December 2019

CHINA REPORT

CONSTRUCTION PROCUREMENT AND COST INTELLIGENCE

RLB 利比 Rider Levett Bucknall

OFFICES AROUND THE WORLD

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Gaborone

Mauritius
Quatre Bornes

Mozambique
Maputo

South Africa
Cape Town
Durban
Johannesburg
Pretoria
Stellenbosch

ASIA

North Asia
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Chongqing
Guangzhou
Guiyang
Haikou
Hangzhou
Hong Kong
Jeju
Macau
Nanjing
Nanning
Seoul
Shanghai
Shenyang
Shenzhen
Tianjin
Wuhan
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Xiamen
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Cagayan de Oro
Cebu
Clark
Davao
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Kuala Lumpur
Laguna
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Singapore
Subic
Yangon

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Hilo
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Maui
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San Jose
Seattle
Toronto
Tucson
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Montenegro
Netherlands
Norway
Poland
Portugal
Romania
Russia
Serbia
Spain
Sweden
Turkey

MIDDLE EAST

Oman
Muscat

Qatar
Doha

Saudi Arabia
Riyadh

United Arab Emirates
Abu Dhabi
Dubai

OCEANIA

Australia
Adelaide
Brisbane
Cairns
Canberra
Coffs Harbour
Darwin
Gold Coast
Melbourne
Newcastle
Perth
Sunshine Coast
Sydney
Townsville

New Zealand
Auckland
Christchurch
Hamilton
Palmerston North
Queenstown
Tauranga
Wellington

FOREWORD

In the first three quarters of 2019, China's economic performance continued to maintain overall stability and structural adjustment has been steadily advancing. GDP grew by 6.2% year-on-year, with GDP growing by 6.4% year-on-year in the first quarter, 6.2% year-on-year in the second quarter and 6.0% year-on-year in the third quarter.

In January-September 2019, China's real estate development investment was RMB9.8008 trillion, up 10.5% year-on-year in nominal terms, and the growth rate maintained the same level compared with January-August. Amongst them, residential investment was RMB7.2146 trillion, an increase of 14.9%, and the growth rate maintained the same level. Residential investment accounted for 73.61% of real estate development investment.

From January to September, real estate development investment in the Eastern region (*see notes) was RMB5.168 trillion, up 8.6% year-on-year, slowed down by 0.2% from January-August; Investment of Central region was RMB2.048 trillion, up 10.0% year-on-year, growth accelerated by 0.2%; Investment in Western region was RMB2.175 trillion, growth of 16.2%, accelerated by 0.2%, and investment in the Northeast region was RMB4.093 trillion, an increase of 9.9%, and the growth rate accelerated by 0.2%.

From January to September, the construction floor area of real estate development enterprises was 8.342 billion square meters, up 8.7% year-on-year, down 0.1% from January-August. Amongst them, residential construction floor area was 5.837 billion square meters, an increase of 10.1%. New housing construction floor area was 1.657 billion square meters, an increase of 8.6%, the growth rate fell by 0.3 %. Amongst them, new residential construction floor area was 1.223 billion square meters, an increase of 8.8%. The total area of completed houses was 467.48 million square meters, a decrease of 8.6% with decreasing rate slowed down by 1.4%. Therein, the total area of residential completion was 330.84 million square meters, a decrease of 8.5%.

From January to September, real estate development enterprises purchased 154.54 million square meters of land, down 20.2% year-on-year, a decrease of 5.4% from January-August; Real estate transaction price was RMB818.6 billion, down 18.2% with decreasing rate slowed down by 3.8% in total.

(Source: www.stats.gov.cn)

*The Eastern region includes 10 provinces (cities) in Beijing, Tianjin, Hebei, Shanghai, Jiangsu, Zhejiang, Fujian, Shandong, Guangdong and Hainan;

*The Central region includes Shanxi, Anhui, Jiangxi, Henan, Hubei and Hunan provinces;

*The Western region includes 12 provinces (municipalities and autonomous regions) in Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Tibet, Shaanxi, Gansu, Qinghai, Ningxia and Xinjiang;

*The Northeast region includes Liaoning, Jilin and Heilongjiang provinces.

IMPORT PRICE COMPONENTS FOR CHINESE BUILDING MATERIALS/EQUIPMENT

Building materials/equipment import price refers to the price of building materials/equipment imported from one country to another country given that a normal trade is conducted, i.e. the price of the products that the importers buy from the exporters. The price is mainly composed of the following parts:

1. Import price

Import price refers to sale price delivered to the shipment by the seller, so called FOB. Import price for building materials/equipment shall be calculated based on the suppliers' quotation and the purchase order.

2. Import expenses

All the related expenses during the I/E (import/export) trade for the materials/equipment transported into China by importers and exporters except for the material/equipment price (FOB).

2.1 International freight

The transportation cost from the port (station) of the seller to the port (station) in China. Most imported materials/equipment in our country are by shipping, some by railway and few by air. The international freight of the imported materials/equipment shall be calculated as below formula:
(1) International freight (sea, land, air) = Free on board (FOB) × Freight rate; or
(2) International freight (sea, land, air) = Freight quantity × Freight unit price,
Freight rate and freight unit price shall be calculated based on regulations from relevant authorities or I/E (import/export) company.

*Free on board (FOB) + International freight = Cost and freight (CFR)

2.2 Freight premium

The freight premium for I/E trade is a written agreement between the insurer (insurance company) and the insured (I/E company). The insurer shall reimburse the insured any financial loss under the liabilities which are covered in the insurance agreement. This falls within property insurance. The formula is
freight premium = (Free on board (FOB) + international freight) / (1 - premium rate) × premium rate.
The premium rate shall refer to the premium defined by the insurance company for the imported goods.

*Free on board (FOB) + International freight + freight premium = Cost insurance and freight (CIF)

2.3 I/E expense

Including bank charges, I/E trade commission, tariff, sales tax, import VAT (value-added tax) and vehicle purchase tax for imported vehicle. It shall be calculated as below formula:
(1) Bank charges=Free on board (FOB) × RMB exchange rate × Bank charges rate.
(2) I/E trade commission=Cost insurance and freight (CIF)×RMB exchange rate× Foreign trade commission rate.
(3) Tariff=Cost insurance and freight (CIF) ×RMB exchange rate× Imported tariff rate.
(4) Payable sales tax = (Cost insurance and freight (CIF) ×RMB exchange rate + tariff) / (1- sales tax rate) × sales tax rate. Sale tax rate shall be calculated according to relevant regulations.
(5) Import VAT = Composite value × VAT rate; Composite value = Tariff dutiable value + Tariff + Sales tax. Sales tax rate shall be calculated according to relevant regulations.

2.4 Miscellaneous freight charges

The charges arising from purchasing, transportation, freight premium, storage, loading and unloading etc. for the imported materials/equipment transported from the port in China to the site warehouse or designated storage. It shall be calculated as below formula:
Miscellaneous freight charges = Free on board (FOB) × Freight charge rate. The freight charge rate shall be calculated according to relevant regulations.

3. Expected profit

The profit that the importer expects to make.

Please note the list above shall not be deemed as exhaustive. Please consult local authorities and I/E companies for detailed regulations. The regulations for fees & charges, etc. may vary from regions to regions, the cost calculation shall be determined after consultation with local authorities.

IMPORT PRICE COMPONENTS FOR CHINESE BUILDING MATERIALS / EQUIPMENT

Sample price breakdown (A)

This case is the imported product - 20mm thick jade green (imported from India), also known as Yinhe green in China, Grade A stone: length: 1600mm-2800mm; width: 900mm-2000mm.

The import price listed in the following table refers to the price of the product imported from Zapur, India to Chongqing, China.
(Price as at third quarter of 2019)

Item			Price RMB/m^2	Percentage %	Notes
1.	Import cost		375.00	64.33%	Free on board(FOB)
2.	Import expenses		110.81	19.01%	
	2.1 International freight		7.57	1.30%	Ocean freight of goods from the port (station) of the seller to the port (station) in China (varies with seasons and shipping companies)
	2.2 Freight premium		0.75	0.13%	Financial reimbursement for any loss under the liabilities which are covered in the insurance agreement.
	2.3	I/E expense	96.81	16.61%	
		2.3.1 Bank charges	-	-	N/A
		2.3.2 I/E Trade Commission	7.50	1.29%	
		2.3.3 Tariff	49.73	8.53%	
		2.3.4 Sales tax	-	-	N/A
		2.3.5 Import VAT	39.58	6.79%	
	2.4 Miscellaneous freight charges		5.68	0.97%	The charges arising from purchasing, transportation, freight premium, storage, loading and unloading etc. for the imported materials/equipment transported from the port in China to the site warehouse or designated storage.
3.	Expected profit (20% of total of items 1&2 above)		97.16	16.67%	
Import price (from 1 to 3)			**582.97**	**100.00%**	

Development Costs for Real Estate Investment in China

The major costs and fees are as follows:

1. **Land cost**

2. **Advance works**
   - **2.1 Design fees (for designer under statutory requirement)**
     Design fees, include hydro-geological surveys, topographic surveying, planning design fee, excavation and lateral support design fee, architecture/structure/fitting out design fee, civil defense design fee (for civil defense within the site boundary), landscape design fee, traffic design fee, etc.
   - **2.2 Consultancy fees**
     Consultancy fees (need to clarify the interface with designers as mentioned in item 2.1 above), include project management fee, MEP consultancy fee, curtain-wall / facade consultancy fee, interior designer consultant fee, lighting consultancy fee, and acoustic consultancy fee, graphic and signage consultancy fee, traffic manage-ment consultancy fee, hotel operator's hospitality operational consultancy fee, business administration consultancy fee, kitchen equipment consultancy fee, laundry equipment consultancy fee, green building / LEED authorized person consultancy fee, tender agency fee, quantity surveyor consultancy fee, legal advisor consultancy fee, etc.
   - **2.3 Temporary works**
     Temporary works, include temporary water connection, temporary electricity connection, temporary roads, temporary fencing, temporary drainage and sewage connection, rough grading and others (such as relocation of gas pipes and fire hydrants, trees transplant), etc.
   - **2.4 Professional consultation fees**
     Professional consultation fees, fees for consultation by the authorities, include feasibility study fee, curtain wall / facade assessment fee & expert report fee, energy saving calculation fee, environmental impact assessment fee, building survey and waterproof proposal assessment fee, piles testing fee, foundation monitoring fee, surrounding environment and pipeline monitoring fee, sunshine analysis fee, aseismic assessment fee, pipeline map fee, flooding assessment fee, traffic assessment fee, power substation environmental impact assessment fee, ACC (authorized check of construction drawing) fee, deep foundation pit assessment fee, boiler room safety assessment fee, fire fighting third party assessment fee, indoor environment assessment fee, and final account audit fees, etc.
   - **2.5 Tender management fees**
     Tendering management fees, include fees for site investigation, design consultant, contractors and supervision company.
   - **2.6 Quality assurance and inspection fees**
     Quality assurance and inspection fees, include quality assurance fee, environmental inspection fee, site surveying fees (including as-built building area surveying fee), bulk cement levy, termite prevention fees, special equipment safety inspection fees, special funds for new partition materials, etc.
   - **2.7 Planning permit application fee**
   - **2.8 Project supervision fee**
   - **2.9 Insurance premium**
   - **2.10 Project design archive fee**
   - **2.11 Royalties and Patents**
   - **2.12 Compensation fee for civil defense construction outside project site**

3. **Project construction costs**
   Project construction costs, total costs for constructing the permanent elements, include pile and foundation works, lateral support works, earthworks, structural works, architectural works, HV works, HVAC works, plumbing and drainage works, ELV works, fire protection works, town gas installation works, lift installation works, facade / curtain wall works, interior fitting out works, facade lighting installation works, external works and landscaping works, etc.

4. **Infrastructure costs**
   Infrastructure costs (inside site boundary), include utilities connections (include water, gas, etc.), in-coming power connection (including urban power grid cables outside the site boundary), communications connection, cable television fees, drainage, etc.

5. **Public facilities fees**
   Public facilities fees, related to public facilities incurred in the cost on developing the public facilities under the lease of land with non-refundable by the Government.

6. **Risk and uncertainty costs**
   Risk and uncertainty costs, include contingencies and escalation allowance.

7. **Taxes during development period**
   Taxes during the development, all taxes and levies regulated by the relevant departments and local governments, etc.

8. **Indirect costs**
   Indirect costs, include employer's management fee, building maintenance fund (from employer's part), real estate transaction fees, ownership certificate fees, marketing fees and finance charges, etc.

The costs above cannot be deemed as exhaustive, please contact the local authorities for details, and comply with regulations from regions. Since the fees and charges vary from region to region, please seek professional advice before investment.

Development Costs for Real Estate Investment in China

Cost Analysis

This case study exemplifies the costs associated with a commercial development in the centre of Shanghai, which comprises a 4-storey basement for carpark, office towers of 19-storey and 40-storey and a 4-storey podium for retail.

The height of office towers and retail are 100/180 meters and 24 meters respectively.

Site area is about 29,000m^2. Total construction floor area is 303,000m^2.

(Price as at third quarter of 2019)

Item		Total Cost RMB (Million)	Cost/m^2 RMB/m^2	Percentage %
1.	Land cost	7,962.63	26,279	64.9%
2.	Advance works	310.61	1,025	2.5%
	2.1 Design fees	212.66	702	1.7%
	2.2 Consultancy fees	43.30	143	0.4%
	2.3 Temporary works	9.62	32	0.1%
	2.4 Professional consultation fees	13.65	45	0.1%
	2.5 Tender management fees	0.15	-	-
	2.6 Quality assurance and inspection fee	11.26	37	0.1%
	2.7 Planning permit application fee	-	-	-
	2.8 Project supervision fee	13.58	45	0.1%
	2.9 Insurance premium	0.62	2	0.0%
	2.10 Project design archive fee	4.88	16	0.0%
	2.11 Royalties and Patents	0.89	3	0.0%
	2.12 Compensation fee for civil defense construction outside project site	-	-	-
3.	Project construction costs	3,522.37	11,625	28.7%
4.	Infrastructure costs	231.26	763	1.9%
5.	Public facilities fees	-	-	-
6.	Risk and uncertainty costs	120.59	398	1.0%
7.	Taxes during development period	-	-	-
8.	Indirect costs	125.54	414	1.0%
Total Costs for Real Estate Investment (1-8)		**12,273.00**	**40,505**	**100.0%**

Logistics Projects, North and South experience is very different!

Common types of structures for standard single/double-storey logistics warehouse projects include:

1. Steel structure ; and

2. Concrete frame and steel structure.

Different use or functions of logistics warehouse may result in different design and cost requirements. Logistics warehouses can be classified into: small and medium-sized warehouse, large warehouse, sorting center, cold storage and stereoscopic warehouse, etc.

The Main Characteristics of Logistics Projects:

Fundamental Features

From design, construction to final account, **the overall development cycle of logistics projects will be shorter than that of other types of projects** due to their unique nature, including:

a. The Owner invites Contractors with previous cooperation experience to participate in the tender, which greatly shortens the time required to select qualified tenderers to participate in tenders, conduct inspections and pre-qualification;
b. The Owners and the main team of professional consultants (e.g. cost consultants) sign strategic cooperation agreements to enable the relevant consultant members to be in place at an early stage;
c. Standardized design work can effectively reduce the time required for the design stage;
d. A simple contractual framework structure reduces the period for the bidding phase;
e. Tendering with construction drawings can effectively prevent later contract disputes;
f. Since most of the Contractors have worked with the Owners, it will be relatively easier for them to understand the design and quality requirements of the Owners, and communication with the Owners regarding technical specifications at an earlier stage can effectively reduce the financial risks they will have to bear in the future;
g. A limited number of design changes will help to complete the final account at an earlier date, etc.

Contract Method

Logistics projects will generally use a **main contract model** to sign with the Contractor. The scope of the project includes structure, mechanical and electrical equipment, electrical low voltage systems, fitting-out and landscaping etc. The contract framework is relatively simple compared to other contract forms, but the professionals in terms of knowledge and ability have different emphasis, they must pay attention to its overall coordination and time management. The most important thing is to set up a unified main contract tender plan and management system, in order to produce good results.

Procurement Period

Requirements are high for a logistics project during the main contract procurement period, from the beginning of the design to the award of the Main Contractor the procurement period **generally will not exceed three months**. If we deduct the preparation time for the drawings and specification the working time left for the cost consultant is relatively short. Furthermore, due to the lack of drawing details the cost consultant whilst measuring the works must also at the same time ask the design team queries and revise the tender document accordingly, on an already tight schedule and reduced working hours. RLB, through careful tender planning and strict quality control of each major stage, can meet the procurement period requirements.

Logistics Projects, North and South experience is very different!

Design Standards

Due to climate and environmental impacts, logistic projects in the North and the South are very different in terms of structure, insulation, mechanical and electrical works. **RLB will analyze item by item, let's take a look:**

Northern Region

Structural part: As the northern region is affected by the snow load in winter, the design requirements of the structure will generally be higher than those of the southern region (consider the basic snow pressure at 0.5KN/m2 to 0.55KN/m2), and for the logistics warehouse for storage space requirements, **the structure form is mainly a large span of portal frame light steel structure system or reinforced concrete frame**. If the construction takes place in winter, antifreeze admixtures need to be added to concrete, the concrete transportation machinery also needs to take antifreeze measures, resulting in increased construction costs.

Insulation: For the external concrete wall, the insulation is normally 50mm thick rock wool applied to solid block or double-layer pressed steel coloured sheet with 100mm thick fiberglass insulation in the middle. 150mm thick fiberglass insulation is normally adopted for roof insulation.

Mechanical and Electrical: As winter in the northern region is cold, space heating is required. The heat source is municipal heat source or self-built boilers. Logistics warehouse with large storage space will require more heating units. As there are usually a lot of warehouse doors which are often open, the door openings need to be equipped with hot air curtains, the functional rooms in the warehouse will use radiator heating. The rest of the supporting building such as dormitories, canteens, equipment rooms and guard rooms will also use radiator heating.

Southern Region

Structural part: the external roads of logistics projects must meet the loading requirements of heavy load truck, so heavy-duty road design is generally used. Warehouse flooring is generally 200mm thick C30 reinforced concrete slab with double-layer two-way mesh; but as some of the southern region has weak geological foundation, **warehouse floors will use 300mm thick C40 reinforced concrete slab, with double-layer two-way mesh design**. The hydraulic power unit of the loading and unloading platform would use imported equipment, which ensures the reliability of the whole equipment and reduces the maintenance rate, and the loading and unloading platform needs to be linked with the roller shutter door.

Insulation: the external wall generally use double-layer pressed steel coloured sheet with 75mm thick fiberglass insulation in the middle. Roof uses 75mm thick fiberglass insulation.

Electrical and mechanical: the southern region winter weather is mild, the design will generally not consider heating system but focus more on ventilation system. In the rest of the supporting buildings such as dormitories, auxiliary housing and guard room, split air-conditioning system will be used. The warehouse lighting layout in principle will follow the racks layout, and installed in the corridors between storage racks. In terms of the layout of the sprinkler heads, the warehouse area would use early suppression fast response sprinkler heads (ESFR), and select different flow type sprinkler heads according to the storage items and height of racks. When using this type of sprinkler head, if the ceiling distance exceeds the specification requirements, a heat cover needs to be installed, the location of the sprinkler heads should avoid the light belt, exhaust air and smoke vents.

The following are the cost indicators for the same type of single floor steel structure warehouses that RLB has undertaken in the Southern and Northern Regions:

	Southern Region RMB/m^2	Northern Region RMB/m^2
Concrete Works	80-90	90-100
Structural Steel Works	250-300	290-340
Roofing Works	110-130	110-150
External and Internal Wall Works	120-140	120-150
Flooring Works	190-210	210-230
Office Area Works	70-80	70-80
Miscellaneous Works	50-60	40-50
Electrical and Mechanical Works	210-230	250-280
External Works	320-340	400-420
Total:	**1,400-1,580**	**1,580-1,800**

Logistics projects are often designed for the requirements of the end-users, the project cost indicators need to be adjusted appropriately, there are variances in cost indicators between different warehouse types. With regard to use of reference data and analysis of cost indicators you need to have a wealth of experience. **With the practical experience accumulated in logistics projects in recent years, RLB possess relatively unique cost data** and will play a major role in the design stage and cost management of a project.

AVERAGE WHOLESALE PRICES OF SELECTED BUILDING MATERIALS IN SELECTED CITIES OF CHINA (RMB)

(All rates described are at 3rd Quarter 2019 prices)

	Building materials		Beijing	Chengdu	Chongqing	Guangzhou	Hangzhou	Nanjing	Shanghai	Shenyang	Shenzhen	Tianjin	Wuhan	Xian
1	Reinforcement bar HPB235 (1st-class) 10mm	¥/t	4,514	3,726 HPB300 8-10mm	4,140 HPB300	4,000	4,391	4,460 HPB300	4,453 HPB300	3,497 HPB300	4,496 HPB300 (1st class) 10mm	4,417	4,250 HPB300	4,080
2	Reinforcement bar HRB400 (3rd class) 10mm	¥/t	4,189	3,803 HRB400 8-10mm	4,230	3,956	4,209	4,420	4,360	3,723	4,630	4,295	4,318	4,167
3	Reinforcement bar HRB400 (3rd class) 25mm	¥/t	3,838	3,619 HRB400 18-25mm	4,087	3,944	4,077	4,338	4,200	3,510	4,383	4,072	4,063	4,167
4	Reinforced concrete Grade C30 5-25mm aggregates P8 waterproofing (without pumping fee)	¥/m^3	476	583 5-31.5	505 Average of main areas of the city, electric pump	597	576	569	621	337	662	508	520	707
5	Timber Formwork local commonly used materials	¥/m^3	2,000	2,991 1830 × 915 × 15	1,135 Average of main areas of the city, logs	1,348 pine broad	1,780 pine logs Φ 14-16 x 600cm	1,785	1,851	1,697	2,510 1830x915x18 3rd Class blackboard	2,283	2,203	2,052 pine logs
6	Portland cement Grade 42.5(bulk)	¥/t	513	493	515 Average of main areas of the city, bagged	475	542	560	550	335	522	462	467	477
7	Sand Rough/mixed	¥/t	102	123	280 Average of main areas of the city, extra fine sand	183	125 Gross sand	195	172	50	150	86	254	262
8	Hot rolled equal-leg angle steel 45-50×3-6mm	¥/t	3,770	3,853 Q235 L50 × 50 × 5	4,433 Q235 4-8mm	4,069	4,395 Q235B	4,707 Equal-leg angle steel	4,427	3,540	4,821 Angle steel	4,241	4,466	4,423
9	Galvanized steel sheet 1.0mm	¥/t	4,682	6,100 0.5-1.2mm	4,953	4,112	4,946	5,267 Hot galvanized steel sheet Q235B	4,747 Hot rolled steel sheet Q235 δ ≥1.0	4,397 Continuously hot-dip zinc-coated steel sheet 1.00-2.5 Z275 (two-sided)	5,280	4,951	4,795	4,960
10	Seamless steel pipe 108×3.5-4mm	¥/t	4,295	5,900	5,137 108 x 4.5mm	4,859	5,510	5,308	5,545 108 × 3-4.5mm #20	4,483 68-159	5,889 Seamless steel pipe	5,135	4,624 108 × 4.5-5mm	5,057
11	Galvanized welded steel pipe 20mm 26.75x2.75mm	¥/t	5,478	5,332	5,520 Hot dip galvanized steel pipe Q235 / Q195 DN15-20	5,581 Galvanized water, gas transportation pipe	4,672	5,824	5,053 Φ 20 mm	3,800 DN25-DN32	5,890 Hot-galvanized steel pipe	5,635	5,481 20 × 2.75mm	5,367
12	Hot-rolled steel channel Grade a steel #16-18mm	¥/t	3,765	3,963 Q235 #18mm	4,457 Q235 16-22#	4,114	4,317 Q235B	4,727 Steel channel	4,213 Q235 # 16	3,623 5-30#	4,886 Steel channel	4,146	4,381	4,433
13	Float glass 5mm	¥/m^2	23	24 White float glass	27 White float glass	30	37	39	29	30	37	33	33	32
14	Aluminium A00 aluminum ingot	¥/t	14,173											
15	Copper 1# electrolytic copper	¥/t	46,850											
16	Steel fire-rated door (Grade II)	¥/m^2	362	550(#)	520	371 Single-leaf	520	620 Single-leaf	625	550	600(#)	530(#)	420(#)	680
17	Timber fire-rated door (Grade II)	¥/m^2	462	380(#)	320	436 Single-leaf	420	-	357	453(#)	680(#)	425(#)	380(#)	485
18	PHC piles Φ 400A	¥/m	-	160(#)	-	148 Thickness 95mm	141 Thickness 95mm	199	172 Φ 400AB Thickness 95	97(#)	140 Thickness 95mm	134 Φ 400AB Thickness 95	195(#)	238
19	APP Modified Bitumen Water-proofing membrane 3 mm PY	¥/m^2	31	33(#)	24 APP- I -PY-PE-3mm	27	37 4mm	37	27 APP-I-PY-PE	28(#)	37(#) SBS 3mm	25(#)	27	40
20	Cementitious Waterproofing Coatings Type I two-component	¥/kg	10	18(#)	16 JS-I latex	12	8	11	11 JS-I	13(#)	13	14	15(#)	15
21	Interior wall Latex paint Type II	¥/kg	16	15(#)	9 paint	11	17 latex paint	14	16(#)	11	11(#)	13	10	16(#)
22	Advanced Acrylic Exterior Wall Latex paint Type II	¥/kg	25	23(#)	29 import emulsion paint (luminant)	27	21 elastic emulsion paint	16	24(#)	12	25(#)	26	33(#)	24(#)

Notes:

1. The above prices (except items 14, 15 and those marked with "#") are based on either guiding price from websites or periodicals published by local construction cost management office; or market prices published by "China construction material online" ;
2. Items 14 & 15 in the above table are based on final price by end of month published by Shanghai Futures Exchange (www.shfe.com.cn), as a general reference price for all areas;
3. "#" means its price is based on the market prices;
4. "-" means local price is not available;
5. The price selection guideline is based on actual current market prices.

AVERAGE DAILY WAGES OF WORKERS FOR CONSTRUCTION INDUSTRY IN SELECTED CITIES OF CHINA

(All rates described are at 3rd Quarter 2019 prices)

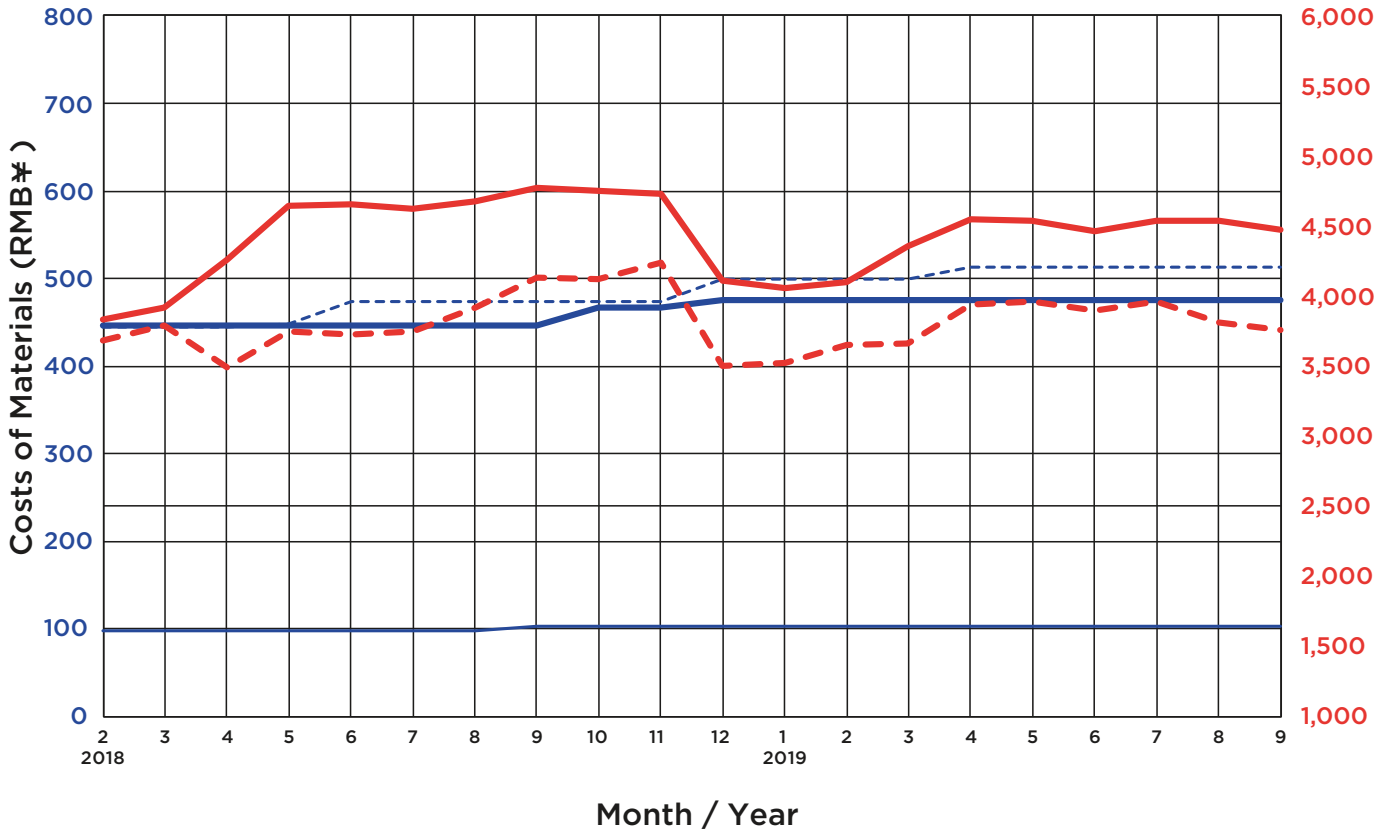
The currency below is RMB

Selected Trades (according to the general public standards)		Beijing	Chengdu	Chongqing	Guangzhou	Hangzhou	Nanjing	Shanghai	Shenyang	Shenzhen	Tianjin	Wuhan	Xian
1	Joiner (construction)	274	262	272	267	279	218	300	247	377 Decoration Joiner	264	242	302
2	Painter	247	193	242	257	252	281	300	218	295	232	180	250
3	Formwork erector	285	175	287	265	270	304	300	247	358	272	215	310
4	Plasterer (normal)	252	225	233	251	244	287	300	255	327	247	184	260
5	Bar Bender	268	253	271	268	255	289	300	255	335	274	197	320
6	Bricklayer (masonry)	262	231	233	257	277	282	300	211	340	264	206	300
7	E&M worker	245	162	232	249	251	283	300	189	304 Average plumber/ electrician	270	184	240
8	Concretor	235	188	238	243	239	273	300	145	317	252	180	245
9	Waterproofer	276	185	227	242	257	279	300	211	281	240	174	280
10	Plasterer (Surface)	331	210	258	268	260	298	320	255	347	320	199	280
11	Scaffolder	283	248	277	265	279	295	350	255	348	288	211	320
12	Welder	268	202	237	239	290	298	320	251	312	310	220	270
13	Rigger	254	174	197	243	252	279	300	145	310	212	196	210
14	Glazier	321	161	218	243	250	273	320	218	307	330	162	307
Average daily wage (1-14)		**272**	**205**	**244**	**254**	**261**	**281**	**308**	**222**	**326**	**270**	**196**	**278**

Notes:

1. Various types of daily wage are based on construction market price, which are updated in real time. The data covers commercial, residential and industrial development project; every rate is weighted daily rates received from 2-4 contractors;
2. Labour costs include: basic wage, allowances, benefits, etc. i.e. all expense payable to workers;
3. Daily rate is based on 8 hours per day, excluding overtime allowance;
4. All trades are based on general labour.

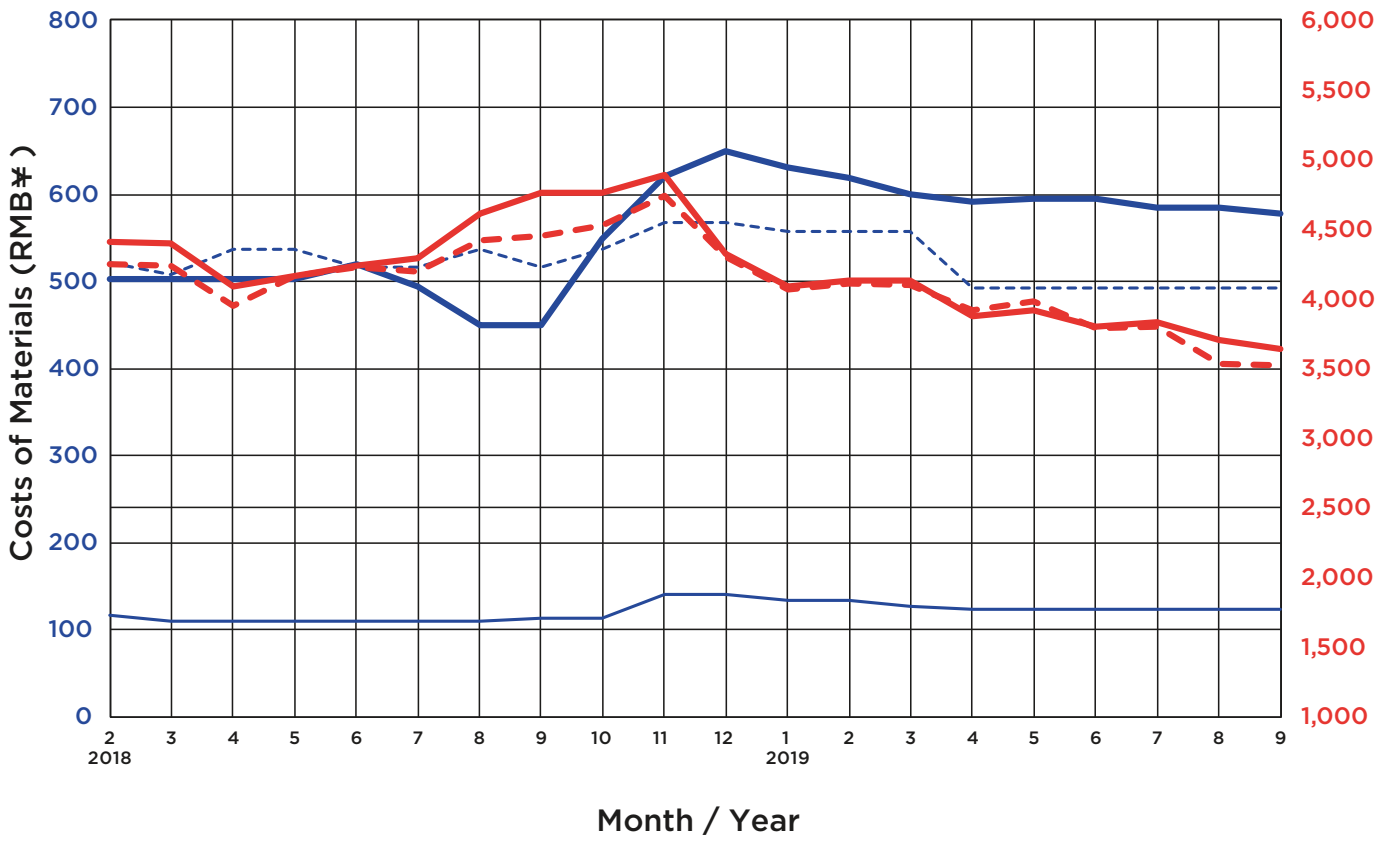
Wholesale Prices of Selected Building Materials in Beijing



Building Materials			Wholesale Prices of Selected Building Materials in Beijing																		
			2018											2019							
			Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Reinforcement bar HPB235 (I) 10mm	¥/t	—	3,829	3,915	4,256	4,638	4,655	4,621	4,672	4,767	4,750	4,728	4,108	4,056	4,099	4,358	4,544	4,535	4,465	4,535	4,535	4,473
Reinforcement bar HRB400 (III) 25mm	¥/t	·····	3,684	3,786	3,487	3,750	3,724	3,750	3,922	4,130	4,116	4,233	3,500	3,517	3,647	3,655	3,938	3,956	3,894	3,956	3,805	3,752
Portland cement Grade 42.5 (bag)	¥/t	·····	444	444	444	448	474	474	474	474	474	474	500	500	500	500	513	513	513	513	513	513
Reinforced concrete Grade C30 5-25 stone P8 waterproofing (without pumping fee)	¥/m³	—	447	447	447	447	447	447	447	447	466	466	476	476	476	476	476	476	476	476	476	476
Sand (rough/mixed)	¥/t	—	97	97	97	97	97	97	97	102	102	102	102	102	102	102	102	102	102	102	102	102

(Source: www.bjzj.net)

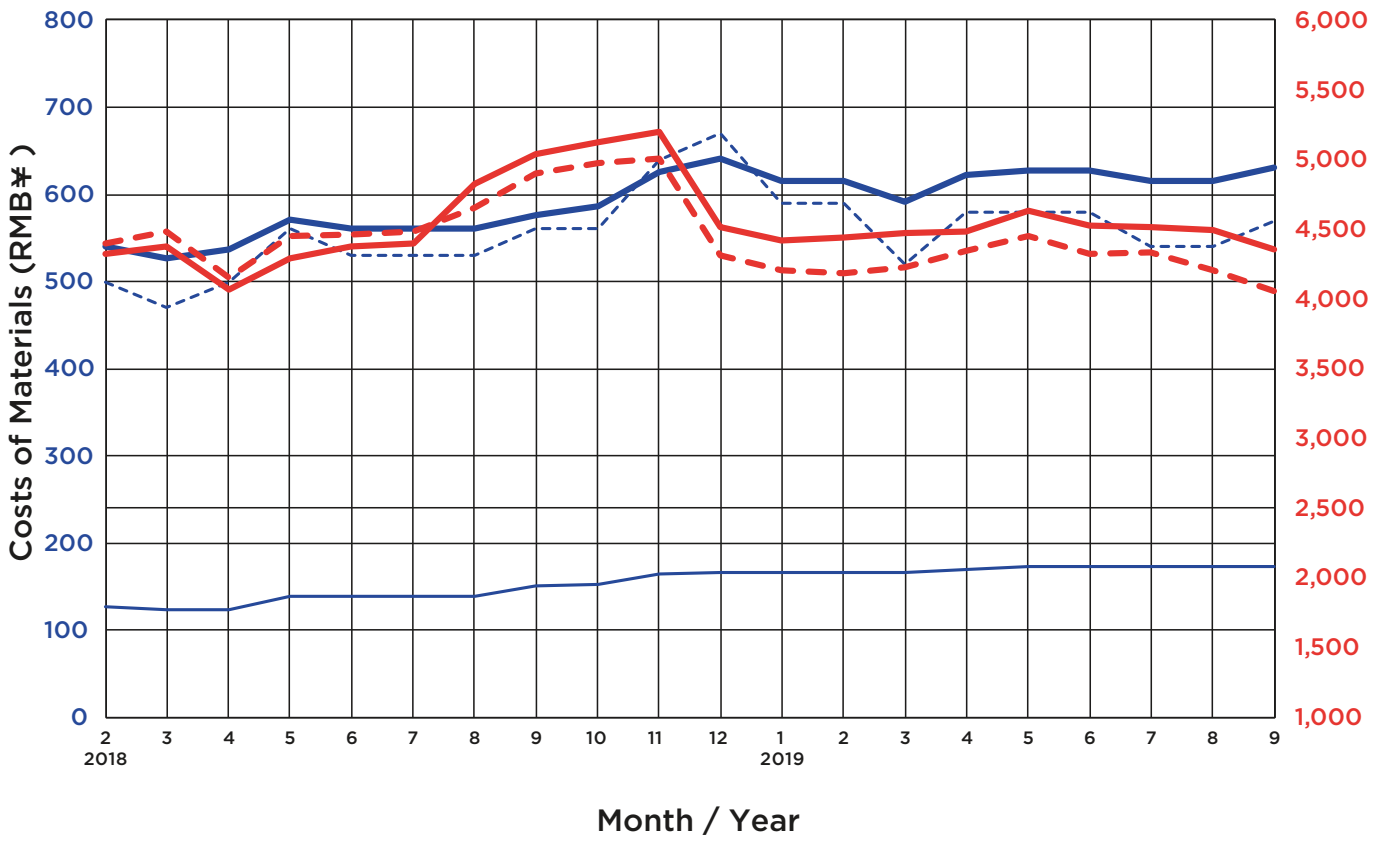
Wholesale Prices of Selected Building Materials in Chengdu



Building Materials			Wholesale Prices of Selected Building Materials in Chengdu																			
			2018											2019								
			Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Reinforcement bar HPB235 (I) 10mm	¥/t	—	4,408	4,396	4,089	4,163	4,241	4,295	4,615	4,762	4,764	4,890	4,320	4,088	4,126	4,128	3,876	3,918	3,797	3,836	3,706	3,637
Reinforcement bar HRB400 (III) 25mm	¥/t	·····	4,249	4,236	3,954	4,164	4,228	4,199	4,415	4,451	4,527	4,740	4,300	4,065	4,107	4,101	3,914	3,983	3,789	3,800	3,535	3,523
Portland cement Grade 42.5 (bag)	¥/t	·····	522	507	537	537	517	517	537	517	537	567	567	557	557	557	493	493	493	493	493	493
Reinforced concrete Grade C30 5-25 stone P8 waterproofing (without pumping fee)	¥/m³	—	502	502	502	502	520	494	450	450	548	620	650	630	618	600	591	595	595	585	585	578
Sand (rough/mixed)	¥/t	—	117	110	110	110	110	110	110	113	113	140	140	133	133	127	123	123	123	123	123	123

(Source: www.sceci.net)

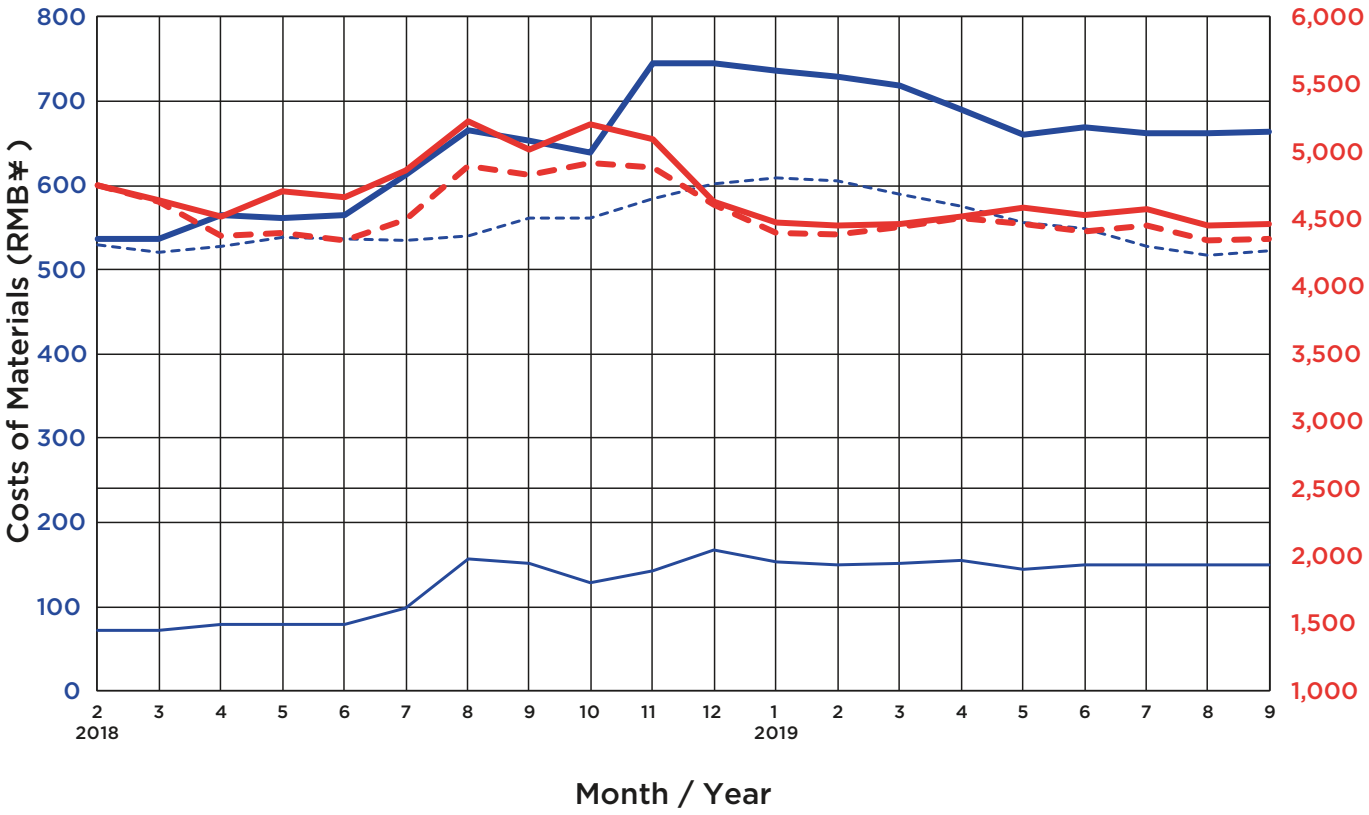
Wholesale Prices of Selected Building Materials in Shanghai



Building Materials			Wholesale Prices of Selected Building Materials in Shanghai																			
			2018											2019								
			Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Reinforcement bar HPB235 (I) 10mm	¥/t	—	4,320	4,380	4,070	4,290	4,380	4,400	4,820	5,040	5,120	5,200	4,520	4,420	4,435	4,475	4,480	4,630	4,530	4,520	4,490	4,350
Reinforcement bar HRB400 (III) 25mm	¥/t	·····	4,400	4,480	4,150	4,450	4,460	4,480	4,650	4,900	4,970	5,010	4,310	4,210	4,185	4,230	4,340	4,450	4,320	4,330	4,210	4,060
Portland cement Grade 42.5 (bag)	¥/t	·····	500	470	500	560	530	530	530	560	560	640	670	590	590	520	580	580	580	540	540	570
Reinforced concrete Grade C30 5-25 stone P8 waterproofing (without pumping fee)	¥/m³	—	541	526	536	571	561	561	561	576	586	626	641	616	616	591	623	628	628	616	616	631
Sand (rough/mixed)	¥/t	—	126	123	123	139	139	139	139	150	152	164	165	165	165	165	170	172	172	172	172	172

(Source: www.shjjw.gov.cn)

Wholesale Prices of Selected Building Materials in Shenzhen



Building Materials			Wholesale Prices of Selected Building Materials in Shenzhen																			
			2018											2019								
			Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
Reinforcement bar HPB235 (I) 10mm	¥/t	—	4,754	4,638	4,517	4,703	4,663	4,861	5,226	5,021	5,202	5,091	4,630	4,475	4,456	4,465	4,521	4,585	4,529	4,577	4,448	4,463
Reinforcement bar HRB400 (III) 25mm	¥/t	·····	4,756	4,628	4,379	4,402	4,342	4,502	4,890	4,828	4,913	4,886	4,607	4,395	4,391	4,439	4,506	4,464	4,406	4,456	4,338	4,354
Portland cement Grade 42.5 (bag)	¥/t	·····	530	521	528	539	537	534	541	561	562	585	602	609	605	589	575	556	549	527	518	522
Reinforced concrete Grade C30 5-25 stone P8 waterproofing (without pumping fee)	¥/m³	—	537	536	565	562	565	612	665	654	639	745	745	737	729	718	691	660	669	662	662	663
Sand (rough/mixed)	¥/t	—	72	71	79	79	79	99	156	151	128	143	168	153	149	152	154	144	150	150	150	150

(Source: www.szcost.cn)

OFFICES IN HONG KONG, MACAU, MAINLAND CHINA AND KOREA

HONG KONG
15th Floor
Goldin Financial Global Centre,
17 Kai Cheung Road, Kowloon
Bay, Hong Kong
Telephone: 852 2823 1823
Facsimile: 852 2861 1283
E-mail: hongkong@hk.rlb.com

MACAU
Alameda Dr. Carlos D'
Assumpção
No. 398 Edificio CNAC 9º
Andar I-J
Macau SAR
Telephone: 853 2875 3088
Facsimile: 853 2875 3308
E-mail: macau@mo.rlb.com

BEIJING
Room 1803-1809, 18th Floor
East Ocean Centre
24A Jian Guo Men Wai Avenue
Chaoyang District
Beijing 100004
China
Telephone: 86 10 6515 5818
Facsimile: 86 10 6515 5819
E-mail: beijing@cn.rlb.com

CHENGDU
Room 2901-2904, 29th Floor
Square One
18 Dongyu Street
Jinjiang District
Chengdu 610016
Sichuan Province
China
Telephone: 86 28 8670 3382
Facsimile: 86 28 8613 6160
E-mail: chengdu@cn.rlb.com

CHONGQING
Room 1-3 & 17-18, 39/F,
IFS Tower T1,
No. 1 Qingyun Road,
Jiangbei District,
Chongqing 400024,
China
Telephone: 86 23 6380 6628
Facsimile: 86 23 6380 6618
E-mail: chongqing@cn.rlb.com

GUANGZHOU
Room 1302-1308
Central Tower
5 Xiancun Road
Guangzhou 510623
Guangdong Province
China
Telephone: 86 20 8732 1801
Facsimile: 86 20 8732 1803
E-mail: guangzhou@cn.rlb.com

GUIYANG
Room E, 12th Floor
Fuzhong International Plaza
126 Xin Hua Road
Guiyang 550002
Guizhou Province
China
Telephone: 86 851 553 3818
Facsimile: 86 851 553 3618
E-mail: guiyang@cn.rlb.com

HAIKOU
Room 1708, 17th Floor
Fortune Centre
38 Da Tong Road
Haikou 570102
Hainan Province
China
Telephone: 86 898 6672 6638
Facsimile: 86 898 6672 1618
E-mail: haikou@cn.rlb.com

HANGZHOU
Room 1603, 16th Floor North
Tower, Modern City Centre, No.
161 Shao Xin Road, Xia Cheng
District
Hangzhou 310014
Zhejiang Province
China
Telephone: 86 571 8539 3028
Facsimile: 86 571 8539 3708
E-mail: hangzhou@cn.rlb.com

NANJING
Room 1201, South Tower
Jinmao Plaza
201 Zhong Yang Road
Nanjing 210009
Jiangsu Province
China
Telephone: 86 25 8678 0300
Facsimile: 86 25 8678 0500
E-mail: nanjing@cn.rlb.com

NANNING
Room 2203, Block B, Resources
Building, No. 136 Minzu Road
Nanning 530000
Guangxi Province
China
Telephone: 86 771 589 6101
E-mail: nanning@cn.rlb.com

SHANGHAI
22td Floor
Greantech tower
436 Hengfeng Road
Jingan District,
Shanghai 200070
China
Telephone: 86 21 6330 1999
Facsimile: 86 21 6330 2012
E-mail: shanghai@cn.rlb.com

SHENYANG
25th Floor
Tower A, President Building
No. 69 Heping North Avenue
Heping District
Shenyang 110003
Liaoning Province
China
Telephone: 86 24 2396 5516
Facsimile: 86 24 2396 5515
E-mail: shenyang@cn.rlb.com

SHENZHEN
Room 4510-4513,
Shun Hing Square Diwang
Comm. Centre
5002 Shennan Road East
Shenzhen 518001
Guangdong Province
China
Telephone: 86 755 8246 0959
Facsimile: 86 755 8246 0638
E-mail: shenzhen@cn.rlb.com

TIANJIN
Room 502, 5th Floor
Tianjin International Building
75 Nanjing Road
Heping District
Tianjin 300050
China
Telephone: 86 22 2339 6632
Facsimile: 86 22 2339 6639
E-mail: tianjin@cn.rlb.com

WUHAN
Room 2301
New World International Trade
Centre
No. 568 Jianshe Avenue
Wuhan 430022
Hubei Province
China
Telephone: 86 27 6885 0986
Facsimile: 86 27 6885 0987
E-mail: wuhan@cn.rlb.com

WUXI
Room 1410-1412, 14th Floor Juna
Plaza,
6 Yonghe Road
Nangchang District
Wuxi 214000
Jiangsu Province
China
Telephone: 86 510 8274 0266
Facsimile: 86 510 8274 0603
E-mail: wuxi@cn.rlb.com

XIAMEN (Project Office)
Room 2216, 22th Floor
The Bank Centre
189 Xiahe Road
Xiamen 361000
Fujian Province
China
Telephone: 86 592 2205 201
Facsimile: 86 592 2915 365
E-mail: xiamen@cn.rlb.com

XIAN
Room 1506, 15th Floor, Tower F
Chang'an Metropolis Center
88 Nanguan Zheng Street,
Beilin District,
Xian 710068,
Shanxi Province
China
Telephone: 86 29 8833 7433
Facsimile: 86 29 8833 7438
E-mail: xian@cn.rlb.com

ZHUHAI
Room 1401-1402, 14th Floor
Taifook International Finance
Building
No. 1199 Jiu Zhuo Road East,
Jida
Zhuhai 519015,
Guangdong Province
China
Telephone: 86 756 388 9010
Facsimile: 86 756 388 9169
E-mail: zhuhai@cn.rlb.com

SEOUL
Yeoksam-dong, Yeji Building 3rd
Floor, 513, Non hyeon-Ro
Gangnam-Gu
Seoul 135-880
Korea
Telephone: 82 2 582 2834
Facsimile: 82 2 563 5752
E-mail: seoul@kr.rlb.com

JEJU (Project Office)
1084, Seogwang-ri,
Andeok-myeon, Seogwipo-si
Jeju-do, Korea
Telephone: 82 64 792 8991
Facsimile: 82 64 792 8995

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