

December 2018

CHINA REPORT

CONSTRUCTION PROCUREMENT AND
COST INTELLIGENCE

RLB
利比

Rider
Levett
Bucknall

OFFICES AROUND THE WORLD

AFRICA

Botswana

Gaborone

Mauritius

Saint Pierre

Mozambique

Maputo

South Africa

Cape Town

Durban

Johannesburg

Pretoria

Stellenbosch

ASIA

North Asia

Beijing

Chengdu

Chongqing

Dalian

Guangzhou

Guiyang

Haikou

Hangzhou

Hong Kong

Jeju

Macau

Nanjing

Nanning

Seoul

Shanghai

Shenyang

Shenzhen

Tianjin

Wuhan

Wuxi

Xiamen

Xian

Zhuhai

South Asia

Bacolod

Bohol

Cagayan de Oro

Cebu

Davao

Ho Chi Minh City

Iloilo

Jakarta

Kuala Lumpur

Laguna

Metro Manila

Singapore

Yangon

AMERICAS

Caribbean

Barbados

Cayman Islands

St. Lucia

North America

Austin

Boston

Calgary

Chicago

Denver

Hilo

Honolulu

Las Vegas

Los Angeles

Maui

New York

Orlando

Phoenix

Portland

San Francisco

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Seattle

Toronto

Tucson

Waikoloa

Washington DC

EUROPE

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Birmingham

Bristol

Cumbria

Leeds

Liverpool

London

Manchester

Sheffield

Thames Valley

Warrington/Birchwood

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Austria

Belgium

Bulgaria

Croatia

Czech Republic

Denmark

Finland

France

Germany

Greece

Hungary

Ireland

Italy

Luxembourg

Montenegro

Netherlands

Norway

Poland

Portugal

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

THE LATEST POLICY

Promoting full services of architects

China's design institutes are generally in large-scale, and the developers usually employ them to design the architectural, structural, mechanical and electrical works of a project. However, in regards to specialty design works, such as façade, interior decoration, landscape, floodlighting and etc., these specialty design works are all to be undertaken by other specialist units employed by the developer separately, while the overall coordination of specialty design works are to be taken care by the design institutes. After numerous real cases over the years, RLB has discovered the following issues:

1. In order to have an earlier commencement of a project, the developers usually requires the design institutes to complete the drawings that will meet the basic requirements of the submission for approval in a very short period of time, which leads to a rough and inadequate depth of design drawings, and the lack of integration with other specialty designs works reflecting on the said design drawings, which causing the incontrollable quality to the design works;
2. Due to large number of unsolved drawings problems that were carried to and to be resolved at construction stage, project teams have heavy workload for enormous number of design modifications, changes, contract disputes, on-site coordination and etc. at construction stage which lead to incontrollable cost control;
3. The design institutes do not provide technical specifications, as a result, the developers are unable to make accurate estimates and to implement lump-sum contract arrangement Without any choice, the developers have to divide the contract into many small contracts to adopt the options of materials supply by the developer, or materials chosen and confirmed by the developer and supplied by the contractor, which further leads to incontrollable of design and cost control;
4. The design institutes are not participating in the tendering stage which includes tender analysis, tender clarification inquiry and tender evaluation; and furthermore, they are not responsible for the examination and approval of materials and equipment on site. Therefore, the design institutes are incapable to fully control and assure of the quality overall in all aspects related to a project, etc.

In order to avoid the above mentioned issues and ensure that the design, quality and cost of a project will be effectively under control, the developer responsibilities system is commonly adopted in China's projects, i.e. the developer is both the project manager and contract administrator. Thus, the developers have to set up internal departments for design, construction, tendering and procurement, cost etc., and these departments will coordinate and manage the design institutes, contractors, tendering agents, cost consultants, etc.

With the intention of reducing staffing in the government real estate property companies, improving management efficiency, and to ensure that the building quality will be guaranteed, the Chinese government is now planning to incorporate full services of architects in civilian construction projects, and ultimately implementing the said requirements. Overall planning to incorporate and promote the said requirements includes improving the management system, accelerating the training of qualified team members, strengthening the companies organization structure, actively carrying out the international experience exchange, strengthening the organization leadership, intensifying the demonstration of leading role model, promoting integrity, adopting various forms of incentives, and playing an active role in regulating the construction industry.

Since Chinese developers generally like to engage international architects in designing for their projects, it is realistic to believe that with the full implementation of full services of architects, international architect firms could also share the benefits from this big market.



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 sell to 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 manufacture's quotation and the purchase order.

2. Import expenses

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

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 fee; or

(2) International freight (sea, land, air) = Freight quantity × Freight unit price,

Freight rate and freight unit price shall be calculated based on regulation from related 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 under property insurance. The formula is

freight premium = (Free on board (FOB) + Overseas freight) / (1 - premium rate) × premium rate.

The premium rate shall refer to the premium defined by the I/E 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. Sales tax rate shall be calculated according to related regulation.

(5) Import VAT = Composite value × VAT rate; Composite value =

Tariff dutiable value + Tariff + Sales tax. Sales tax rate shall be calculated according to related regulation.

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 related authorities.

3. Expected profit

The profit that the importer expects to make.

Please note the list above shall not be deemed as exclusive. Please consult with local authorities and I/E company for detailed regulations. Considering the fees may vary from region to region, the cost calculation shall be determined after consultation with local authorities.

IMPORT PRICE COMPONENTS FOR CHINESE BUILDING MATERIALS / EQUIPMENT

Sample price breakdown

This case is the imported product - mid-high speed elevators

The import price listed in the following table refers to the price of the product imported from Japan to Shanghai, China

(Price as at third quarter of 2018)

Item		Price RMB/No.	Percentage %	Notes	
1.	Import cost	1,000,000.00	68.00%	Imported elevators are usually mid-high speed elevators. This price is for reference only. Actual price will vary greatly due to different load, speed, stops.(CIF)	
2.	Import expenses	278,800.00	18.96%		
	2.1 International freight	-	-	included in CIF cost	
	2.2 Freight premium	-	-	included in CIF cost	
	2.3	I/E expense	262,800.00	17.87%	
		2.3.1 Bank charges	10,000.00	0.68%	
		2.3.2 I/E Trade Commission	-	-	
		2.3.3 Tariff	80,000.00	5.44%	
		2.3.4 Sales tax	-	-	N/A
2.3.5 Import VAT	172,800.00	11.75%			
2.4 Miscellaneous freight charges	16,000.00	1.09%	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(15% of total of items 1&2 above)	191,820.00	13.04%		
Import price (from 1 to 3)		1,470,620.00	100%		

THE WORLD'S GIGANTIC INDOOR SKI RESORT – AN EXCITING NEW PROJECT "WINTASTAR"

In Shanghai there is no snow during winter, but in the near future, if you want to ski in Shanghai, you could do it without leaving Shanghai because the world's gigantic indoor ski resort "Wintastar" is about to be opened in Shanghai. "Wintastar" is an indoor ski theme park, and it consists of an indoor ski park, an ice skating rink, a waterpark and four major theme hotels with a total floor area of 227,000 square meters. The project was officially launched in August 30, 2018 with the goal of opening before the Winter Olympics in Beijing in 2022.

RLB has accumulated plentiful of experiences in projects such as Shanghai Disneyland Resort, Changsha Ice World, etc., and with its absolute predominance in costing field; RLB has successfully won the bid for this super-large entertainment and leisure project in providing the entire process of cost consultation and contract management services.

innovative design, the one and only experience

- The indoor ski park has adopted the Mount Alps as the theme, covering an area of 90,000 square meters. The vertical space height of the ski park is equivalent to three football fields which is nearly 60 meters; it is also equivalent to the height of 20 multi-storey buildings. It offers more than 25 ski events and three different gradients of ski slopes (including Olympic standard slopes for training purposes) are expected to make the project the largest indoor ski resort in the world.



- The waterpark has adopted the Viking in Northern Europe as the theme, and an unprecedented water course will be built with its complicated design of zigzag loops and up-side down channel. The 28,000 square meter waterpark is occupying two floors, providing indoor and outdoor double great feast sensory perception effect. The park will also feature a beach club, a borderless swimming pool and a wide-open large Viking ship.



- Four branded theme hotels with different styles, providing more than 1,000 rooms. Tourists will enjoy the unique and fantastic snowing and icy experience as well as various exotic SPA, and entering the ski resort directly from the hotel.



There was a small study case when we participated in costing of the project structure design: indoor ski resort and waterpark were large space and large span of structures; in order to give visitors a better vision and skiing experience, the designers required that the number of indoor vertical support columns to be as lesser quantities as possible, and the reduction of columns will greatly increase the steel consumption of space grid structures, and cost will also increase significantly. After many rounds of research and detailed evaluation to the design, structural design and our costing; the final estimate cost was on an average it will increase by more than 10 million yuan for every reduction of a column. We served the owner by providing strong technical support for them to choose from the different schemes.

This idea is totally new in China and no benchmarking project is available. Previously, RLB has invested a lot of resources in collating, comparing and analysing all kinds of data, and cooperated closely with design consultants to actively provide economic comparison data for different schemes. RLB has worked with the owner to analyse the technical and economic characteristics of different schemes, and the best value for money solution.

As an international global cost consultant, RLB is very honoured to participate in such a challenging indoor park project and work together with international project teams.

Technical Proposal on BIM

Executive Summary

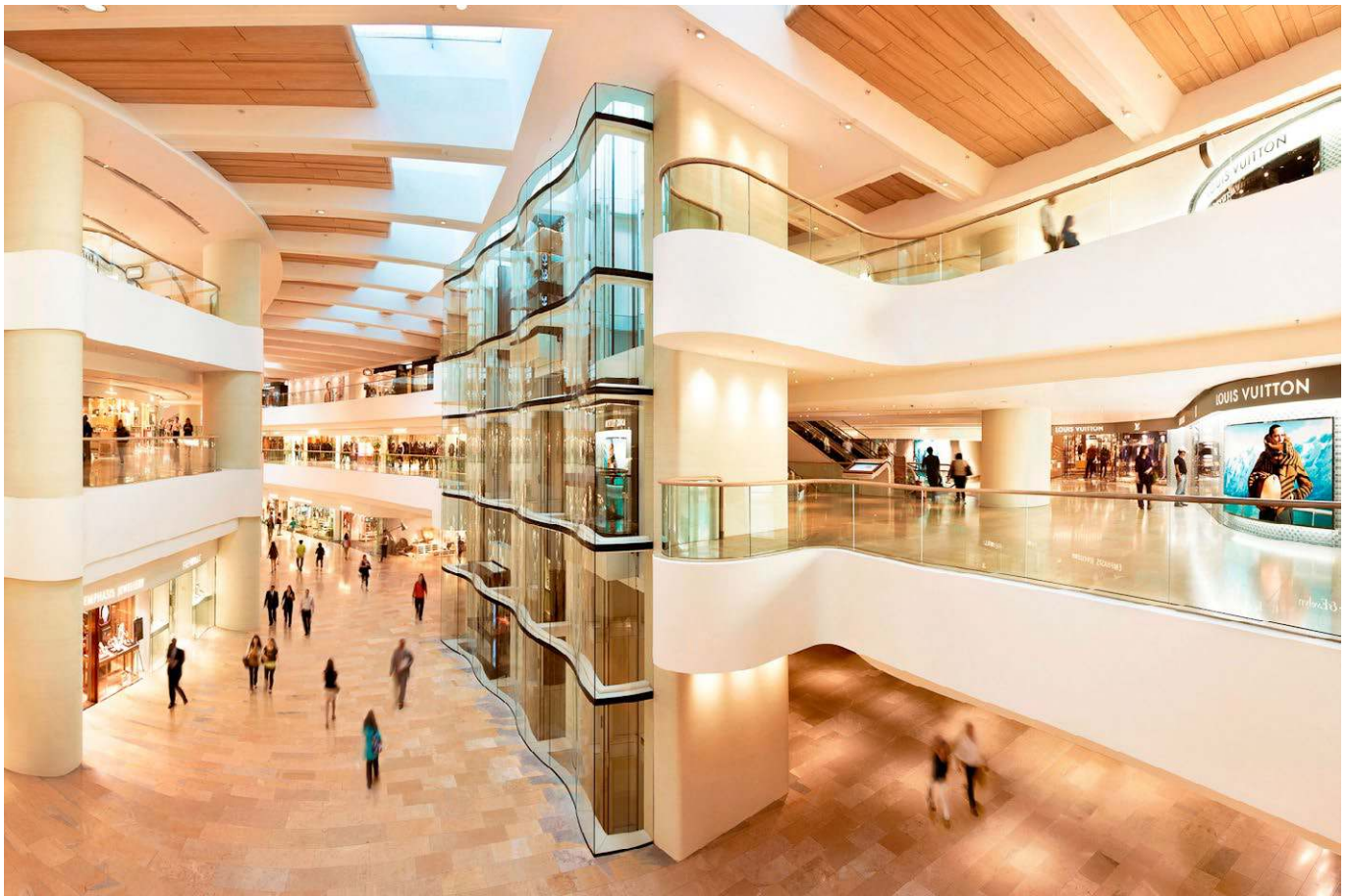
Building Information Modelling (BIM) provides a good platform to achieve knowledge based and integrated approach for any building design, procurement, construction and facility management if the BIM information is properly managed and implemented.

We see ourselves as one of the leading Quantity Surveying (QS) firms to take advantages of BIM capable of integration with the project team under this collaborative platform.

We strive for continuous improvement to provide the best service and know that, in this dynamic industry, the following objectives must be achieved:

- **Emphasis on long-term client relationship**
- **Commercial approach to delivering solutions**
- **Services tailored to our individual client's need**
- **Innovative procurement strategies to be identified and implemented**
- **Management of total project cost and value**
- **Wide diversity of professionals**
- **Motivation through innovation**

In order to achieve the above requirements, we have an in-house team of QS professional and BIM discipline leaders to provide new QS consultancy services in BIM.



Collaborative Approach

Collaboration is more than a specialist service we offer. It flows through our approach to everything we do. We are experts in team building, maximizing life-cycle value, benchmarking performance, developing best practice and generating continuous improvement in the QS consultancy services.

To carry out part of the QS services in BIM environment, it would require full collaboration and support from project team. We have developed comprehensive 5D techniques and innovative workflows that allow us to work with the other consultants to gain the maximum benefit for each stage of model development.

We will coordinate with each member of the project team to discuss any assumptions made regarding composite items, in order to streamline workflows with the project team speeding up the estimation and measurement processes. This enables us to produce more accurate cost predictions to check the accuracy of data in the model and allowing us to concentrate on value-added services.

BIM Software

We have a considerably large amount of knowledge and experiences in using BIM software. Our BIM solution includes Glodon®, Luban®, TH Sware®, Revit®, 3dMax®, Rhino®, Navisworks®, CostX®, Glodon®, isBIM®, Vico Office®, and etc. It allows the clients, designers, project managers, engineers, surveyors to collaborate and explore the opportunities of reducing contractual risks, delivering accurate cost estimates to achieve better project outcomes.

BIM Standard

We will adopt different BIM standards depending on the project or region, such as American Institute of Architects Contract Document (AIA G202 - 2013) and Building Information Modeling and Digital Data Exhibit (AIA E203 - 2013). The concepts and principles described in the above can be cited as the main reference for our BIM application.

Besides, we also recommend the project to adopt the following methodologies and definitions during the implementation, which include:

- **Establishment of BIM Project Execution Plan (BIM BXP)**
- **Modelling Methodologies and Standards**
- **Definition of Level of Development (LOD)**
- **Data organization and structure**

BIM Execution Plan

A BIM Execution Plan (BXP) outlines the details of best practices and instructions for the project team to adopt and maintain throughout the different phases of project. The BIM BXP is thus recommended to be developed at the concept stage of the design.

Before the BIM model is developed on the basis of BIM BXP, the design consultants should establish a standard approach of modelling in conjunction with the QS consultant.

We also encourage a greater collaboration amongst the clients, consultants and contractors and make appropriate recommendations for BIM processes, modelling and standards.

Family Naming Convention

The naming convention used within the model has a direct impact on the effectiveness and usability of the output. We will work with the design team to review family names and to discuss the potential to add shared parameters to the objects

Technical Proposal on BIM

for the following:

- **Standard Method of Measurement for BQ descriptions**
- **QS special codes (e.g. QSID)**
- **National code standards (e.g. GB 50500-2013)**
- **Other proprietary codes (e.g. UniFormat II - Elemental Classification for Building Specifications, Cost Estimating and Cost Analysis, MasterFormat, OmniClass, etc.)**

We will request the design consultants to consider above coding systems to the object parameters to assist us in the mapping of the object quantities into bills of quantities, cost estimates or any other work breakdown structures as recommended by the client.

BIM Coordination Meeting

We will participate in the BIM coordination meetings to provide the design consultants with the required data by the QS to enable the information in the 3D model to be transmitted to the cost centres, thus allowing the quantities to be linked with our cost reports.

Besides, we will liaise and coordinate with the design consultants to agree the information required for deliverables, thus reducing unnecessary duplication works. This will enable us to accurately capture the required quantities within the object attributes and reuse the data within the model for calculation of other items not necessarily included as a separate object at that stage of design development.

BIM Model Checking

Before the preparation of tender documents, the model should be checked and coordinated by their own team members. Each design discipline should carefully examine the model to ensure:

- **Both QS and BIM Manager have agreed the formats and requirements**
- **Information in model is checked against LOD requirements**
- **The model is created in BIM and any 2D information is created from the BIM model, ensuring achievement of full coordination and a single source of data**
- **Data is located correctly in a single location with no conflict or discrepancy**
- **Specifications and non-graphical information are agreed and verified**

Project Deliverable

By utilizing different BIM software for extraction of quantities from the model, the results can be then transferred to our 5D BIM software for producing the cost estimates and the bills of quantities. The BIM data or information can be used for other purposes such as comparative analysis of building services systems, value engineering, variation management, cash-flow analysis, payment assessment, life-cycle costing (LCC), and etc.

4D BIM (Construction Sequence)

We will establish good communication and collaboration approaches with the contractor to adopt 4D BIM in the process to analyze and illustrate the relationship of construction sequence and programme for reflecting the actual site conditions.

The project team will be required to supervise the contractor for providing 4D BIM prototype to verify the coordination of programme and sequence of construction activities throughout the construction stage.

The following consultancy services will be provided by us:

- (1) Prepare and update 5D cash flow graphs of planned and actual expenditure to reflect on-site performance**
- (2) Advise on the validity of cost and time effect of variations and claims associated with the construction works and make recommendations on the settlement of such implications to the client**

5D BIM (Cost Estimation)

The majority of BIM models are not designed for measurement purposes. It is common that these models lack of important information required for preparation of cost estimates and bills of quantities.

Our 5D BIM methodology will provide a faster and more accurate approach to analyze data which ultimately delivers better cost advices for the clients.

There are many ways that we may improve the costing and measurement from the BIM models. Some of the recommendations in response to these aspects include:

- **Improved modelling techniques in accordance with Standard Method of Measurement (SMM)**
- **Items within the BIM model to be classified and coded with standard elements and cost information**
- **Provision of additional information and commentary on each BIM object, for example, notes regarding specification information not contained and building services classification within object**
- **Provision of frequent up-to-date models to analyze different design options or construction methods**

6D BIM (Asset Information Management or Facility Management)

BIM can be used to deliver the process improvement by defining Asset Information Management (A.I.M.) or Facility Management (F.M.) related maintenance information or data at the commencement of project. We will assist in the selection of Asset Information Requirements (A.I.R.) that will update the data and provide information that relates to the assets at a suitable level to allow future decisions and budgets to be made.

In order to meet those A.I.M. or F.M. requirements, the 6D model is required to incorporate the additional information on building components, such as location (space/room names), life expectancy, life cycle cost, operation and maintenance data, installation or fixing date, maintenance period, product catalogue or specifications, manufacturer's name, equipment's serial number, O&M manual, and etc.



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

(All rates described are at 3rd Quarter 2018)

Building materials		Beijing	Chengdu	Chongqing	Guangzhou	Hangzhou	Nanjing	Shanghai	Shenyang	Shenzhen	Tianjin	Wuhan	Xian	
1	Reinforcement bar HPB235 (1st-class) 10mm	¥/t	4,687	4,557 HPB300 8-10mm	4,600 HPB300 (1st class) 10mm	4,256	4,838	4,704 HPB300	4,753 HPB300	3,817 HPB300	5,036 HPB300 (1st class) 10mm	4,517	4,607 HPB300	4,523
2	Reinforcement bar HRB400 (3rd class) 10mm	¥/t	4,227	4,702 HRB400E 8-10mm	4,733	4,330	4,788	4,663	4,837	3,907	4,973	4,337	4,760	4,577
3	Reinforcement bar HRB400 (3rd class) 25mm	¥/t	3,934	4,355	4,583	4,247	4,605	4,581	4,677	3,783	4,740	4,279	4,505	4,710
4	Reinforced concrete Grade C30 5-25mm aggregates P8 waterproofing (without pumping fee)	¥/m ³	447	465	442 Average of main areas of the city, electric pump	558	546	508	566	365	644	465	448	545
5	Timber Formwork local commonly used materials	¥/m ³	2,000	2,876 1830×915×15	1,252 Average of main areas of the city, logs	1,330 pine broad	1,750 pine logs Φ 14-16×600cm	1,658	1,851	1,660	2,455 1830×915×18 3rd Class blackboard	2,275	2,203	2,018 pine logs
6	Portland cement Grade 42.5(bulk)	¥/t	474	524	503 Average of main areas of the city, bagged	472	545	552	540	359	545	442	492	427
7	Sand Rough/mixed	¥/t	99	111	127 Average of main areas of the city, extra fine sand	196	102 Gross sand	155	143	50	135	83	177	203
8	Hot rolled equal-leg angle steel 45-50×3-6mm	¥/t	3,853	4,627 Q235 L50×50×5	4,737 Q235 4-8mm	4,321	4,540 3#-4#	4,663	4,520	3,693	5,147	4,307	4,568	4,538
9	Galvanized steel sheet 1.0mm	¥/t	4,724	7,254 0.5-1.2mm	5,230	4,791	5,673	5,610	5,043 Hot rolled steel sheet Q235δ≥1.0	4,213 Cool rolled steel sheet 0.6-1.6	5,874	5,136	5,200	5,430
10	Seamless steel pipe 108×3.5-4mm	¥/t	4,629	7,234	5,807 108 x 4.5mm	5,063	5,797	5,759	5,886 108×3-4.5mm #20	4,807 68-159	6,485	5,418	5,134 108 × 4.5-5mm	6,202
11	Galvanized welded steel pipe 20mm 26.75×2.75mm	¥/t	5,379	6,460	5,990 Hot dip galvanized steel pipe Q235/Q195 DN15-20	5,883 Galvanized water, gas transportation pipe	5,031	6,144	5,349 Φ20 mm	3,870 DN25-DN32	6,575	5,797	5,889	5,913
12	Hot-rolled steel channel Grade a steel #16-18mm	¥/t	3,888	4,697 Q235 #18mm	4,803 Channel steel Q235 16-22#	4,388	4,591 8#-10#	4,893	4,487 Q235 #16	3,743 5-30#	5,146	4,072	4,670	4,693
13	Float plate glass 5mm	¥/m ²	23	28 White float glass	27 White float glass	31	38	40	30	30	38	33	33	30
14	Aluminum A00 aluminum ingot	¥/t	14,260											
15	Copper 1# electrolytic copper	¥/t	48,580											
16	Steel fire rate door (Grade II)	¥/m ²	362	444(#)	520	373 Single-leaf	520	680 Single-leaf	704(#)	534	600(#)	530(#)	583(#)	720
17	Timber fire rated door (Grade II)	¥/m ²	462	318(#)	320	433 Single-leaf	420	-	357	453(#)	680(#)	425(#)	416(#)	560
18	PHC piles Φ 400A	¥/m	-	132(#)	-	131 Thickness 95mm	157 Thickness 95mm	185	172(#) Thickness 95mm	97(#)	134 Thickness 95mm	122 Thickness 95mm	320(#)	162
19	APP Modified Bitumen Water- proofing membrane 3 mm PY	¥/m ²	34	43	27	27	40 4mm	37	37(#)	28(#)	37(#) SBS 3mm	30(#)	27	42 Type I
20	JS Cementious Waterproofing Coatings Type I two-component	¥/kg	10	21	17 latex	12	9	11	15(#)	13(#)	14	14	21(#)	17
21	Interior wall Latex paint Type II	¥/kg	16	15(#)	9	11	17 latex paint	18 Interior wall paint	16(#)	11	11(#)	13	10	28
22	Advanced Acrylic Exterior Wall Latex paint Type II	¥/kg	25	23(#)	30 import emulsion paint (luminant)	27	21 elastic emulsion paint	24 exterior Wall paint	24(#)	12	25(#)	26	23(#)	20

Notes:

- 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" ;
- 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;

- "#" means its price is based on the market prices;
- "-" means local price is not available;
- 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 2018)

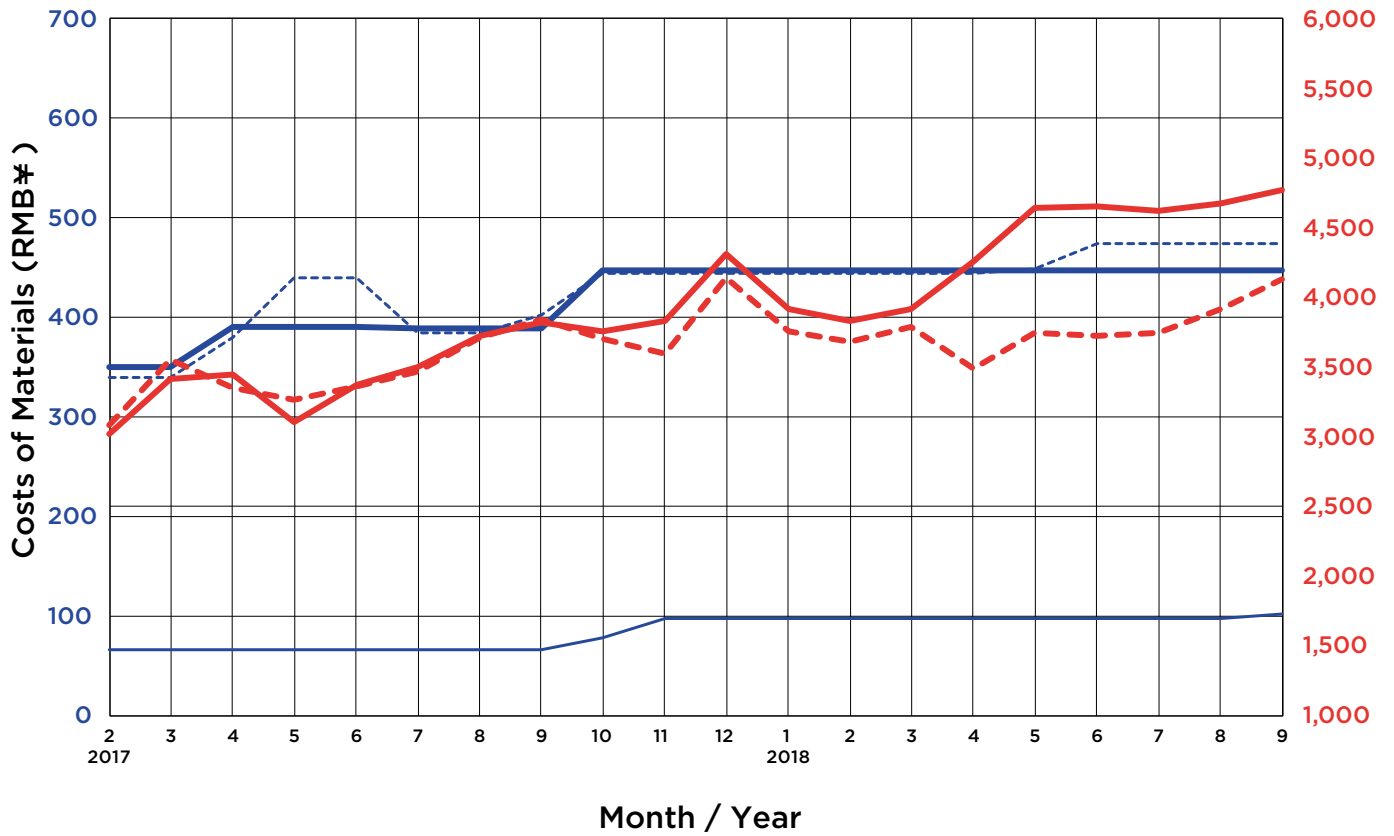
The currency below is RMB

Selected Occupations (according to the general public standards)		Beijing	Chengdu	Chongqing	Guangzhou	Hangzhou	Nanjing	Shanghai	Shenyang	Shenzhen	Tianjin	Wuhan	Xian
1	Joiner (construction)	260	248	270	199	230	222	300	248	366 Decoration Joiner	203	214	285
2	Painter	253	183	240	192	208	162	300	197	270	183	155	224
3	Formwork erector	267	248	285	206	223	220	300	248	334	188	193	285
4	Plasterer (normal)	250	213	233	192	201	208	300	256	277	183	169	224
5	Bar Bender	266	239	269	203	210	211	300	256	285	178	186	275
6	Bricklayer (masonry)	256	219	233	192	228	204	300	212	283	180	185	234
7	E&M worker	243	155	230	184	207	212	300	190	274	175	168	224
8	Concretor	234	177	236	177	197	198	300	135	291	164	166	199
9	Waterproofer	255	175	225	174	212	199	280	212	260	170	165	219
10	Plaster (Surface)	315	200	258	199	214	212	320	256	313	220	190	224
11	Scaffolder	276	236	275	203	230	211	340	256	332	184	193	306
12	Welder	270	191	235	192	239	216	320	252	295	175	199	239
13	Rigger	262	165	195	184	208	204	300	135	265 mechanician	173	178	276
14	Glazier	337	154	216	181	206	200	300	219	264	119	153	192
Average daily wage (1-14)		267	200	243	191	215	206	304	219	294	178	180	243

Notes:

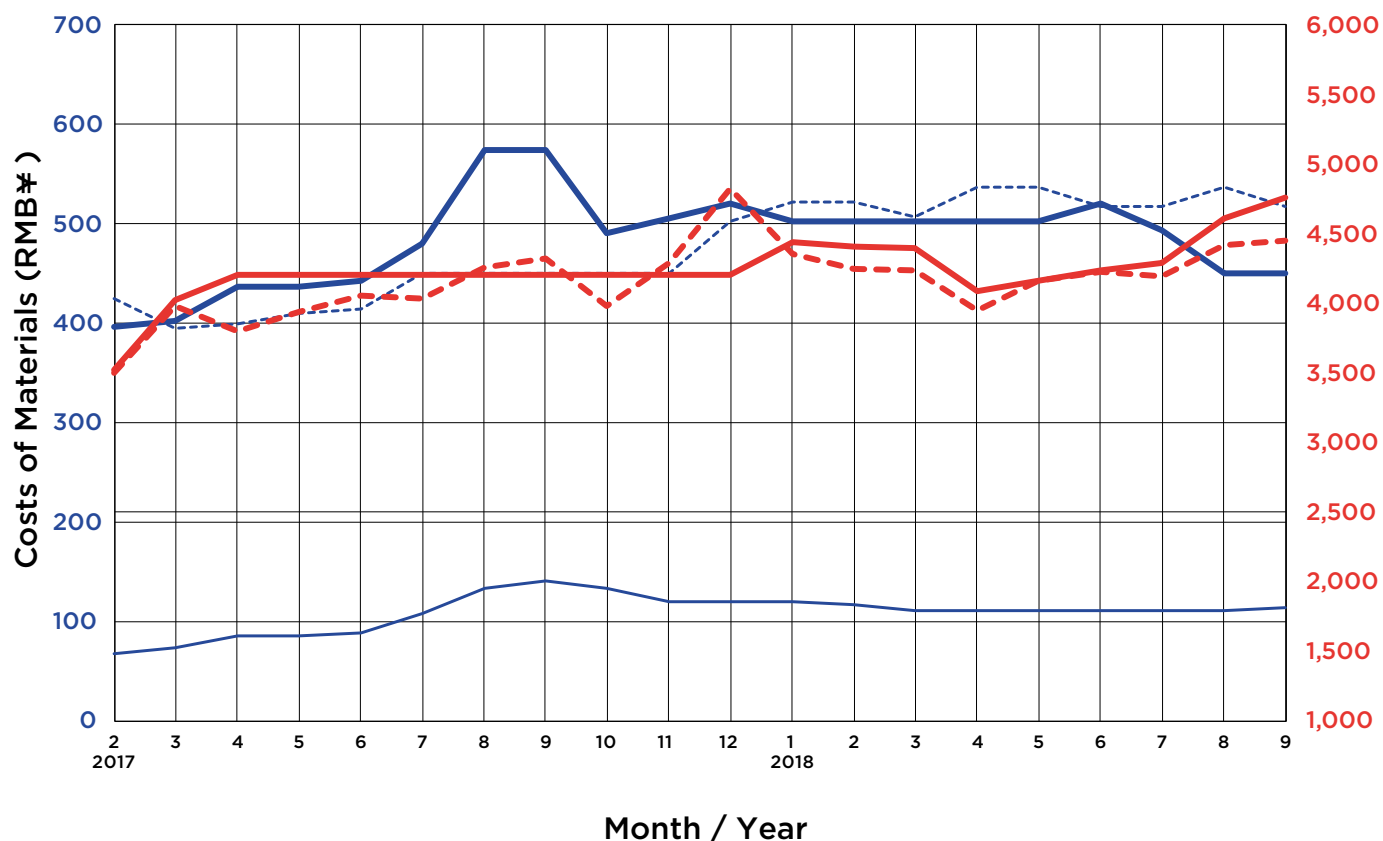
1. Various types of daily wage are based on construction market price, which are updated in real time. The data covers commercial, residential and industrial development project; every rate is weighted daily rates received from 2-4 construction companies;
2. Labour costs include: basic wage, allowances, 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



(Source: www.bjzj.net)

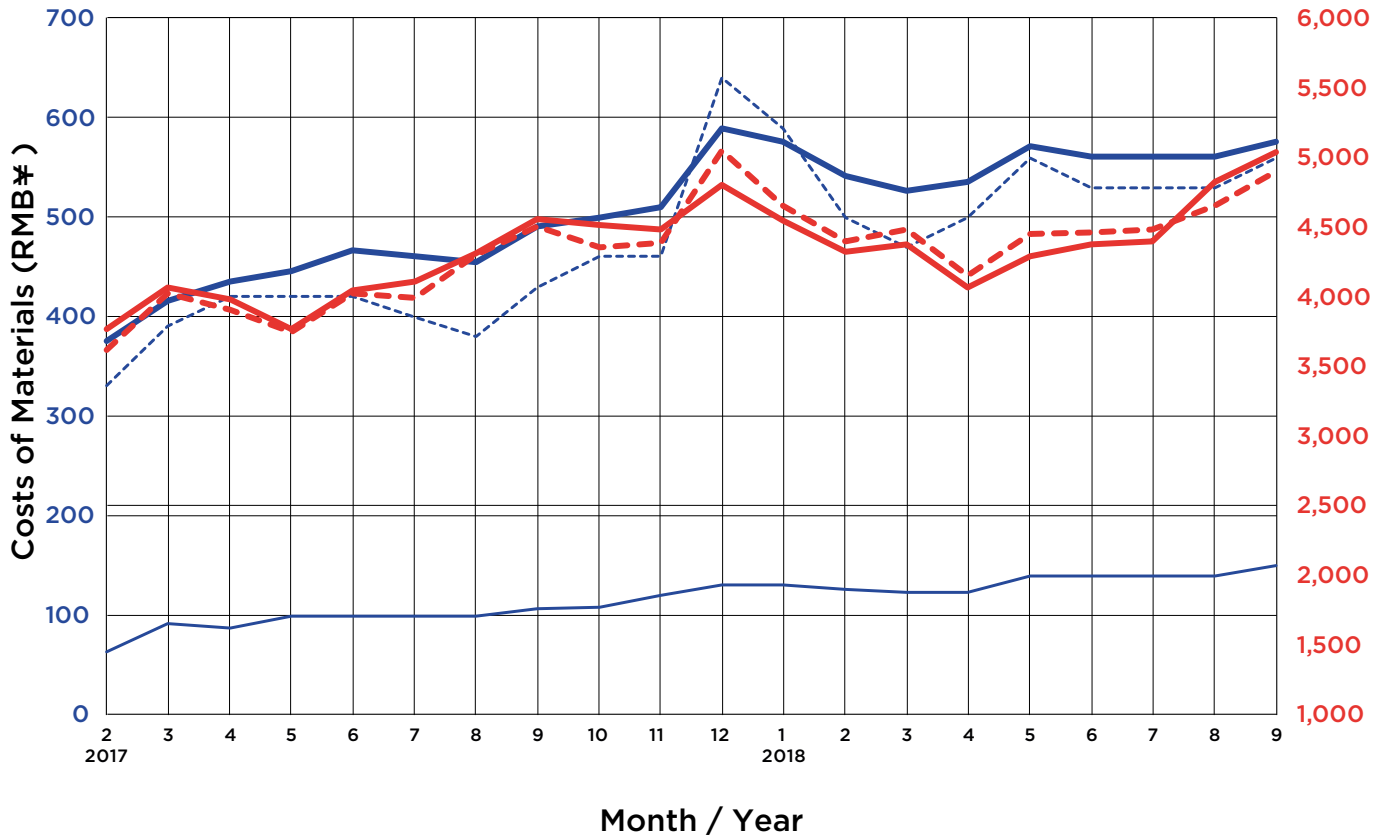
Wholesale Prices of Selected Building Materials in Chengdu



Building Materials			Wholesale Prices of Selected Building Materials in Chengdu																			
			2017												2018							
			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	—	3,519	4,024	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,200	4,439	4,408	4,396	4,089	4,163	4,241	4,295	4,615	4,762
Reinforcement bar HRB400 (III) 25mm	¥/t	⋯	3,505	3,977	3,797	3,940	4,053	4,030	4,260	4,320	3,977	4,295	4,827	4,357	4,249	4,236	3,954	4,164	4,228	4,199	4,415	4,451
Portland cement Grade 42.5 (bag)	¥/t	⋯	425	395	400	410	415	450	450	450	450	450	502	522	522	507	537	537	517	517	537	517
Reinforced concrete Grade C30 5-25 stone P8 waterproofing (without pumping fee)	¥/m ³	—	397	402	437	437	443	480	575	575	490	505	520	502	502	502	502	502	520	494	450	450
Sand (rough/mixed)	¥/t	—	67	74	85	85	88	107	133	140	133	120	120	120	117	110	110	110	110	110	110	113

(Source: www.sceci.net)

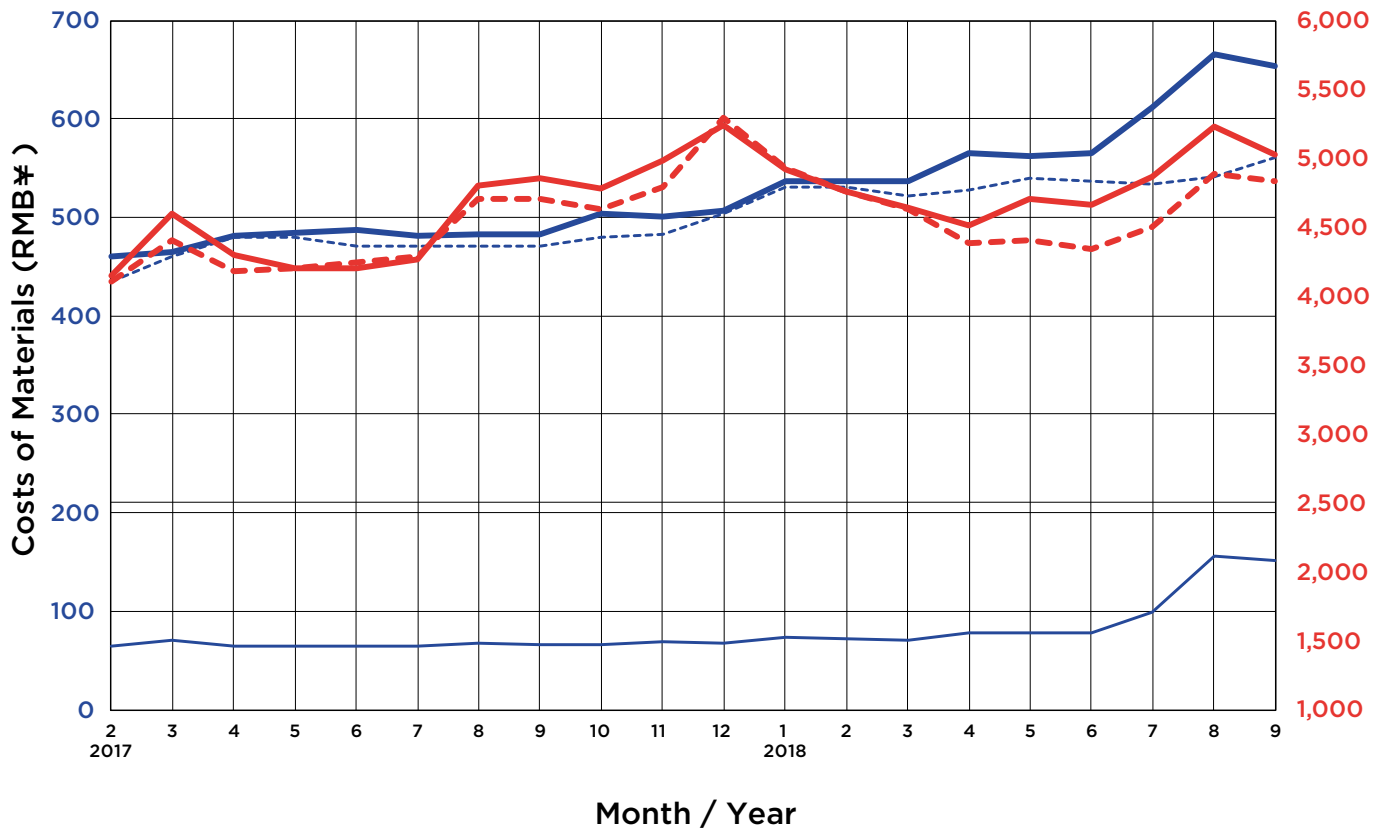
Wholesale Prices of Selected Building Materials in Shanghai



Building Materials		Wholesale Prices of Selected Building Materials in Shanghai																				
		2017										2018										
		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	—	3,770	4,070	3,980	3,770	4,050	4,110	4,310	4,560	4,510	4,480	4,800	4,550	4,320	4,380	4,070	4,290	4,380	4,400	4,820	5,040
Reinforcement bar HRB400 (III) 25mm	¥/t	⋯	3,620	4,020	3,910	3,750	4,020	3,990	4,300	4,500	4,350	4,390	5,050	4,650	4,400	4,480	4,150	4,450	4,460	4,480	4,650	4,900
Portland cement Grade 42.5 (bag)	¥/t	⋯	330	390	420	420	420	400	380	430	460	460	640	590	500	470	500	560	530	530	530	560
Reinforced concrete Grade C30 5-25 stone P8 waterproofing (without pumping fee)	¥/m ³	—	375	416	436	446	466	460	455	490	500	510	590	576	541	526	536	571	561	561	561	576
Sand (rough/mixed)	¥/t	—	63	91	87	99	99	99	99	106	108	120	130	130	126	123	123	139	139	139	139	150

(Source: www.shjjw.gov.cn)

Wholesale Prices of Selected Building Materials in Shenzhen



Building Materials			Wholesale Prices of Selected Building Materials in Shenzhen																			
			2017									2018										
			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	—	4,150	4,600	4,300	4,200	4,200	4,270	4,800	4,850	4,780	4,983	5,241	4,915	4,754	4,638	4,517	4,703	4,663	4,861	5,226	5,021
Reinforcement bar HRB400 (III) 25mm	¥/t	---	4,100	4,410	4,180	4,200	4,240	4,290	4,700	4,700	4,630	4,793	5,292	4,932	4,756	4,628	4,379	4,402	4,342	4,502	4,890	4,828
Portland cement Grade 42.5 (bag)	¥/t	435	460	480	480	470	470	470	470	480	483	503	530	530	521	528	539	537	534	541	561
Reinforced concrete Grade C30 5-25 stone P8 waterproofing (without pumping fee)	¥/m³	—	460	465	481	484	487	481	483	483	504	500	507	536	537	536	565	562	565	612	665	654
Sand (rough/mixed)	¥/t	—	65	70	65	65	65	65	68	66	67	69	68	73	72	71	79	79	79	99	156	151

(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 Edifício CNAC 9^o
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 3007-3008, 30th Floor
Metropolitan Tower
No 68 Zourong Road
Central District
Chongqing 400010
China
Telephone: 86 23 6380 6628
Facsimile: 86 23 6380 6618
E-mail: chongqing@cn.rlb.com

DALIAN

Room 1103
Xiwang Tower
136 Zhongshan Road
Zhongshan District
Dalian 116001
Liaoning Province
China
Telephone: 86 411 3973 7778
Facsimile: 86 411 3973 7779
E-mail: dalian@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

22nd Floor
Greentech 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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