discovered on the works due to faulty construction and or use of materials of inferior quality as provided under Article 1723 of the Civil Code of the Philippines.

References :

1.) Implementing Rules and Regulations of Presidential Decree No. 1594 - Guidelines for Government Infrastructure Contracts
2.) Managing the Construction Process for Government Projects in the Philippines Department of Public Works and Highways (DPWH)

Construction Industry-Related Agencies

The Construction Industry Authority of the Philippines (CIAP)

The CIAP was created to promote, accelerate and regulate the growth and development of the construction industry in conformity with national goals.

Implementing Agencies:

1. Philippine Contractors Accreditation Board (PCAB)
PCAB assumes the functions of the abolished Philippine Licensing Board for Contractors under RA 4566 (Contractors License Law). It mainly issues, suspends and revokes licenses of contractors.

2. Philippine Overseas Construction Board (POCB)
POCB formulates policies, plans, programs and strategies for developing the Philippine overseas construction industry; regulates and control the participation of construction contractors in overseas construction projects; and administers the grant of incentives for Filipino overseas contractors.

3. Philippine Domestic Construction Board (PDCB)
PDCB formulates, recommends, and implements policies, rules, regulations and guidelines and adjudicates disputes arising from public construction projects.

4. Construction Industry Arbitration Commission (CIAC)
CIAC Formulates and adopts an arbitration program for the construction industry. It also enunciates policies and prescribes rules and procedures for construction arbitration.

5. Construction Manpower Dev't Foundation (CMDF)
CMDF formulates an overall construction manpower development plan and strategies, and develops and implements manpower training programs for the construction industry; among others.

Reference: ciap.dti.gov.ph/legal-mandate

Infrastructure

Philippine Infrastructure Information

Definition of Terminologies

Construction Cost Data

Average Infrastructure Construction Payment Drawdown

Public-Private Partnership

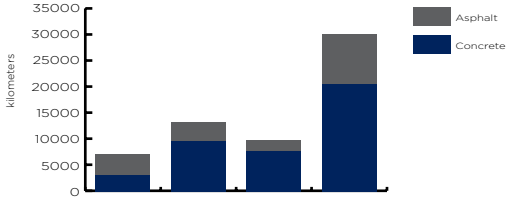
Variants of PPP Project Agreements

'Build, Build, Build' Program

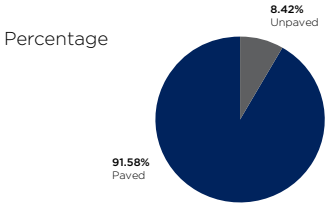
Construction Regulations

Philippine Infrastructure Information
ROADS AND BRIDGES

Total Paved National Road (As at Dec. 2016)

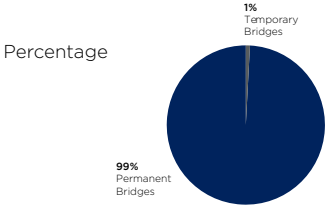


Type	National Arterial Road	National Secondary Road	National Tertiary Road	Total
Paved	7,065.91	13,087.68	9,856.40	30,009.99
Unpaved	1.51	1,060.36	1,698.41	2,760.27



Existing National Bridges by Type (As at Dec. 2016)

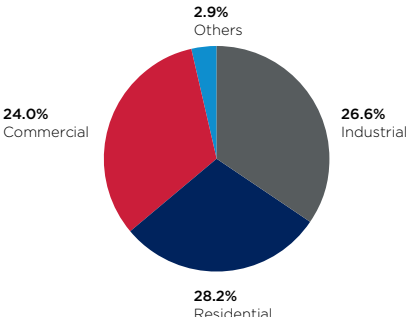
Bridge Type	Concrete	Steel	Bailey	Timber
	PERMANENT BRIDGES		TEMPORARY BRIDGES	
Length (km)	275,893	85,496	2,545	229



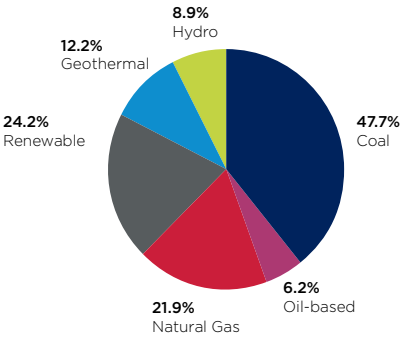
Note: Latest data from the Department of Public Works and Highways (DPWH). Retrieved October 2017.

ENERGY

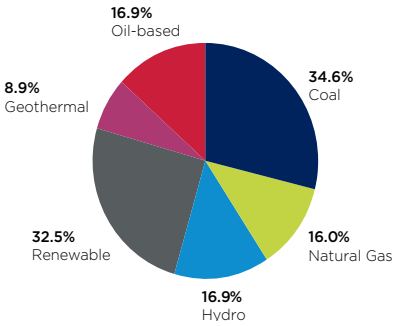
Power Consumption by Sector in GWh (2016)



Power Generation by Source in GWh (2016)



Installed Generating Capacity in MWh (2016)

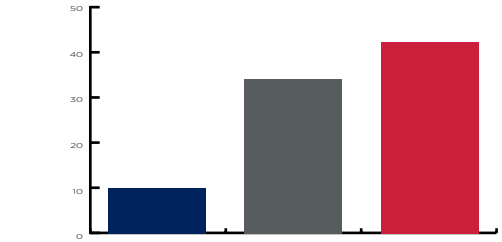


Note: Latest data from the Department of Energy (DOE). Retrieved October 2017.

INFRASTRUCTURE

AVIATION (AIRPORTS)

Number of Philippine Airports (As at August 2016)

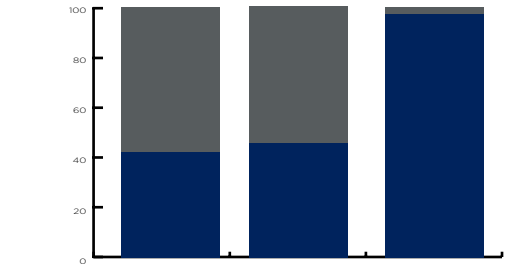


Type	International	Domestic	Community
Number	11	33	41

Note: Latest data from the Civil Aviation Authority of the Philippines. Retrieved October 2017.

MARINE (PORTS AND HARBORS)

Cargo Throughput, Container & Shipcalls (3Q2017)



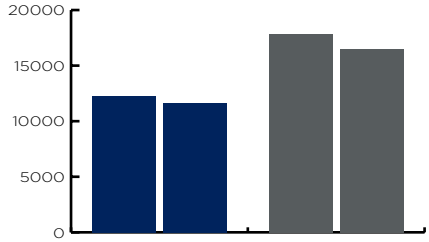
Type	Cargo	Container (TEU)	Shipcalls
Foreign	59.68%	56.93%	2.54%
Domestic	40.32%	43.07%	97.46%

DEFINITION	
Throughput	Total volume of cargo discharged and loaded at the port at any given time.
Twenty-Foot-Equivalent Unit	The unit of measurement equivalent to a container's length of 20 feet.
Shipcalls	The number of vessels which call or arrive at a particular port.

Note: Latest data from the Philippine Ports Authority. Retrieved October 2017.

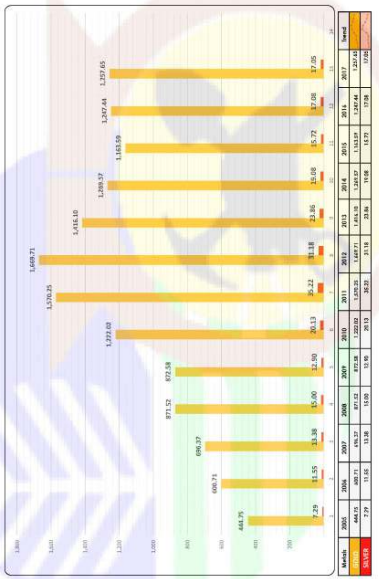
MINING

Philippine Metallic Mineral Production (Jan. - Sep. 2016 & 2017)



Type	Gold		Silver	
Year	2016	2017	2016	2017
Number	17,555	16,999	26,923	23,951

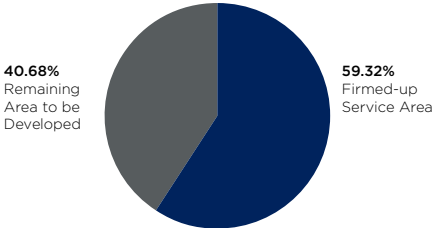
Historical Metal Prices (2005-2017)



Note: Latest data from Mines and Geosciences Bureau. Retrieved January 2018.

IRRIGATION

Status of Irrigation Development (As at Dec. 2016)

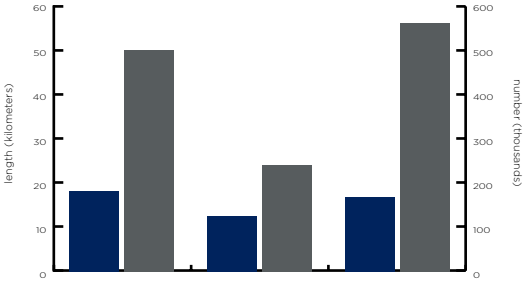


Estimated Total Irrigable Area (in hectares)	3,128,631
Firmed-up Service Area	1,855,982.17
Remaining Area to be Developed	1,272,648.83

Note: Latest data from the National Irrigation Authority. Retrieved October 2017.

RAILWAYS

Types of Rapid Transit



Type	LRT - 1 (Line 1)	LRT - 2 (Line 2)	MRT - 1 (Line 3)
Route	Baclaran - Roosevelt	Santolan - Recto	North Ave. - Taft Ave.
Length (km)	18.07	12.56	16.90
No. of Daily Commuters	440,000	217,000	560,000

Source: LRTA and MRT3

Definition of Terminologies

Infrastructure
The basic physical and organizational structure needed for the operation of a society or enterprise or the services and facilities necessary for an economy to function. It can be generally defined as the set of interconnected structural elements that provide a framework supporting an entire structure of development. It is an important term for judging a country or region's development.

Types of Infrastructure:
- Roads
- Rails
- Transport Intermodal
- Mining
- Bridges and Tunnels
- Water and Waste Water
- Energy
- Marine
- Aviation
- Land Development
- Process Engineering

These networks deliver essential services and support social interactions and economic development. They are society's lifelines.

Rapid Transit
A type of high-capacity public transport generally found in urban areas. Rapid transit systems are electric railways that operate on an exclusive right-of-way, which cannot be accessed by pedestrians or other vehicles of any sort and which is often grade separated in tunnels or on elevated railways.

Transport Intermodal
Involves the use of more than one mode of transport for a journey. There are two types:
- ***Intermodal passenger transport*** - the major goal is to reduce dependence on automobiles as the major mode of ground transportation and increase use of public transport.
- ***Intermodal freight transport*** - reduces cargo handling, improves security, reduces damage and loss and allows freight to be transported faster. Reduced costs over road trucking is the key benefit for intra-continental use.

Surface Mining
Is a method of mining used to extract minerals and metals which are near the surface of the earth. Techniques of surface mining include:

- ***Open-pit mining*** is the recovery of materials from an open pit in the ground, quarrying or gathering building materials from an open-pit mine.
- ***Strip mining*** consists of stripping surface layers off to reveal ore/seams underneath.
- ***Mountaintop removal*** is commonly associated with coal mining, which involves taking the top of a mountain off to reach ore deposits at depth.
- ***Landfill mining*** involves sites where landfills are excavated and processed.

Wastewater Treatment Plant
Is a physical plant where various physical, biological or chemical processes are used to change the properties of the wastewater (e.g. by removing harmful substances) in order to turn it into a type of water (also called effluent) that can be safely discharged into the environment or that is usable for a certain reuse purpose.

Dam
Is a barrier that impounds water or underground streams. Dams generally serve the primary purpose of retaining water, while other structures such as floodgates or levees (also known as dikes) are used to manage or prevent water flow into specific land regions.

Purposes of dams are: 48% for irrigation, 17% for hydropower (production of electricity), 13% for water supply, 10% for flood control, 5% for recreation and less than 1% for navigation and fish farming.

Renewable Energy
Is generally defined as energy that comes from resources which are naturally replenished on a human timescale such as sunlight, wind, rain, tides, waves and geothermal heat.

Port
A sheltered harbor where marine terminal facilities are provided, consisting of piers or wharves at which ships berth/dock while loading or unloading cargo, transit sheds and other storage areas where ships may discharge incoming cargo, and warehouses where goods may be stored for longer periods while waiting distribution or sailing.

Process Engineering
Focuses on the design, operation, control, and optimization

of chemical, physical, and biological processes. Process engineering encompasses a vast range of industries, such as chemical, petrochemical, mineral processing, advanced material, food, pharmaceutical, software development and biotechnological industries.

Project Capital Costs
Are normally the initial cost of the project, also referred to as the initial investment for the project. It is within this phase that the project is designed and built.

The capital cost for a construction project includes the expenses related to the initial establishment of the facility:

- Land acquisition, including assembly, holding and improvement
- Planning and feasibility studies
- Architectural and Engineering design
- Construction, including materials, equipment and labor
- Field Supervision of construction
- Construction financing
- Insurance and taxes during construction
- Owner's general office overhead
- Equipment and furnishings not included in construction
- Inspection and Testing

Operations and Maintenance Costs
In addition to building and owning infrastructure facilities, the concessionaire (developer) is normally required to operate and maintain the facility over an extended period of time. The concession period can extend for 20 to 30 years. At the end of the period the facility is transferred back to the municipality or government agency.

The staff involved with operating infrastructure facilities can include Management, Supervisors, System Controllers, Fare Collectors and Vehicle Operators. Energy Consumption can include electric power consumption for transit vehicles and fuel for buses. Consumables include tickets.

Maintenance can include such things as the cost of maintaining and cleaning buildings, repairing highway pavements, cutting and watering grass, replacing bridge bearings and maintaining ticket vending machines. Maintenance can also include the labor and parts required to operate transit vehicles over the concession period.

Transferring the facility back to the government includes demobilization costs such as clean-up costs, staff severance as well as audit fees required to transfer the assets. The operation and maintenance cost in subsequent years over the project life cycle includes the following expenses:

- Land rent, if applicable
- Operating staff
- Periodic renovations
- Insurance and taxes
- Financing costs
- Utilities
- Owner's other expenses
- Labor and material for maintenance and repairs

Concession

A concession gives an operator the long term right to use all utility assets conferred on the operator, including responsibility for all operation and investment. Asset ownership remains with the authority. Assets revert to the authority at the end of the concession period, including assets purchased by the operator. In a concession, the operator typically obtains its revenues directly from the consumer who has a direct relationship with the latter. A concession covers an entire infrastructure system (so may include the operator taking over existing assets as well as building and operating new assets).

Construction Cost Data

The following rates are indicative only and based on normal site condition. It includes an allowance for profit and overhead but excludes preliminaries. The rates are not valid for tendering or pricing of variations.

Land Development

Comprised of survey works, earthworks (cut & fill, block dev't), RROW (base preparation, concrete pavement, asphalt overlay, sidewalk, curb & gutter), wet utilities (water, drainage, sewer system), dry utilities (electrical & auxiliary system, streetlighting system).

LAND DEVELOPMENT	Php / m^2 GLA	
	Low	High
Flat Terrain	1,900	2,700
Flat Terrain (UPDS)	2,400	3,600
Rolling Terrain	2,100	3,100
Rolling Terrain (UPDS)	2,900	4,400
EARTHWORKS	Php / m^3	
	Low	High
Cut (ordinary soil)	275	380
Cut (hard rock materials)	630	850
Fill (engineered materials)	360	600
ROAD RIGHT-OF-WAY	Php	
	Low	High
Subgrade Preparation	70	160
Sub-base Materials	1,250	1,400
Base Course Materials	1,540	1,650
Portland Cement Concrete Pavement, 180mm thick	1,100	1,400
Asphalt Overlay, 50mm thick	660	810
Asphalt Overlay, 65mm thick	1,020	1,250
Concrete Sidewalk, 100mm thick	610	750
Curb and Gutter	750	900

INFRASTRUCTURE

Wet Utilities

Includes pipelaying, excavation and backfilling works, manholes, lot connections, testing and commissioning.

WET UTILITIES	Php / m	
	Low	High
Blue Water System, PVC Pipes	1,690	2,230
Blue Water System, HDPE Pipes	2,110	2,360
Gray Water System, PVC Pipes	1,010	1,390
Gray Water System, HDPE Pipes	1,680	1,870
Drainage System, RC Pipes	2,890	8,480
Sewer System	3,610	6,810

Dry Utilities

Includes primary & secondary ductline, excavation and backfilling works, T-Pad, manhole & cover, service box, terminal cabinet, guide wire, and mandrelling test.

DRY UTILITIES	Php / m	
	Low	High
Electrical System	7,880	15,000
Auxiliary System	4,640	10,190

Water and Waste Water

Sewage Treatment Plant

Does not include site dev't, power and water supply during construction in excess of 5m, power and water supply during start-up and testing, power connection of main feeder line to STP MCC, dewatering equipment, tertiary treatment system, ventilation and ducting system, and unforeseen site condition.

SEWAGE TREATMENT PLANT	Php / m^3 GLA	
	Low	High
1000 m^3 / day capacity - MEP	9,600	11,700
1000 m^3 / day capacity - Civil (below ground)	12,600	15,400
1000 m^3 / day capacity - Civil (above ground)	9,400	11,500

Deepwell Drilling

Includes drilling of pilot hole, S&I of casing, pumping test, disinfection and water analysis, S&I of submersible deepwell pump, VFD, pumphouse and all necessary fittings to complete the system.

DEEPWELL DRILLING	Php / m	
	Low	High
250 mm diameter stainless steel casing	22,870	27,960

Water Reservoir/Cistern Tank

Includes earthworks, structural, plumbing (equipments, valves, pipes & fittings), electromechanical works, waterproofing, instrumentation and automation, testing and commissioning.

DESCRIPTION	Php / m^3 capacity	
	Low	High
Construction of Water Reservoir	39,060	47,750
Construction of Cistern Tank	46,190	56,470
Construction of Overhead Water Tank (per gallon capacity)	180	200

Slope Protection

SLOPE PROTECTION	Php / m^3	
	Low	High
Grouted Riprap	3,250	4,170
RC Retaining Wall	14,140	15,730
Gabions & Mattress (including boulders)	2,800	3,920

Bridge / Culverts

BRIDGE / CULVERTS	Php / m^2 GLA	
	Low	High
Reinforced Concrete Deck Girder Bridge	690,000	840,000
Prestressed Concrete Girder (6000 psi)	51,940	63,490
RC Box Culvert, Double Barrel (5.0 x 5.0m)	272,000	374,000
RC Box Culvert, Double Barrel (2.4 x 1.8m)	68,610	83,860
RC Box Culvert, Single Barrel (2.1 x 1.8m)	40,640	49,680
RC Pipe Culvert (900mm in diameter)	6,370	7,800
RC Pipe Culvert (600mm in diameter)	3,590	5,380
RC Pipe Culvert (450mm in diameter)	2,740	4,110

INFRASTRUCTURE

Greenwall (Vertical Landscape)

This item includes plastic modules, stainless steel frames, various plants with three months warranty.

GREENWALL	Php / m²	
	Low	High
S&I of Greenwall Modules	24,500	29,950

Roadwork Construction

Includes subgrade preparation, 250mm sub-base course, 150mm base course. Carriageway considered is 6.70m (3.35m per lane).

ROADWORK CONSTRUCTION	Php / m	
	Low	High
PCCP with 1.20m Shoulder	15,650	18,780
PCCP with Curb & Gutter and 1.20m Concrete Sidewalk	18,450	22,140
PCCP with Curb & Gutter and 3.50m Concrete Sidewalk	22,130	26,560
PCCP with Asphalt Overlay and 1.20m Shoulder	15,050	18,060
PCCP with Asphalt Overlay, Curb and Gutter, and 1.20m Concrete Sidewalk	17,850	21,420
PCCP with Asphalt Overlay, Curb and Gutter, and 3.50m Concrete Sidewalk	21,520	25,830
Asphalt Concrete Pavement with 1.20m Shoulder	12,440	15,210
Asphalt Concrete Pavement with Curb and Gutter, and 1.20m Concrete Sidewalk	16,480	20,150
Asphalt Concrete Pavement with Curb and Gutter, and 3.50m Concrete Sidewalk	19,760	24,160

PCCP - Portland Cement Concrete Pavement

Manholes

Includes earthworks, manhole frame and cover.

SUPPLY AND INSTALLATION OF MANHOLE	Php / unit	
	Low	High
Sewer Drop Manhole, 900mmØ	112,790	137,870
Drainage Manhole (Curb Inlet Manhole, 450mmØ)	104,300	127,480
Drainage Manhole (Curb Inlet Manhole, 600mmØ)	133,420	163,070
Drainage Manhole (Curb Inlet Manhole, 750mmØ)	181,680	222,060
Drainage Manhole (Curb Inlet Manhole, 900mmØ)	206,830	252,800
UPDS 2-Way Manhole	235,600	287,970
UPDS 3-Way Manhole	276,090	337,450
UPDS 4-Way Manhole	294,210	359,600
UPDS Switch Gear Manhole	456,050	557,400
UPDS Switch Gear Pump Manhole	190,400	232,720

UPDS - Underground Power Distribution System

Aqueduct Construction

Includes 2 shafts and 3.05 m diameter tunnel with 300mm thickness pre-stressed concrete lining. Method of excavation is by usng Tunnel Borring Machine.

AQUEDUCT CONSTRUCTION	Php / m	
	Low	High
3.05 m diameter Aqueduct	620,000	780,000

Industrial Warehouse

WAREHOUSE CONSTRUCTION	Php / m² CFA	
	Low	High
Warehouse (Core and Shell)	37,700	44,500

PIPE LAYING OF WATERLINES Includes excavation and disposal, sand cushion, pipe laying, metallic warning tape and backfilling works. Fittings are excluded.		Php / m					
		uPVC		HDPE		FRP	
		100mmØ	500mmØ	100mmØ	600mmØ	100mmØ	1500mmØ
Pipe Laying on Hard Rock Bedding	Low	1,930	13,390	2,110	30,060	6,190	66,170
	High	2,370	16,370	2,580	36,750	7,570	80,880
Pipe Laying on Common Matl Bedding	Low	1,260	12,560	1,430	29,240	5,400	64,440
	High	1,550	15,360	1,760	35,750	6,600	78,760
REMOVAL AND RESTORATION OF PAVEMENT (after pipelaying) Consist of breaking and disposal of existing pavement, and restoration of new pavement from base preparation.		Php / m					
		uPVC		HDPE		FRP	
		100mmØ	500mmØ	100mmØ	600mmØ	100mmØ	1500mmØ
Concrete and Asphalt Pavement (50mm)	Low	3,630	6,910	3,630	7,780	5,220	16,570
	High	4,440	8,450	4,440	9,520	6,390	20,370
Concrete Pavement only	Low	3,190	6,130	3,190	6,910	4,620	14,930
	High	3,910	7,500	3,910	8,460	5,650	18,260
Asphalt Pavement only	Low	1,080	2,680	1,080	2,680	1,660	6,890
	High	1,330	3,290	1,330	3,290	2,030	8,430

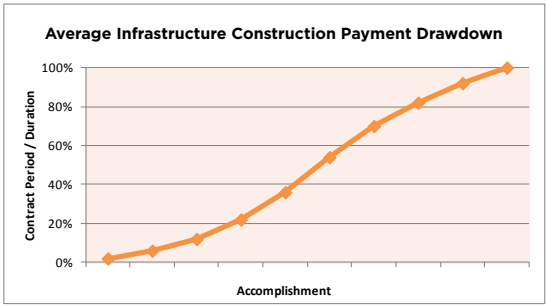
uPVC - Unplasticised Poly Vinyl Chloride
HDPE - High-density polyethylene
FRP - Fibre-reinforced plastic

Parametric Construction Cost

	DESCRIPTION	Unit	Php	
			12m median divider/swale	3m median divider/barrier
1.	Main Road	lm	70,000	63,000
2.	Service Road	lm	35,000	35,000
3.	Interchanges	lm	70,000	63,000
4.	Overpass	lm	610,000	610,000
5.	Intersection	lm	35,000	35,000
6.	Bridge along Interchange & Overpasses	lm	610,000	610,000
7.	Bridge	lm	1,130,000	1,130,000
8.	Bridge extension along Main Road	lm	530,000	530,000
9.	Bridge along Service Road	lm	370,000	370,000
10.	Underpass	lm	200,000	200,000
11.	Toll Plaza	ea	190,000,000	190,000,000
12	Laybay	sq. m	6,000	6,000
13.	Fence (chain link fence 2mH)	lm	3,100	3,100
14.	Streetlighting (interval = 20m)	lm	8,000	8,000

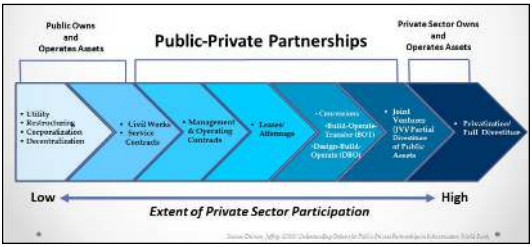
Average Infrastructure Construction Payment Drawdown

DURATION	ACCOMPLISHMENT	CASHFLOW
0%	0%	0%
10%	2%	2%
20%	4%	6%
30%	6%	12%
40%	10%	22%
50%	14%	36%
60%	18%	54%
70%	16%	70%
80%	12%	82%
90%	10%	92%
100%	8%	100%



Public-Private Partnership (PPP)

Refers to arrangements typically from medium to long term between the public and private sectors, whereby some of the services that fall under the responsibilities of the public sector are provided by the private sector, with clear agreement on shared objectives for delivery of public infrastructure and/or public services.



Source: ppp.gov.ph

List and Status of Philippine PPP Projects
As at December 2017

A. AWARDED PROJECTS

Notice of Award (NOA) has been issued to the winning private proponent(s).

1. DaangHari – SLEX Link Road (Muntinlupa-Cavite Expressway) Project
2. PPP for School Infrastructure Project - Phase I
3. NAIA Expressway Project (Phase II)
4. PPP for School Infrastructure Project - Phase II
5. Automatic Fare Collection System (AFCS)
6. Mactan-Cebu International Airport Passenger Terminal Building
7. LRT Line 1 Cavite Extension and Operation and Maintenance
8. Southwest Integrated Transport System (ITS) Project
9. Cavite-Laguna Expressway
10. South Integrated Transport System Project
11. Bulacan Bulk Water Supply Project
12. Metro Manila Skyway (MMS) Stage 3 Project
13. MRT Line 7 Project
14. Civil Registry System Information Technology Project (Phase II)
15. NLEX-SLEX Connector Road

B. PPP PIPELINE

Project Under Review by Implementing Agencies

NEDA-Board approved projects undergoing review by Implementing Agencies

1. LRT Line 6 Project
2. Operation and Maintenance of LRT Line 2
3. Regional Prison Facilities through PPP

Project Under Procurement

Prospective bidders conduct due diligence in preparing their prequalification documents (during the prequalification stage) or bidding documents (during the bidding stage). This stage also involves government's evaluation of bids submitted by the qualified bidder(s).

1. Road Transport IT Infrastructure Project (Phase II)

For Approval of Relevant Government Bodies

Project is currently undergoing evaluation by the appropriate government body (i.e. ICC-Cabinet Committee, Board, and the different local development councils).

1. East-West Rail Project
2. Manila Bay Integrated Flood Control, Coastal Defense and Expressway Project
3. New Manila International Airport

Projects Under Conceptualization and Development

This list includes other projects in the pipeline currently at the earlier stages of project conceptualization and development. Implementing agencies are currently assessing the project's level of priority, and whether it is to be undertaken using the PPP scheme.

1. Bonifacio Global City – NAIA BRT
2. New Bohol (Panglao) Airport Operations and Maintenance
3. National Broadband Plan – Accelerated Tower Build (Access) Project
4. Integrated Transport System-North Terminal Project
5. New Nayong Pilipino at Entertainment City Project
6. Rural Dairy Industry Development Project
7. Judiciary Infrastructure Development through PPP Project
8. Philippine National Railways Commuter System Operation and Maintenance
9. San Ramon Newport Project

10. Cebu Bus Rapid Transit (BRT) Project-System Manager and Operator Contracts
11. One DTI Building Complex
12. Metro Manila Bus Rapid Transit (BRT) Project-System Manager and Operator Contracts
13. Duty Free Philippines Retail Development Project
14. Motor Vehicle Inspection System
15. Clark International Airport Operations and Maintenance Project

Retrieved from: ppp.gov.ph

Variants of PPP Project Agreements

Build-and-Transfer (BT)
A contractual arrangement whereby the Project Proponent undertakes the financing and Construction of a given infrastructure or development facility and after its completion turns it over to the Agency or LGU concerned, which shall pay the Project Proponent on an agreed schedule its total investment expended on the project, plus a Reasonable Rate of Return (ROR) thereon. This arrangement may be employed in the Construction of any Infrastructure or Development Projects, including critical facilities which, for security or strategic reasons, must be operated directly by the Government.

Build-Lease-and-Transfer (BLT)
A contractual arrangement whereby a Project Proponent is authorized to finance and construct an infrastructure or development facility and upon its completion turns it over to the Agency/LGU concerned on a lease arrangement for a fixed period, after which ownership of the facility is automatically transferred to the Agency/LGU concerned.

Build-Operate-Transfer (BOT)
A contractual arrangement whereby the Project Proponent undertakes the Construction, including financing, of a given infrastructure facility, and the operation and maintenance thereof. The Project Proponent operates the facility over a fixed term during which it is allowed to charge facility users appropriate tolls, fees, rentals, and charges not exceeding those proposed in its bid or as negotiated and incorporated in the contract to enable the Project Proponent to recover its investment, and operating and maintenance expenses in the project.

The Project Proponent transfers the facility to the Agency/LGU concerned at the end of the fixed term that shall not exceed fifty (50) years: Provided, that in the case of an Infrastructure or Development Facility whose operation requires a public utility franchise, the proponent must be Filipino or, if a corporation, must be duly registered with the Securities and Exchange Commission (SEC) and owned up to at least sixty percent (60%) by Filipinos. This build-operate and-transfer contractual arrangement shall include a supply-and-operate scheme which is a contractual arrangement whereby the supplier of equipment and machinery for a given infrastructure facility, if the interest of the Government so requires,

operates the facility providing in the process technology transfer and training to Filipino nationals.

Build–Own–and-Operate (BOO)
A contractual arrangement whereby a Project Proponent is authorized to finance, construct, own, operate and maintain an infrastructure or development facility from which the Project Proponent is allowed to recover its total investment, operating and maintenance costs plus a reasonable return thereon by collecting tolls, fees, rentals or other charges from facility users; provided, That all such projects upon recommendation of the Investment Coordination Committee (ICC) of the National Economic and Development Authority (NEDA), shall be approved by the President of the Philippines. Under this project, the proponent who owns the assets of the facility may assign its operation and maintenance to a Facility operator.

Build-Transfer-and-Operate (BTO)
A contractual arrangement whereby the Agency/LGU contracts out the Construction of an infrastructure facility to a private entity such that the Contractor builds the facility on a turn key basis, assuming cost overruns, delays, and specified performance risks. Once the facility is commissioned satisfactorily, title is transferred to the implementing Agency/LGU. The private entity however operates the facility on behalf of the implementing Agency/LGU under an agreement.

Contract-Add-and-Operate (CAO)
A contractual arrangement whereby the Project Proponent adds to an existing infrastructure facility which it is renting from the Government and operates the expanded project over an agreed Franchise period. There may or may not be a transfer arrangement with regard to the added facility provided by the Project Proponent.

Develop-Operate-and-Transfer (DOT)
A contractual arrangement whereby favorable conditions external to a new infrastructure project which is to be built by a Project Proponent are integrated into the arrangement by giving that entity the right to develop adjoining property, and thus, enjoy some of the benefits the investment creates such as higher property or rent values.

Rehabilitate-Operate-and-Transfer (ROT)
A contractual arrangement whereby an existing facility is turned over to the Project Proponent to refurbish, operate and maintain for a Franchise period, at the expiry of which the legal title to the facility is turned over to the Government. The term is also used to describe the purchase of an existing facility from abroad, importing, refurbishing, erecting and consuming it within the host country.

Rehabilitate-Own-and-Operate (ROO)
A contractual arrangement whereby an existing facility is turned over to the Project Proponent to refurbish and operate with no time limitation imposed on ownership. As long as the operator is not in violation of its Franchise, it can continue to operate the facility in perpetuity.

Swiss Challenge
Is a form of public procurement in some (usually lesser developed) jurisdictions which requires a public authority (usually an agency of government) which has received an unsolicited bid for a public project (such as a port, road or railway) or services to be provided to government, to publish the bid and invite third parties to match or exceed it. The bids and awards committee shall compare and evaluate all the bids by the third party bidders and the original proponent. The original proponent can match or exceed the best proposal.

Source: www.worldbank.org/pppirc
Revised BOT Law Implementing Rules and Regulations of R.A. No. 6957

‘Build, Build, Build’ (BBB) Program

In his 10-point Socio-economic Agenda, President Rodrigo Duterte envisioned the reduction of poverty from 21.6% in 2015 to 13%-15% by 2022.

Among the reforms that will drive this Agenda is the acceleration of infrastructure and the development of industries that will yield robust growth across the archipelago, create jobs and uplift the lives of Filipinos.

Infrastructure is among the top priorities of his Administration with public spending on infrastructure projects targeted to reach 8-9 trillion pesos from 2017-2022.

The ‘Build, Build, Build’ Program, also known as the thrust of the “Dutertenomics” policy, is a coordination between the National Economic Development Authority (NEDA), the Department of Public Works and Highways (DPWH), the Department of Transportation (DOTr), and the Bases Conversion and Development Authority (BCDA). These major infrastructure agencies aim at developing high impact projects that are envisioned to increase the productive capacity of the economy, create jobs, increase incomes, and strengthen the investment climate leading to sustained inclusive growth.

BBB Project Timeline

STEP	DURATION	ACTIVITY	DESCRIPTION
1	6 months	Feasibility Study MOU	Under terms of the MOU: • Study at no cost to Philippine government • The Philippine government is not bound to accept the Studies • Non-exclusivity of Parties to enter into other agreements for development of similar projects
2	1 month	Financial Discussion/Negotiation	Explore possible options on different financing schemes
3	10 to 12 months	Detailed Engineering Design	
4	1 to 2 months	Crafting of Terms of Reference (TOR)	Crafting and approval of TOR
5	1 month	Competitive Public Bidding	Based on Philippine procurement laws, rules, and regulations (banned or blacklisted companies will not be qualified to participate)
6	2 years	Ground Breaking and Construction	

List and Status of Philippine BBB Projects per Sector
As at November 2017

Roads and Bridges

ROADS AND BRIDGES		
PROJECTS UNDER DEVELOPMENT	**PROJECTS UNDER IMPLEMENTATION**	
NAIA Expressway Phase II	Bonifacio Global City to Ortigas Road Link Project, Sta. Monica-Lawton Bridge and Viaduct (Phase I & II-A)	Bahile - Oyster Access Road
Tarlac-Pangasinan-La Union Expressway	NLEX Harbor Link, Segment 10	East-West Lateral Road
Cavite-Laguna Expressway	Bacolod Economic Highway	Pinguiaman Bridge
NLEX - SLEX Connector Road	Panguil Bay Bridge	
Metro Cebu Expressway	Central Luzon Link Expressway	
Mindanao Logistics Infrastructure Network	Davao City Bypass	
Apayao-Ilocos Norte Road	Urdaneta City Bypass Road	
	Pigalo Bridge	
	Matnog-Sta. Magdalena-Bulusan Road	
	Zamboanga City Bypass Road	
	Laguna Lake Highway	

AIRPORTS				
PROJECT UNDER PROCUREMENT	**PROJECTS UNDER DEVELOPMENT**			**PROJECTS UNDER IMPLEMENTATION**
Clark International Airport Expansion (Phase I)	Bacolod Airport - Operations, Maintenance, and Development Project	Night Rating of Cauayan Airport	Night Rating of Tuguegarao Airport	New Communications Navigation Surveillance/Air Traffic Management (CNS/ATM) Systems Development Project
	Davao Airport - Operations, Maintenance, and Development Project	Night Rating of Dipolog Airport	Mactan-Cebu International Airport Project	Puerto Princesa Airport Development Project
	Iloilo Airport - Operations, Maintenance, and Development Project	Night Rating of Dumaguete Airport		Bicol International Airport Development Project
	Laguindingan Airport - Operations, Maintenance, and Development Project	Night Rating of Naga Airport		
	Bohol Airport Development, Operations and Maintenance Project	Night Rating of Ozamis Airport		
	Night Rating of Cotabato Airport	Night Rating of Pagadian Airport		

Mass Transit

MASS TRANSIT		
PROJECT UNDER PROCUREMENT	**PROJECTS UNDER DEVELOPMENT**	**PROJECTS UNDER IMPLEMENTATION**
Metro Manila Bus Rapid Transit - Line 2 (Central Corridor)	Metro Manila Bus Rapid Transit - Line 1 (Quezon Avenue BRT)	Cebu Bus Rapid Transit
	BGC to NAIA Bus Rapid Transit (BRT) System	South Integrated Transport System
		Southwest Integrated Transport System

Flood Control

FLOOD CONTROL	
PROJECTS UNDER PROCUREMENT	**PROJECTS UNDER DEVELOPMENT**
Mandaluyong Main Drainage Project, Phase II	Leyte Tide Embankment Project
Pasig-Marikina River Channel Improvement Project, Phase III (JICA PH-P252)	

NEW CITIES		
PROJECTS UNDER DEVELOPMENT	**PROJECT UNDER IMPLEMENTATION**	**PROJECTS UNDER FEASIBILITY STUDY**
New Clark City - Food Processing Terminal and Food Market	New Clark City - Mixed Use Industrial Real Estate Developments	New Clark City National Government Center
BCDA Smart City Solutions		New Clark City - Philippine Sports City
		New Clark City - Mixed Income Development Housing
		New Clark City - Agro-Industrial Park

Railways

RAILWAYS		
PROJECT UNDER PROCUREMENT	**PROJECTS UNDER DEVELOPMENT**	**PROJECTS UNDER IMPLEMENTATION**
Unified Common Station	Mega Manila Subway	PNR North 1 (North South Commuter Rail)
	Mindanao Railway: Tagum-Davao City-Digos (TDD) Segment	Line 7 (MRT 7)
	PNR North 2	LRT Line 2 East Wing (Masinag) Extension Project
	PNR South Commuter	LRT 1 South (Cavite) Extension Project
	PNR South Long Haul	
	Subic-Clark Cargo Railway Project	

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Communication and Information

COMMUNICATION AND INFORMATION
PROJECT UNDER FEASIBILITY STUDY
Broadband Backhaul Modular IT Facilities

Construction Regulations

International Federation of Consulting Engineers (FIDIC)
Founded in 1913, FIDIC is charged with promoting and implementing the consulting engineering industry's strategic goals on behalf of its Member Associations and to disseminate information and resources of interest to its members. Today, FIDIC membership covers 97 countries of the world.

Construction Industry Authority of the Philippines (CIAP)
An organization created to promote, accelerate, and regulate the growth and development of the construction industry. It exercises jurisdiction and supervision over the following implementing boards;

- **Philippine Contractors Accreditation Board (PCAB)**, which issues, suspends, and revokes licenses of contractors;
- **Philippine Domestic Construction Board (PDCB)**, assigned to formulate, recommend and implement policies, guidelines, plans and programs for the efficient implementation of public and private construction in the country;
- **Philippine Overseas Construction Board (POCB)** which assigned to formulate strategies and programs for developing the country's overseas construction industry;
- **Construction Industry Arbitration Commission (CIAC)** which takes charge of disputes arising from, or connected with government and private contract.

DPWH Standard Specifications for Public Works and Highways 2004 Edition: Volume II – Highways, Bridges and Airports

PRESIDENTIAL DECREE NO. 1096
National Building Code of the Philippines (NBCP)
States that it is the policy of the State to safeguard life, health, property, and public welfare, consistent with the principles of sound environmental management and control; and to this end, make it the purpose of this Code to provide for all buildings and structures, a framework of minimum standards and requirements to regulate and control their location, site, design, quality of materials, construction use, occupancy, and maintenance.

PRESIDENTIAL DECREE NO. 1594
and its Implementing Rules and Regulations
Prescribes Policies, Guidelines, Rules and Regulations for Government Infrastructure Contracts.

IMPLEMENTING RULES AND REGULATION OF R.A. 9184
The Government Procurement Reform Act
An act providing for the modernization, standardization and regulation of the procurement activities of the government and for other purposes.

REPUBLIC ACT 7718
(Revised Implementing Rules and Regulations of R.A. 6957)

REVISED BOT LAW
An act authorizing the Financing, Construction, Operation and Maintenance of Infrastructure Projects by the Private Sector and for other purposes.

REPUBLIC ACT 8974
An act to facilitate the acquisition of Right-of-way, Site or Location for National Government Infrastructure Projects and for other purposes.

REPUBLIC ACT 7227
An act accelerating the Conversion of Military Reservations into other productive uses, creating the Bases Conversion and Development Authority for this purpose, providing funds therefore and for other purposes.

REPUBLIC ACT 7942
An act instituting a new system of Mineral Resources Exploration, Development, Utilization and Conservation.

REPUBLIC ACT 9136
Electric Power Supply Reform Act of 2001
An act ordaining reforms in the Electric Power Industry amended for the purpose of certain laws and other purposes.

REPUBLIC ACT 9513
The Philippine Renewable Energy Act of 2008
An act promoting the development, utilization and commercialization of Renewable Energy Resources and for other purposes.

PROCEDURAL GUIDELINES
(Department Order No. 13 Series of 1998)
The Guidelines Governing Occupational Safety and Health in the Construction Industry.

Professional Services

Cost Consultancy

Project Management

Special Services

PROFESSIONAL SERVICES

WHO WE ARE

Rider Levett Bucknall Philippines, Inc. is the biggest consultancy practice of Quantity Surveying in the Philippines. It provides a wide range of Project / Construction Cost Consultancy Services within the construction industry, commencing from the conceptualization of a project, construction administration, through to hand over upon completion, until final account closeout.

OUR GLOBAL ALLIANCE

RLB Philippines is a member of **Rider Levett Bucknall,** an independent global property and construction practice with over 3,500 people in 120 offices in 80 different countries, covering six different continents, namely Asia, Europe. the Middle East, Africa, the Americas and Oceania.

We serve major local and international clientele in the Philippines and regionally. Our global expertise in Quantity Surveying and our significant project experience provide comprehensive services and solutions to the development and construction of the built environment, extending to building and civil infrastructure, commercial, residential and hospitality buildings, healthcare, industrial and civil engineering projects.

WHAT WE DO

We offer Cost Consultancy, Quantity Surveying, Project Management, and Advisory Services from project conception to completion to ensure maximum value for money in respect of capital and asset values, whole life costs, and project delivery. Our philosophy is to provide a participative and interactive approach with the view of achieving clients' budgets, construction quality, and timely completion.

The extensive range of professional consultancy provided by Rider Levett Bucknall Philippines covers the following core services:

Cost Consultancy

- Cost Planning
- Cost Management
- Contract Procurement
- Tender & Contract Documentation

- Progress Valuations
- Financial Reporting
- Change Order Management
- Auditing Services
- Post-Contract Services
- Final Accounts

Project Management

- Project Management Service
- Contract Administration
- Client Representation
- Development Management
- Construction Management
- Value Management

Special Services

- Financial Audit of Construction
- Physical Audit of Construction
- Quality Audit of Construction
- Verification of Loan Amounts
- Verification of Monies Spent
- Contractual Advice
- Contractual Claims Preparation and Adjudication
- Builders Quantities Preparation
- Replacement Cost Estimates after Disasters; i.e. Fire; Typhoon; etc.
- Expert Witness in Arbitration, and/or Litigation
- Secondment of Staff

OUR COMMITMENT

Rider Levett Bucknall Philippines, Inc. is committed towards creating and nurturing lasting relationships. We are cognizant of our organization's core values, bringing them to each and every project we carry out.

International Offices

Asia

Middle East

Africa

Americas

Europe

Oceania

ASIA

CHINA

Beijing
Rider Levett Bucknall
Room 1803-1809, 18th Floor, East Ocean Centre
24A Jian Guo Men Wai Avenue,
Chaoyang District, Beijing 100004, China
Telephone: +86 10 6515 5818
Email: sm.tuen@cn.rlb.com
Website: www.rlb.com

Chengdu
Rider Levett Bucknall
Room 2901 - 2904, 29/F Square One, 18 Dongyu Street,
Jinjiang District, Chengdu 610016, China
Telephone: +86 28 8670 3382
Email: chengdu@cn.rlb.com
Website: www.rlb.com

Chongqing
Rider Levett Bucknall
Room 3007-3008, 30/F, Metropolitan Tower
No. 68 Zourong Road, Central District,
Chongqing 400010, China
Telephone: +86 23 6732-1801
Email: danny.chow@cn.rlb.com
Website: www.rlb.com

Dalian
Rider Levett Bucknall
Room 1103, 11th Floor, Xiwang Tower,
No. 136 Zhongshan Road, Zhongshan District
Dalian 116001, Liaoning Province, China
Telephone: +86 10 6515 5818
Email: dalian@cn.rlb.com
Website: www.rlb.com

Guangzhou
Rider Levett Bucknall
Room 601, TaiKoo Hui Tower 1, 385 Tian He Road
Guangzhou 510620
Telephone: +86 20 8732 1801
Email: guangzhou@cn.rlb.com
Website: www.rlb.com

Guiyang
Rider Levett Bucknall
Room E, 12th Floor, Fuzhong International Plaza
126 Xin Hua Road, Guiyang 550002
Telephone: + 86 851 553 3818
Email: guiyang@cn.rlb.com
Website: www.rlb.com

Haikou
Rider Levett Bucknall
Room 1705, 17th Floor, Fortune Center, 38
Da Tong Road, Haikou 570102, Hainan Province
Telephone: + 898 6672 6638
Email: haikou@cn.rlb.com
Website: www.rlb.com

Hangzhou
Rider Levett Bucknall
Room 2306, 23rd Floor, Deep Blue Plaza
No. 203, Zhao Hui Road, Hangzhou, 310014
Telephone: + 86 571 8539 3028
Email: hangzhou@cn.rlb.com
Website: www.rlb.com

Hong Kong
Rider Levett Bucknall Limited 20th Floor,
Eastern Central Plaza, 3 Yiu Hing Road, Shaukeiwan
Telephone: +852 2823 1823
Email: hongkong@hk.rlb.com
Website: www.rlb.com

Macau
Rider Levett Bucknall
Alameda Dr. Carlos D' AssumpÁ„o, No. 398 Edificio
CNAC 9° Andar,I-J Macau SAR
Telephone: +852 2823 1830
Email: macau@hk.rlb.com
Website: www.rlb.com

Nanjing
Rider Levett Bucknall
201 Central Road, Gulou Qu, Nanjing Shi,
Jiangsu Sheng, China
Telephone: +86 25 8678 0300
Email: nanjing@cn.rlb.com
Website: www.rlb.com

INTERNATIONAL OFFICES

Qingdao
Rider Levett Bucknall
Room 2019, 20th Floor, Parkson Commercial Plaza 44-60
Zhongshan Road, Shinan District, Qingdao 266001
Telephone: +86 532 8612 3015
Email: nanjing@cn.rlb.com
Website: www.rlb.com

Shanghai
Rider Levett Bucknall
22/F, Greentech Tower, No. 436, Hengfeng Road
Zhabei District, Shanghai, China 200070
Telephone: +86 21 6330 1999
Email: shanghai@cn.rlb.com
Website: www.rlb.com

Shenyang
Rider Levett Bucknall
25th Floor, Tower A, President Building, No. 69 Heping
North Avenue, Heping District, Shenyang 110003
Telephone: +86 24 2396 5516
Email: shenyang@cn.rlb.com
Website: www.rlb.com

Shenzhen
Rider Levett Bucknall
Room 4510-4513, 45th Floor
Shun Hing Square Diwang Commercial Centre
5002 Shennan Road East, Shenzhen 518001
Telephone: +86 755 8246 0959
Email: shenzhen@cn.rlb.com
Website: www.rlb.com
Contact: Kenneth Kwan

Tian Jin
Rider Levett Bucknall
Room 502, 5th Floor, Tianjin International Building
75 Nanjing Road, Heping District, Tianjin 300050
Telephone: +852 2823 1828
Email: tianjin@cn.rlb.com
Website: www.rlb.com

Wuhan
Rider Levett Bucknall
Room 2301, 23rd Floor, New World International Trade
Centre, No. 568 Jianshe Avenue, Wuhan 430022
Telephone: +86 07 6885 0986
Email: wuhan@cn.rlb.com
Website: www.rlb.com

Wuxi
Rider Levett Bucknall
Room 1410-1412, 14/F, Juna Plaza, No. 6 Yonghe Road
Nanchang District, Wuxi 214000,
Telephone: +86 510 8274 0266
Email: wuxi@cn.rlb.com
Website: www.rlb.com

Xiamen
Room 2216 The Bank Centre, 189 Xiahe Road
Xiamen 361000, China
Telephone: +86 21 6330 1999
Email: eric.fong@cn.rlb.com

Xian
Rider Levett Bucknall
88 Nanguan Zheng Street, Beilin District, Xian 710068,
Shaanxi Province, China
Telephone: +86 29 8833 7433
Email: xian@cn.rlb.com
Website: www.rlb.com

Zhuhai
Rider Levett Bucknall
Room 3108, 31st Floor, Everbright International Trade
Centre, No. 47 Haibinnanlu, Jida, Zhuhai 519015,
Telephone: +86 756 388 9010
Email: kenneth.kwan@cn.rlb.com
Website: www.rlb.com

INDONESIA

Jakarta
Rider Levett Bucknall
Jl. Jend. Surdirman Kav. 45-46 Sampoerna Strategic
Square South Tower, Level 18 Jakarta 12930
Telephone: +62 21 5795 2308
Email: rlb@id.rlb.com
Website: www.rlb.com

MALAYSIA

Kuala Lumpur
Rider Levett Bucknall
B2-6-3 Solaris Dutamas, No. 1 Jalan Dutamas 1,
50480 Kuala Lumpur
Telephone: +60 3 6207 9991
Email: rlb@my.rlb.com
Website: www.rlb.com

INTERNATIONAL OFFICES

MYANMAR

Yangon
Rider Levett Bucknall
Union Business Center Nat Mauk Road,
Bo Cho Quarter. Bahan Township, Suite 03 - 02
Telephone: +95 1 860 3448
Email: rlb@mm.rlb.com
Website: www.rlb.com

PHILIPPINES

Manila
Rider Levett Bucknall Philippines, Inc.
Building 3, Corazon Clemeña Compound, No. 54 Danny Floro Street, Bagong Ilog, Pasig City, 1600
Telephone: +63 2 234 0140 / 571 3741
Email: rlb@ph.rlb.com, bizdev@ph.rlb.com
Website: www.rlb.com
Contact: Corazon Clemeña Ballard

Sta. Rosa, Laguna
Rider Levett Bucknall Philippines, Inc.
Unit 201, Brain Train Center, Lot 11 Block 3, Sta. Rosa Business Park, Greenfield, Brgy. Don Jose, Sta. Rosa City, Laguna, 4026
Telephone: + 63 922 806 7507
Email: rlb.starosa@ph.rlb.com
Website: www.rlb.com
Contact: Corazon Clemeña Ballard

Subic
Rider Levett Bucknall Philippines, Inc.
The Venue Bldg. Unit 418, Lot C-5, Commercial Area, Subic Bay Gateway Park, Phase 1, Subic Bay Freeport Zone, Zambales
Telephone: +63 918 965 3891
Email: rlb.starosa@ph.rlb.com
Website: www.rlb.com
Contact: Corazon Clemeña Ballard

Cebu
Rider Levett Bucknall Philippines, Inc.
Suite 602, PDI Condominium, Archbishop Reyes Avenue cor. J.Panis Street, Banilad, Cebu City, 6014
Telephone: + 63 32 268 0072
Email: rlbcebu@ph.rlb.com
Website: www.rlb.com
Contact: Corazon Clemeña Ballard

Davao
Rider Levett Bucknall Philippines, Inc.
Room 308 3rd Floor Cocolife Bldg., CM Recto Claveria
cor. J. Palma Gil St., Davao City
Mobile: + 63 917 550 7013
Email: coraballard@ph.rlb.com
Website: www.rlb.com
Contact: Corazon Clemeña Ballard

Cagayan de Oro
Rider Levett Bucknall Philippines, Inc.
Rm 702, 7th Floor, TTK Tower, Don Apolinar Velez Street
Barangay 19, Cagayan de Oro City, 9000
Telephone: + 63 88 856 3734 / + 63 998 573 2107
Email: rlb.cdo@ph.rlb.com
Website: www.rlb.com
Contact: Corazon Clemeña Ballard

Bacolod
Rider Levett Bucknall Philippines, Inc.
2nd Floor, Mayfair Plaza, Lacson cor. 12th Street, Bacolod
City Negros Occidental, 6100 Philippines
Telephone: 63 34 432 1344
Email: rlb.bacolod@ph.rlb.com
Website: www.rlb.com
Contact: Corazon Clemeña Ballard

Bohol
Rider Levett Bucknall Philippines, Inc.
Cascajo, Panglao Island, Bohol
6340 Philippines
Telephone: 63 977 852 9548
Email: rlb@ph.rlb.com
Contact: Corazon Clemeña Ballard

Iloilo
Rider Levett Bucknall Philippines, Inc.
2nd Floor (Door 21), Uy Bico Building, Yulo Street,
Iloilo City Proper, Iloilo, 5000 Philippines
Telephone: +63 33 320 0945
Email: rlb@ph.rlb.com
Contact: Corazon Clemeña Ballard

Clark
Rider Levett Bucknall Philippines, Inc.
Units 202-203 Baronera Place Bldg. Mc Arthur Hi-way
Dau, Mabalacat City, Pampanga
Telephone: +63 918 965 3891
Contact: Corazon Clemeña Ballard

INTERNATIONAL OFFICES

SINGAPORE

Rider Levett Bucknall
150 Beach Road, #09-01 Gateway West,
Singapore 189720
Telephone: +65 6339 1500
Email: rlb@mm.rlb.com
Website: www.rlb.com

SOUTH KOREA

Seoul
Rider Levett Bucknall Korea Ltd
(Yeoksam-Dong, Yeji Building) 3rd Floor, 513,
Nonhyeon-Ro, Gangnam-Gu, Seoul, 135-909 Korea
Telephone: +852 2823 1828
Email: seoul@kr.rlb.com
Website: www.rlb.com

Jeju
Rider Levett Bucknall
1084, Seogwang-ri, Andeok-myeon, Seongwipo-si
Jeju-do, Korea
Telephone: +852 2823 1828
Email: stephen.lai@hk.rlb.com.ph

VIETNAM

Ho Chi Minh City
Rider Levett Bucknall Co Ltd
Centec Tower, 16th Floor, Unit 1603, 72-74 Nguyen Thi
Minh Khai Street, Ward 6, District 3 Ho Chi Minh City
Telephone: +84 83 823 8070
Email: rlb@vn.rlb.com
Website: www.rlb.com

MIDDLE EAST

UNITED ARAB EMIRATES

Abu Dhabi
Rider Levett Bucknall
Mezzanine Level, Al Mazrouei Building, Muroor Road, PO
Box 105766, Abu Dhabi, United Arab Emirates
Telephone: + 971 2 643 3691
Email: tony.bratt@ae.rlb.com
Website: www.rlb.com

Dubai
Rider Levett Bucknall
Oasis Centre, Level 3, Suite 68, Sheikh Zayed Road,
P.O.Box 115882, Dubai, United Arab Emirates
Telephone: + 971 4 339 7444
Email: natalie.stockman@ae.rlb.com
Website: www.rlb.com

QATAR

Doha
Rider Levett Bucknall
Office 32, Second Floor, Al Mirqab Complex,
Al Mirqab Al Jadeed Street, Al Naser Area,
PO Box 26550, Doha, Qatar
Telephone: +966 11 217 5551
Email: sam.barakat@ae.rlb.com
Website: www.rlb.com

OMAN

Muscat
Rider Levett Bucknall
Building No. 287, 18th November Road,
North Azaiba, Sultanate of Oman
Telephone: + 968 2 449 9676
Email: sam.barakat@ae.rlb.com
Website: www.rlb.com

SAUDI ARABIA

Riyadh
Rider Levett Bucknall
F43, 1st Floor, Localizer Mall, Prince Mohammad bin
Abdulaziz Road (Tahliyah Street), Olaya, PO Box 53911,
Riyadh 11593, Saudi Arabia
Telephone: +966 11 217 5551
Email: john.prior@sa.rlb.com
Website: www.rlb.com
Contact: John Prior

AFRICA

Cape Town
9th Floor, 22 Bree Street, Cape Town, 8000, Western Cape, South Africa
Telephone: +27 0 21 418 9977
Email: martin.meinesz@za.rlb.com
Website: www.rlb.com

Johannesburg
Building 4, Maxwell Office Park Magwa Crescent Wes Waterfall City, Johannesburg
Telephone: +27 0 11 548 4000
Email: leon.cronje@za.rlb.com
Website: www.rlb.com

Pretoria
1st Floor, Banking COurt Menlyn Maine Central Square corner Aramist & Corobay Ave. Waterkloof Glen Ext 2 Pretoria, South Africa
Telephone: +27 0 12 348 1040
Email: nicolas@za.rlb.com
Website: www.rlb.com

Gabarone, Botswana
Unit 32 Kgale Mews, Gaborone, Botswana
Telephone: +27 72 622 9852
Email: fred.selolwane@bw.rlb.com
Website: www.rlb.com

Maputo, Mozambique
38/42, no Bairro da Sommerschield 1, Maputo, Mozabique
Telephone: +27 12 348 1040
Email: christiaan.rademan@mu.rlb.com
Website: www.rlb.com

Mauritius
Ground Floor, Office 4, ENL House, Vivea Business Park, Moka Mauritius
Telephone: +230 5767 8815
Email: marvind.beetul@mu.rlb.com
Website: www.rlb.com

AMERICAS

CANADA

Calgary
Rider Levett Bucknall
200-609 14th Street NW, Calgary,
Alberta T2N 2A1, Canada
Telephone: +1 403 571 0505
Email:YYC@ca.rlb.com
Website: www.rlb.com

Toronto
Rider Levett Bucknall
1155 North Service Road West, Unit 5, Oakville
Ontario, L6M 3E3
Telephone: +1 905 631 8210
Email: YYZ@ca.rlb.com
Website: www.rlb.com

UNITED STATES OF AMERICA

Austin
111 Congress Avenue, Suite 400,
Austin, Texas 78701
Telephone: +1 512 704 3026
Email: ward.simpsons@us.rlb.com
Website: www.rlb.com

Boston
Two Financial Center, Suite 810,
60 South Street, Boston, Massachusetts 02111
Telephone: +1 617 737 9339
Email: BOS@us.rlb.com
Website: www.rlb.com

Chicago
65 East Wacker Place, Suite 1215Chicago,
Illinois 60601
Telephone: +1 312 819 4250
Email: chris.harris@us.rlb.com
Website: www.rlb.com

Denver
1675 Larimer Street, Suite 470, Denver,
Colorado 80202
Telephone: +1 720 904 1480
Email: DEN@us.rlb.com
Website: www.rlb.com

INTERNATIONAL OFFICES

Guam
GCIC Building, Suite 603, 414 West Soledad Avenue
Hagatna, Guam 96910
Telephone: +1 671 473 9054
Email: GUM@us.rlb.com
Website: www.rlb.com

Hilo
117 Keawe Street, Suite 125, Hilo,
Hawaii 96720
Telephone: +1 808 934 7953
Email: ITO@us.rlb.com
Website: www.rlb.com

Honolulu
American Savings Bank Tower, Suite 1340, 1001 Bishop Street, Honolulu, Hawaii 96813
Telephone: +1 808 521 2641
Email: HNL@us.rlb.com
Website: www.rlb.com

Las Vegas
3753 Howard Hughes Parkway, Suite #211
Las Vegas, Nevada 89169
Telephone: +1 702 227 8818
Email: LAS@us.rlb.com
Website: www.rlb.com

Los Angeles
The Bloc 700 South Flower Street, Suite 630
Los Angeles, California 90017
Telephone: +1 213 689 1103
Email: LAX@us.rlb.com
Website: www.rlb.com

Maui
300 Ohukai Road, Building B, Kihei, Hawaii 96753
Telephone: +1 808 875 1945
Email: OGG@us.rlb.com
Website: www.rlb.com

New York
Broad Street Center, 80 Broad Street, 5th Floor
New York, New York 10004
Telephone: +1 212 952 1300
Email: EWR@us.rlb.com
Website: www.rlb.com

Phoenix
4343 East Camelback Road, Suite 350
Phoenix, Arizona 85018
Telephone: +1 602 443 4848
Email: PHX@us.rlb.com
Website: www.rlb.com

Portland
1120 NW Couch Street, Suite 730, Portland
Oregon 97209
Telephone: +1 503 226 2730
Email: PDX@us.rlb.com
Website: www.rlb.com

San Francisco
850 Montgomery Street, Suite 100A,
San Francisco, California 94133
Telephone: +1 415 362 2613
Email: sfo@us.rlb.com
Website: www.rlb.com

Seattle
2003 Western Avenue, Suite 515, Seattle,
Washington 98121
Telephone: +1 206 223 2055
Email: emile.leroux@us.rlb.com
Website: www.rlb.com

Tucson
33 South Fifth Avenue, Tucson, Arizona 85701
Telephone: +1 520 777 7581
Email: TUS@us.rlb.com
Website: www.rlb.com

Waikoloa
Rider Levett Bucknall
68-1845 Waikoloa Road, Suite 202, Waikoloa
Hawaii 96738
Telephone: +1 808 883 3379
Email: KOA@us.rlb.com
Website: www.rlb.com

Washington DC
Rider Levett Bucknall
Metro Center, 1200 G Street NW, Suite 800,
Washington, DC 20005
Telephone: +1 202 457 1450
Email: DCA@us.rlb.com
Website: www.rlb.com

CARIBBEAN

Barbados
Altman Real Estate Annex, Derricks,
St. James, Barbados
Telephone: +1 246 256 0704
Email: erwin.benjamin@za.rlb.com

Cayman Islands
Fourth Floor, Genesis Building, 13 Genesis Close, PO Box 1489, Grand Cayman, KY1-1110
Telephone: +1 345 946 6063
Email: martyn.bould@ky.rlb.com
Website: www.rlb.com

St. Lucia
Desir Avenue, Sans Souci, CP 5745, Conway PO
Castries, St. Lucia
Telephone: +1 758 452 2125
Email: mark.williamson@lc.rlb.com
Website: www.rlb.com
Contact: Brad Paul

EUROPE

UNITED KINGDOM

Birmingham
Fifteen Colmore Row, Birmingham, B3 2BH
Telephone: +44 121 503 1500
Email: adam.ellis-morgan@uk.rlb.com
Website: www.rlb.com

Bristol
Embassy House, 86 Queens Avenue, Bristol, BS8 1SB, UK
Telephone: +44 0 117 974 1122
Email: jackie.pinder@uk.rlb.com
Website: www.rlb.com

Cumbria
44 Springfield Road, Egremont, Cumbria, CA22 2TQ
Telephone: +44 1946 815 800
Email: deryck.barton@uk.rlb.com
Website: www.rlb.com

Leeds
West One Level 2, 114 Wellington Street,
Leeds LS1 2BA
Telephone: 0113 457 3225
Email: matt.summerhill@uk.rlb.com
Website: www.rlb.com

London
60 New Broad Street, London, EC2M 1JJ
Telephone: +44 0 207 398 8300
Email: andrew.reynolds@uk.rlb.com
Website: www.rlb.com

Manchester
8 Exchange Quay, Salford Quays
Manchester, M5 3EJ
Telephone: +44 161 868 7700
Email: russell.bolton@uk.rlb.com
Website: www.rlb.com

Sheffield
6th Floor Orchard Lane Wing, Fountain Precinct
Balm Green, Sheffield, S1 2JA
Telephone: +44 0 114 273 3300
Email: steven.reynolds@uk.rlb.com
Website: www.rlb.com

INTERNATIONAL OFFICES

Warrington/Birchwood
Ground South Wing,
401 Faraday Street, Birchwood Park
Warrington, WA3 6GA
Telephone: +44 7771 986099
Email: deryck.barton@uk.rlb.com
Website: www.rlb.com

Welwyn Garden City
29 Broadwater Road, Welwyn Garden City
Hertfordshire, AL7 3BQ
Telephone: +44 20 7398 8300
Email: andrew.reynolds@uk.rlb.com
Website: www.rlb.com

Thames Valley
1000 Eskdale Road, Winnersh Triangle, Wokingham
Berkshire, RG41 5TS
Telephone: +44 0 118 974 3600
Email: michael.righton@uk.rlb.com
Website: www.rlb.com

RLB EURO ALLIANCE
Telephone: +44 7764 285899
Email: andrew.reynolds@uk.rlb.com
Website: www.rlb.com
Contact: Andrew Reynolds

OCEANIA

AUSTRALIA

Adelaide
Rider Levett Bucknall SA Pty Ltd
Level 1, 8 Leigh Street, Adelaide, SA 5000
Telephone: +61 8 8100 1200
Email: andrew.suttie@au.rlb.com
Website: www.rlb.com

Brisbane
Rider Levett Bucknall Qld Pty Ltd
Level 13, 10 Eagle Street, Brisbane, QLD 4000
Telephone: +617 3009 6933
Email: david.stewart@au.rlb.com
Website: www.rlb.com

Cairns
Rider Levett Bucknall Qld Pty Ltd
Suite 7, 1st Floor, Cairns Professional Centre,
92-96 Pease Street, Cairns QLD 4870
Telephone: +61 7 4032 1533
Email: nicolas.duncan@au.rlb.com
Website: www.rlb.com

Canberra
Rider Levett Bucknall Qld Pty Ltd
16 Bentham Street, Yarralumla ACT 2600
Telephone: +61 2 6281 5446
Email: mark.chappe@au.rlb.com
Website: www.rlb.com

Coffs Harbour
Rider Levett Bucknall NSW Pty Ltd
Level 1, 9 Park Avenue, Coffs Harbour NSW 2450
Telephone: +61 2 4940 0000
Email: mark.hocking@au.rlb.com
Website: www.rlb.com

Darwin
Rider Levett Bucknall NT Pty Ltd
Level 4, 62 Cavanagh Street, Darwin NT 0800
Telephone: +61 8 8941 2262
Email: paul.lassemillantee@au.rlb.com
Website: www.rlb.com

INTERNATIONAL OFFICES

Melbourne
Rider Levett Bucknall Victoria Pty Ltd
Level 13, 380 St. Kilda Road, Melbourne VIC 3004
Telephone: +61 3 9690 6111
Email: ewen.mcdonald@au.rlb.com
Website: www.rlb.com

Newcastle
Rider Levett Bucknall NSW Pty Ltd
63 Lindsay Street, Hamilton NSW 2303
Telephone: +61 2 4940 0000
Email: mark.hocking@au.rlb.com
Website: www.rlb.com

Perth
Rider Levett Bucknall WA Pty
Level 9, 160 St George's Terrace, Perth, WA 6000
Telephone: +61 8 9421 1230
Email: mark.bendotti@au.rlb.com
Website: www.rlb.com

Sunshine Coast
Rider Levett Bucknall Qld Pty Ltd
63 The Esplanade, Maroochydore QLD 4558
Telephone: +61 7 5443 3622
Email: suncoast@au.rlb.com
Website: www.rlb.com

Sydney
Rider Levett Bucknall NSW Pty Ltd
Level 19, 141 Walker Street, North Sydney NSW 2060
Telephone: +61 2 9922 2277
Email: matthew.harris@au.rlb.com
Website: www.rlb.com

Townsville
Rider Levett Bucknall Qld Pty Ltd
Level 1, 45 Eyre Street, North Ward,
Townsville QLD 4810
Telephone: +61 7 4771 5718
Email: chris.marais@au.rlb.com
Website: www.rlb.com

NEW ZEALAND

Auckland
Rider Levett Bucknall Auckland Ltd
Level 16, Vero Center, 48 Shortland Street,
Auckland 1141
Telephone: +64 9 309 1074
Email: stephen.gracey@nz.rlb.com

Christchurch
Rider Levett Bucknall Christchurch Ltd
Level 1, 254 Montreal Street, Christchurch 8013
Telephone: +64 3 354 6873
Email: neil.odonell@nz.rlb.com
Website: www.rlb.com

Hamilton
Rider Levett Bucknall Hamilton Ltd
Level 3, 103 London Street, Hamilton 3204
Telephone: +64 7 839 1306
Email: richard.anderson@nz.rlb.com
Website: www.rlb.com

Palmerston North
Rider Levett Bucknall Palmerston North Ltd
Suite 1, Level 1, 219 Broadway Avenue,
Palmerston North 4440
Telephone: +64 6 357 0326
Email: tony.sutherland@nz.rlb.com
Website: www.rlb.com

Queenstown
Rider Levett Bucknall Otago Ltd
Level 3, The Mountaineer Building,
32 Rees Street, PO Box 691, Queenstown 9348
Telephone: +64 3 409 0325
Email: tony.tudor@nz.rlb.com
Website: www.rlb.com

Tauranga
Rider Levett Bucknall Auckland Ltd
3/602 Camron Road, Tauranga 3141
Telephone: +64 7 579 5873
Email: richard.anderson@nz.rlb.com
Website: www.rlb.com

Wellington
Rider Levett Bucknall Wellington Ltd
Level 1, 279 Willis Street, Wellington 6011
Telephone: +64 4 384 9198
Email: tony.sutherland@nz.rlb.com
Website: www.rlb.com

Miscellaneous

Conversion Factors

Calculation Formulae

Foreign Exchange Rate

IDD Country Codes and Time Differences

Philippine Regular Holidays and Special (Non-Working) Days

Abridged Business Terms

2018 and 2019 Calendars

Conversion Factors

To convert	Multiply by
AREA	
Square inches into square millimeters	645.16
Square inches into square centimeters	6.4516
Square feet into square centimeters	929.0304
Square feet into meters	0.092903
Square yards into square feet	9.00
Square yards into square meters	0.8356127
Square meters into square feet	10.764
Square meters into square yards	1.196
Square yards into acres	0.0083613
Acres into square meters	4046.8564
Acres into square yards	4,840
Acres into hectares	0.4046856
Hectares into acres	2.471
Hectares into square meters	10,000
Square kilometers into hectares	100
Square miles into square kilometers	2.589988
Square miles into acres	638.0
Square kilometers into square miles	0.386
VOLUME AND CAPACITY	
Cubic inches into cubic centimeters	16387064
Cubic inches into liters	0.016387
Cubic feet into cubic meters	0.0283168
Cubic feet into liters	28.316847
UK pints into liters	0.5682613
US pints into liters	0.473
UK liters into pints	1.760
UK liters into gallons	0.220
US liters into gallons	0.264
US liters into pints	2.113
UK quarts into liters	1.1365225
Cubic yards into cubic meters	0.7645549
UK gallons into liters	4.54609
US gallons into liters	3.785
UK gallons into cubic meters	0.0045461
UK fluid ounces into cubic centimeters	28.413063
POWER	
Foot pounds-force per second into watts	1.35582
Horsepower into watts	745.7
Foot pounds-force per second into kilowatts	0.001356
Horsepower into kilowatts	0.7457
Kilowatts into horsepower	1.340
Horsepower into metric horsepower	1.01387
MASS	
Grains into milligrams	64.79891

To convert	Multiply by
Grains into metric carats	0.323995
Grains into grams	0.064799
Pennyweights into grams	1.555174
Grams into ounces	0.035
Ounces into grams	28.349523
Ounces troy into grams	31.103477
Ounces into kilograms	0.0283495
Pounds into kilograms	0.4535924
Kilograms into pounds	2.205
Stones into kilograms	6.3502932
Hundredweight into kilograms	50.802345
Tons into kilograms	1,016.0469
Tons into metric tones	1.01605
Tons into pounds	2.240
Tons into tones	1.016
Tones into tons	0.984
Tahills into grams	37.799
Kati into kilograms	0.6
LENGTH	
Milli-inches into micrometers	25.4
Inches into millimeters	25.4
Inches into centimeters	2.54
Inches into meters	0.0254
Centimeters into inches	0.394
Feet into millimeters	304.8
Feet into centimeters	30.48
Feet into meters	0.3048
Yards into meters	0.9144
Fathoms into meters	1.8288
Chains into meters	20.1168
Furlongs into meters	201.168
Miles, statute into kilometers	1.609344
Miles, nautical into kilometers	1.852
VELOCITY	
Centimeters per second into feet per second	0.03281
Meters per second into feet per minute	196.9
Meters per second into feet per second	3.281
Kilometers per hour into miles per hour	0.6214
TEMPERATURE	
Degree Celsius to Degree Fahrenheit	ºF = (ºC x 9/5) + 32
Degree Fahrenheit to Degree Celsius	ºC = (ºF-32) x 5/9
FORCE	
Newtons into pounds force	0.2248
Newtons into pounds	7.2330

Calculation Formulae

To calculate	Multiply
Area of Triangle	Base by 1/2 height
Area of Circle	$(\text{radius})^2$ by 3.1416
Area of sector of circle	Length of arc by 1/2 radius
Area of square, rhombus	Base x height
Area of equilateral triangle	$(\text{Side})^2$ x 0.433
Area of trapezium	Height x 1/2 x (sum of parallel sides)
Area of ellipse	Major axis by minor axis x 0.7854
Area of parabola	2/3 x base x height
Circumference of circle	Diameter x 3.1416
Surface area of cone	4 x $(\text{radius})^2$ x 3.1416
Volume of cylinder	(radius by slant side by 3.1416) + area of base
Volume of cube or prism	Area of base by height
Volume of cone	Length by breadth by depth
Volume of hexagonal prism	$(\text{Side})^2$ by height by 2.598
Volume of Sphere	4/3 x $(\text{radius})^3$ x 3.1416

CURRENCY		UNITS PER USD											
		UNIT	JAN 17	FEB 17	MAR 17	APR 17	MAY 17	JUN 17	JUL 17	AUG 17	SEP 17	OCT 17	NOV 17	DEC 17
Philippine Peso	PHP	1	49.81	50.27	50.20	49.70	49.87	50.47	50.58	51.17	51.07	51.80	50.37	49.92
Singapore Dollar	SGD	1	1.42	1.40	1.40	1.40	1.38	1.38	1.36	1.36	1.36	1.36	1.35	1.34
U.K. Pound Sterling	GBP	1	1.25	1.24	1.25	1.29	1.28	1.30	1.31	1.29	1.33	1.32	1.34	1.35
Australian Dollar	AUD	1	0.76	0.77	0.76	0.75	0.75	0.77	0.80	0.79	0.78	0.77	0.76	0.78
Chinese Yuan	CNY	1	6.90	6.87	6.89	6.90	6.83	6.78	6.73	6.60	6.65	6.63	6.61	6.51
Japanese Yen	JPY	1	113.6	112.55	112.05	111.25	110.95	111.94	110.55	110.50	112.66	113.150	112.00	112.90
Malaysian Ringgit	MYR	1	4.43	4.45	4.43	4.35	4.28	4.29	4.28	4.27	4.23	4.23	4.10	4.10
Indonesian Rupiah	IDR	1	13,343.00	13,347	13,321.00	13,327.00	13,321.00	13,319.00	13,323.00	13,351.00	13,492.00	13,572.00	13,514.00	13,548.00

Reference: IMF

IDD Country Codes and Time Differences

DESTINATION	IDD Country (Area) Code	Time Difference from Philippines (hours)
Adelaide	61 (8)	1.5
Bahrain	973	-5
Brisbane	61 (7)	2
Brunei	673	0
Cambodia	855	-1
Canberra	61 (2)	2
China (Coastal Cities)	86	0
Darwin	61 (8)	1.5
France	33	-7
Germany	49	-7
Hobart	61 (3)	2
Hong Kong	853	0
India	91	-2.5
Indonesia (Jakarta)	62	-1
Italy	39	-7
Japan	81	1
Korea (North)	850	1
Korea (South)	82	1
Los Angeles	1	-16
Macau	853	0
Malaysia	60	0
Melbourne	61 (3)	2
Moscow	810 (7) (095)	-5
Myanmar	95	-1.5
Netherlands	31	-7
New Zealand	64	4
New York	1	-13
Pakistan	92	-3
Perth	61	0
Philippines	63	0
Qatar	974	-5
Saudi Arabia	966	-5
Singapore	65	0
Spain	34	-7
Sweden	46	-7
Switzerland	41	-7
St Petersburg	810 (7) (812, 813)	-5
Sydney	61	2
Taiwan	886	0
Thailand	66	-1
United Arab Emirates	971	-4
United Kingdom	44	-8
Vietnam	84	-1

Philippine Regular Holidays and Special (Non-Working) Days, Year 2018

DATE	HOLIDAYS
JANUARY 1 Monday	New Year's Day (Regular Holiday)
FEBRUARY 16 Friday	Chinese New Year
FEBRUARY 25 Sunday	EDSA People Power Revolution Anniversary
MARCH 29 Thursday	Maundy Thursday
MARCH 30 Friday	Good Friday
MARCH 31 Friday	Black Saturday
APRIL 9 Monday	Day of Valor
MAY 1 Tuesday	Labor Day
JUNE 12 Tuesday	Independence Day
AUGUST 21 Tuesday	Ninoy Aquino Day
AUGUST 27 Monday	National Heroes' Day
NOVEMBER 1 Thursday	All Saints' Day
NOVEMBER 2 Friday	All Soul's Day (Additional Non-Working Holiday)
NOVEMBER 30 Friday	Bonifacio Day
DECEMBER 24 Monday	Christmas Eve (Additional Non-Working Holiday)
DECEMBER 25 Tuesday	Christmas Day
DECEMBER 30 Sunday	Rizal Day
DECEMBER 31 Monday	Last Day of the Year

MISCELLANEOUS

Abridged Business Terms

A	
A.a.r. , A.r.	Against all risks
a/c	Account
A/C	Account Current
Acc	Acceptance; accepted
Ad ref	Ad referendum – matter subject to reference before being final.
Ad val	Ad valorem – according to value
Afloat	Vessel at sea.
A.g.b.	A good brand
A.l.s.	About like sample
Anglo-form Chamber of Shipping	Cottion, etc., Charter (freight paid on streamer's Net reg. ton).
A/or	And, or
A/o	Account of.
A.P.	(1) A protester (to be Protested bills). (2) Additional premium (insurance).
A/R.	All risks.
A/s	Account sales
A/T.	American Terms (grain trade) Association Terms
Aus. T	Australian Terms.
Av.	Average
@	at
@p.lb.	at per pound

B	
Bags/Bulk Part in bags, part bulk. "Baltcon" New Baltic Coal Charter. "Baltime" Uniform Time Charter.	
Bar.	Barrel
B.B.	Bill Book.
B. Ch.	Bristol Channel
B/D.	Bank Draft.
Bgs.	Bags.
Bd.	Bond
Bds.	Boards
B/E.	Bill of Exchange
B.G.	Birmingham Gauge
B/H.	Bill of Health.
B.H.P.	Brake horse-power.
Bk.	Bank; book; Backwardation
Bkg.	Banking.
Bkge.	Brokerage.
Bkt.	Basket
Bl.	Bale; barrel.
B/L.	Bill of lading, Receipt Given on behalf of Shipowner for goods Shipped or received for Shipment.
B.o.	Branch office; buyer's Option

B	
B.O.D.	Buyer's Option to Double
B.O.T.	Board of Trade
B/P	Bill Payable
B.P.B.	Bank Post Bill.
b. rec.	Bill Receivable
B/R	Bordeaux or Rouen (grain trade)

C	
C/-	Case; Currency; coupon.
C/A.	Capital Account; close Annealed; commercial Agent.
C.A.D.	Cash against Documents.
Canclg.	Cancelling.
Capt.	Captain.
Cat.	Catalogue
C.B.	Cash Book.
C.C.	Continuation Clause.
C/D	Customs Declaration
C.d.	Cum dividendo (with Dividend).
C and D	Collection and Delivery.
C.E.	Civil Engineer
Cert.	Certificate
C&F.	Cost and Freight
C/f.	Carried forward.
Cert. Inv.	Certified Invoice
c.f.	Carried forward
C.f.o.	Coast for orders (chartering).
C.G.A	Cargo's proportion of G.A.
Cge.	Carriage.
C.H.	Customs House.
C.H. & H.	Continent between Havre And Hamburg.
Charter	Form of contract engaging A vessel on specified Terms.
Ch. Fwd.	Charges forward.
Ch. Ppd.	Charges Prepaid.
c/i.	certificate of insurance.
Cie	Campagnie (French Company).
C.I.F.	Cost, insurance and freight
C&I.	Cost and insurance.
C.i.f.&c.	Cost, insurance, freight and commission
C.i.f.&e.	Cost, insurance, freight And exchange
C.i.f.&i.	Cost, insurance, freight And interest.
C.i.f.c.&i.	Cost, insurance, freight Commission and interest.
Cld.	Cleared (goods, shipping).
Cm.	Centimetre

C	
C/N	Credit Note; Consignment Note.
C.O.	Compte Ouvert (open a/c).
C/O	Cash Order (banking)
c/o	care of; carried over.
C.O.D.	Cash on Delivery
Collr.	Collector
Com.	Commercial; Commission.
Con.	Contra (against)
Con. Cr.	Contra credit
Consigne	The party to whom goods Or vessels are consigned
Cont.	Contract
Coy.	Company
C/P.	Charter party; Custom of ports
c.p.d.	Charters Pay Dues.
C.R.	Company's Risks
Cr.	Credit; creditor.
C/S.	Colliery Screened (coal Trade).
C/s.	Cases
Csk.	Cask
C/T.	Californian Terms (grain Trade).
Ct.	cent; current
Cts.	Crates
Ctge.	Cartage.
C.T.L.	Constructive Total Loss.
Cub.	Cubic
Cum.d/	With dividend
Cum. Pref.	Cumulative Preference.
Curt.	Current
C.w.o.	Cash with order
Cwt.	Hundredweight.
Cy.	Currency.

D	
D/A.	Days after acceptance; Documents against Acceptance; Discharge Afloat (chartering); Deposit Account.
D.B.B.	Deals, battens and boards (lightwood goods).
Dbk.	Drawback.
D/C.	Deviation Clause.
D/D.	Demad Draft
D/d.	Days after date.
Dd.	Delivered
Dd/s.	Delivered sound (grain Trade).
D.D. and Shpg.	Dock Dues and Shipping.
Deb..	Debenture
Dec.	Decrease
Def.	Deferred

D	
Deg.	Degree
Dept.	Department
D.f.	Dead freight
Dft.	Draft.
Diam	Diameter
Dis	Discount
Dist.	District
Div.	Dividend; Division.
Dk.	Dock.
d.l.o.	Dispatch loading only.
D/N	Debit Note.
D/O	Delivery Order
Do.	Ditto
Dols.	Dollars
Doz.	Dozen
D/P.	Document against Payment
d.p.	Direct Port.
D/R	Deposit Receit
Dr.	Debtor; drawer. "dreding" Option General Cargo.
D/s.	Day's sight
D/W.	Dock Warrant

E	
Ea.	Each.
E&O.E.	Errors and omissions excepted
E.C.Ireland	East Coast Ireland
E.D.	Ex dividen
E.E.	Errors excepted.
E.g.	Exempli gratia (for Example).
E.I.	East Indies
Enclo.	Enclosure.
Entd.	Enetered
E.o.	Ex officio (by virtue of Office).
E.o.h.p.	Except otherwise herein Provided.
Eq.	Equivalent
Et.seq.	Et Sequentes (and the Following).
Ex.	Examined; exchange; Executed out of; without.
Exch.	Exchange; exchequer
Ex cp.	Ex coupon.
Exd.	Examined
Ex div.	Without dividend
Ex. In.	Without interest
Ex-Mill.	Buyer responsible for Charges after delivery at Mill.
Ex-parte.	One side only.
Ex-Quay	Buyer responsible for charges after delivery at Quay.

MISCELLANEOUS

E	
Ex-Ship.	Buyer responsible for Charges after delivery at Ship.
Ex-Store/ warehouse	Buyer responsible for Charges after delivery at Store.
Exs.	Expenses.

F	
F.a.a.	Free of all average
Fac.	Facsimile.
F.a.q.	Fair average quality.
F.a.s.	Free alongside ship. In this form of contract the seller must deliver the goods so they can be handled by the ship.
Fco.	Franco abord or Franco (free).
F.c.s.	Free of capture and Seizure.
F.C&S. and R and C.C.	Warranted free from above and damage caused by Riots and civil commotions.
F.D.D.	Francs de droit.
F/D.	Free docks.
f.d.	Free dispatch.
F.C&S. and R and C.C.	Warranted free from above and damage caused by Riots and civil commotions.
F.D.D.	Francs de droit.
F/D.	Free docks.
f.d.	Free dispatch.
F.f.a.	Free from alongside; (free foreign agency).
F.g.	Fully good.
F.g.a.	Foreign General average.
F.g.f.	Fully good, fair.
f.h.	First half
F.i.b.	Free into bunker (coal Trade).
Fig.	Figure.
f.i.a.	Full interest admitted.
F.i.o.	Free in and out
Fir.	Firkin.
F.i.t.	Free of income tax.
F.l.	Floating Landing.
F.m.	Fair Mercantable.
Fms.	Fathoms
F/o.	For orders; full out terms (grain trade).
F.O.	Firm Offer
F.o.b.	Free on board.
F.o.c.	Free of charge
f.o.d.	Free of damage
Flg.	Following
For.	Foreign
F.o.r.	Free on rail
F.o.s.	Free on streamer
F.o.t.	Free on trucks
F.o.w.	First open water.
F.p.	Fully paid

F	
F.p.a.	Free from particular Average.
Fr. & c.c.	Free of riot and civil Commotion.
Frt.	Freight
Frt. fwd	Freight forward
Frt. Ppd.	Freight prepaid
f.t.	Full terms
Ft.	Foot, feet.
F.T.W.	Free Trade Wharf.
Fur.	Furlong.

G	
G/a.	General average.
Gall.	Gallon
G.B.	Great Britain.
G.b.o.	Goods in bad order.
G.gr.	Great gross (144 doz).
g.l.	Gill.
G.m.	Good merchantable
G.m.b.	Good merchantable brand
G.m.q.	Good merchantable Quality.
G.o.b.	Good ordinary brand.
Govt.	Government
Gr.	Gross.
Gr.Wt.	Gross weight
Grs.	Grains
Grs.t.	Gross tons
G.t.c.	Good till countermanded.
Grade	Classified Qaulity.

H	
Hewn	Hewn timber per load.
Hhd.	Hogshead.
H.M.C.	His Majesty's Customs
H.P.	Horse-power.
H.P.N.	Horse-power, Nominal.
Hrs.	Hours

I	
I.B.	Invoice Book.
Ib.	ibidem-in the same place.
I.B.I.	Invoice book Inwards
I.B.O.	Invoice Book Outwards.
id.	Idem-the same.
i.e.	Idest-that is.
I/L	Import License.
Incldg.	Including
Inst.	Instant-of the present Month.
Instn.	Institution
Instns.	Institution
Int.	Interest.
In trans	In transitu (in transit)
Inv.	Invoice
I.O.U.	I owe you
I.S.W.G.	Imperial Standard Wire Gauge.

J	
J/A	Joint Account.
Jr.	Junior

K	
Kild.	Kilderkin
Kilo.	Kilogramme
Kincon.	United Kingdom or Continent

L	
L.A.T.	Linseed Association Terms
Lat.	Latitude
Lb.	pound in weight
L/C.	Letter of Credit.
Ldg. And dely.	Landing and Delivery
Led.	Ledger.
Leg. Wt.	Legal weight
lh.	Last half.
L.I.P.	Life Insurance Policy
Long.	Longitude
L.S.	Locus siglili-place of seal.
L.T.	Liverpool Terms.

M	
m.	meter, mile, minute
M/a.	My account
Max.	Maximum
M/C.	Marginal credit (banking)
M/C.	Metalling Clause (marine Insurance)
M/D.	Memorandum of Deposit
M/d.	Month's date (i.e Months after date)
Mdise	Merchandise
Med.	Medium
Memo.	Memorandum
Michs	Michaelmas
Min.	Minimum, minute
Min. B/L.	Minimum Bill of Lading
Min. wt.	Minimum weight
M.I.P.	Marine Insurance Policy
Mks.	Marks
M/m.	Made merchantable
M.M.	Merchantile Marine
M.M.A.	Merchandise Marks Act.
M.O.	Money Order
M.O.P.	Mother-of-pearl
Mos.	Months
M/R	Mate's Receipt
Ms.	Manuscripts; mail streamer
M.S.	Motor ship
M/s.	Month's sight (i.e. month's After sight).
M.S.A.	Merchant Shipping Act.

M	
M.S.C.	Manchester Ship Canal
M.V.	Motor vessel
Mx.	Mixed.

N	
N.A.	Not above-used in fixing Loading positions in River Plate.
N.A.	North America.
N/A.	No advice (banking)
N.B.	Take note-mark well.
N/C.	New Charter or New Crop.
N/C or any	New Charter or any direct Port.
N.E.	No effects.
Nem. con	No one contradicting
Net	Netto (lowest)
Net terms.	Free of Charterer's Commission.
N/f.	No funds.
N.G.	No Grade
N/m.	No mark
N/O.	No orders (banking)
Nom.	Nominal
No reduction Bristol	Channel.
'N.o.p.	Not otherwise provided.
N.p.	Notary Public
n/p.	Net proceeds
Nos.	Numbers
N.R.	No risk (insurance)
N/S.	No sufficient (banking)
N.S.	New Style; New Series
N.t.	New Terms (grain trade)
Net t.	Net tons
Nt. Wt.	Net weight.

O	
O/a.	On account of
O.C.	Open Charter
O.c.	Off coast
o/c.	Overcharge
oc. B/L.	Ocean Bill of Lading
O/d.	On demand Off Coast Vessel at port of call awaiting orders
%	Order of; percent
% o	Per Mile-per thousand
O.P.	Open Policy (insurance)
O.R.	Owner's Risk
O.R.B.	Owner's risk of brekage
O.R.C.	Owner's risk of Chafinge
O.R.D.	Owner's risk of damage
O.R.F.	Owner's Risk of fire
O.R.I.	Owner's risk leakage
Ord.	Ordinary

MISCELLANEOUS

O	
O/s.	Old style
O/t.	Old Term(graintrade)
O.T.	n track or railway
Oz.	Ounce.

P	
P/A.	Private Account (bookkeeping)
P.A.	Particular Average
Pcl.	Parcel, part of a cargo
P and L.	Profit and Loss
P/C	Price Current; Pretty Cash; Per Cent
Pc.	Prices
P.c.r.c.a.	Pickled cold rolled and Close annealed
Pcs.	Pieces.
P.C.B.	Petty Cash Book
P.D.	Port Dues. "Pixpinus" Charter Party in use for Pitchpine Cargoes
Pk.	Peck
Pkg.	Package
P.L.	Partial Loss (Insurance)
P.m.	Premium
P/N.	Promissory Note.
P.O.	Postal Order.
P.O.B.	Post Office Box.
P.O.D.	Pay on Delivery
p.p..	Picked ports (chartering)
Per pro	Per procuration (on Behalf of).
Ppd.	Prepaid
P.p.i.	Policy proof of interest (marine insurance)
Ppt.	Prompt loading
Pref.	Preference of preferred
Pres.	President
Pro.	For.
Pro. and con.	For and against
Pro forma	As a matter of form
Pro tem	Pro tempore for the time being
Prox.	Proximo of the next month
P.R.	Parcel Receipt
Pt.	Pint
P.T.	Parcel Ticket
P.T.O.	Please Turn Over
Pts.	Pints
P.X.	Please Exchange

Q	
Qlty.	Quality
Qrs.	Quarters
Qts.	Quarts.
q.v.	Quod vide – which see.
Quid pro quo.	One exchanged for an Other an equivalent
Qy	Query

R	
R.A.T.	Rapeseed Association Terms
R/D.	Refer to Drawer (banking)
R.D.C.	Running-down Clause (insurance)
Re.	with reference to.
Recd.	Received
Regd.	Registered
R.I.	Re-insurance
R.O.	Receiving Office
R.P.	Reply Paid
R.S.O.	Railway Sub-Office
R.S.V.P.	Reply please.

S	
Sawn	Sawn Timber per standard
s.c.	scilicet (i.e. to wit)
Scale	Freight paid for Customary Scale Ton.
s/d.	Sea damaged (grain trade).
s.d.	Sine die (indefinitely).
S.D.	Sea damaged. In Contracts on this basis Grain damaged by water Or consideration may be Rejected by buyers
Sec.	Section; secretary
S&F.A.	Shipping and Forwarding Agent
Seq.	The following
S.g.	Specific gravity
S.G.	Used in a loyd's policy and signifying according to some "Ship and Goods" but probably more correctly Salutia Gratis – for the stake of safety
Sgd.	Signed
Shipt.	Shipment
S.H.P.	Shaft horse-power
Shr.	Share
S.I.	Short Interest (insurance)
Sks.	Sacks.
SI.	Sailer
S.I.	Salvage Loss
S/N.	Shipping Note
S.o.	Seller's Option
S.O.D.	Seller's option to double
Soc.	Society.
S.p.d.	Streamer pays due
S.P.	Supra Protest
S.S. & C.	Same Sea and Country
St..	Stone (in weight)
St.	Stet (let in stand)
s.t.	Short ton (2,000 lb).
Std.	Standard.
Stk.	Stock

S	
Str.	Streamer
S. to S.	Station to Station
Sun/ exct.	Sunday excepted in Lay-days
S.w.	Shipper's Weight
T	
T.	Tons; tare
TB.	Trial Balance
Tcs.	Tierces
T.E.	Trade Expenses
Thro'B/L	Through Bill of Lading
T.L.O.	Total Loss only (marine Insurance)
U	
U/a.	Underwriting account (Marine insurance)
U.K.f.o.	United Kingdom for Orders
Ult.	Ultimo – of the last month
U /p.	Under proof (spirits)
U/w.	Underwriter.
V	
V.	Versus – against
Var.	Various
Vid.	Vide – see.
V.S.	Visible Supply
Viz.	Videlicet – namely
v.v	Vice versa
W	
W.A	Western Australia
W.B.	Warehouse Book; Way Bill
w.b.	Water Ballast
W.C.	West Coast England
W.d.	Warranted
W.G.	Wire Gauge
w.g.	Weight guaranteed
w.p.a.	with particular average
W.P.	Without prejudice (insurance)
w.r.	Warehouse receipts
W/W.	Warehouse Warrant
Y	
Y/A	York Antwerp Rules (marine insurance) 10s 6d. net 10s. 6d net charter 2,158n

2018 CALENDAR

JANUARY

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

FEBRUARY

S	M	T	W	Th	F	S
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11	12	13	14	15	16	17
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MARCH

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25	26	27	28	29	30	31

APRIL

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MAY

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JUNE

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JULY

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AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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2019 CALENDAR

JANUARY

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FEBRUARY

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MARCH

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APRIL

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MAY

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JUNE

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JULY

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AUGUST

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SEPTEMBER

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OCTOBER

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NOVEMBER

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DECEMBER

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29	30	31				

For questions and further clarifications regarding the data and articles in this publication, please contact:

Rommel de Vera
Quantity Surveying Manager - Infrastructure Projects

Maria Rowena Aganon
Assistant Quantity Surveying Manager

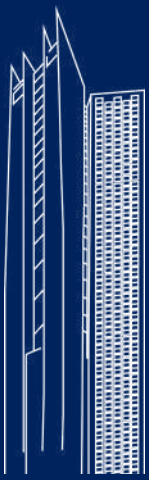
Eloisa Ann Antinero
Research and Development Officer

Immanuelle Capuyan
Research Analyst

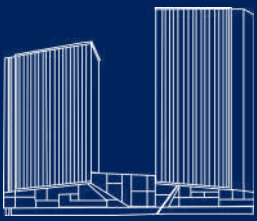
RIDER LEVETT BUCKNALL PHILIPPINES, INC.

Main Office:
Building 3, Corazon Clemeña Compound, No. 54
Danny Floro Street, Bagong Ilog, Pasig City,
1600, Philippines
T: +63 2 234 0141 / 234 0129
F: +63 2 570 4025
E: rlb@ph.rlb.com, bizdev@ph.rlb.com
C: Corazon Clemeña Ballard

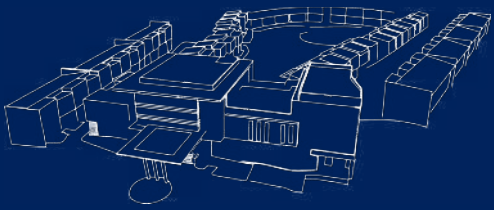
Qualimed Altaraza



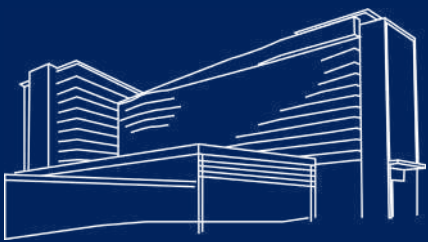
Shangri-la at the Fort



HSS Corporate Plaza



Ayacca Marine Resort



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