



MARCH 2022

# HONG KONG REPORT

QUARTERLY CONSTRUCTION  
COST UPDATE

RLB  
利比

Rider  
Levett  
Bucknall

# OFFICES AROUND THE WORLD

## AFRICA

### Angola

Luanda

### Botswana

Gaborone

### Kenya

Nairobi

### Maldives

Hulhumale

### Mauritius

Quatre Bornes

### Mozambique

Maputo

### Namibia

Windhoek

### Nigeria

Lagos

### Seychelles

Victoria

### South Africa

Cape Town

Durban

Pretoria

Stellenbosch

## ASIA

### North Asia

Beijing

Chengdu

Chongqing

Guangzhou

Guiyang

Haikou

Hangzhou

Hong Kong

Macau

Nanjing

Nanning

Seoul

Shanghai

Shenyang

Shenzhen

Wuhan

Wuxi

Xian

Zhuhai

## South Asia

Bacolod

Bohol

Cagayan de Oro

Cebu

Clark

Davao

Ho Chi Minh City

Iloilo

Jakarta

Kuala Lumpur

Laguna

Metro Manila

Phnom Penh

Subic

Singapore

Yangon

## India Alliance

Bangalore

## AMERICAS

### Caribbean

St. Lucia

### North America

Boston

Calgary

Chicago

Denver

Hilo

Honolulu

Kansas City

Las Vegas

Los Angeles

Maui

Mexico City

New York

Phoenix

Portland

San Francisco

San Jose

Seattle

Toronto

Tucson

Waikoloa

Washington DC

## EUROPE

### United Kingdom

Belfast

Birmingham

Bristol

Cardiff

Cumbria

Leeds

Liverpool

London

Manchester

Sheffield

Thames Valley

Warrington

### RLB | Euro Alliance

Austria

Belgium

Bulgaria

Croatia

Czech Republic

Denmark

France

Germany

Greece

Hungary

Ireland

Italy

Luxembourg

Montenegro

Netherlands

Norway

Poland

Portugal

Romania

Serbia

Spain

Sweden

Turkey

## MIDDLE EAST

### 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



# COST COMMENTARY

## REVIEW OF TENDER PRICE MOVEMENTS IN HONG KONG

According to Rider Levett Bucknall's Tender Price Index, which measures tender price movements of builder's works in the private sector in Hong Kong, there was an increase of 1.1% in tender prices in the fourth quarter of 2021. On a year-on-year basis, the tender price rose by 5.3%.

The following are the fourth quarter year-on-year tender price movements of builder's works in the private sector in the past five years:

2016 - 2017	2017 - 2018	2018 - 2019	2019 - 2020	2020 - 2021
-0.8%	-4.7%	-4.1%	-3.9%	5.3%

Hong Kong's economy increased by 4.8% year-on-year in real terms in the fourth quarter of 2021, compared with the 5.5% growth in the third quarter of 2021. On a seasonally adjusted quarter-to-quarter comparison basis, real Gross Domestic Product (GDP) increased by 0.2% in the fourth quarter of 2021 over the previous quarter. According to the Composite Consumer Price Index, overall consumer prices increased by 1.2% in January 2022 over the same month a year earlier, following a y-o-y increase of 2.4% in December 2021. The seasonally adjusted unemployment rate increased from 3.9% in November 2021 - January 2022 to 4.5% in December 2021 - February 2022. Meanwhile, the underemployment rate increased from 1.8% to 2.3%.

With rebound of global demand and domestic economic activities, Hong Kong's economy had further recovered in the fourth quarter of 2021. Investment expenditure on building and construction grew by 2.1% year-on-year, compared with 2.0% in the previous quarter. There was a moderate drop in gross floor area contributed by commencement of new private building or superstructure in the fourth quarter of 2021. Meanwhile, decrease in construction output for both private and public sectors was observed year-on-year in real terms. As announced in the 2022-23 Budget speech, the Government has proposed to set aside \$100 billion to expedite the implementation

of infrastructure works within the Northern Metropolis for long-term land supply. The 2022-23 Land Sale Programme comprises 17 residential and commercial sites to provide 300,000 square metres of gross floor area for the private market. Steady land supply for public and private housing development would provide opportunities for the construction market. However, the fifth wave of Covid-19 outbreak recently has posed difficulties to the construction industry with border closures, mandatory quarantine and delay in obtaining government approvals. Oil prices also jumped amid the Ukraine-Russia war along with disrupted energy supply from Russia, which may result in inflation in commodity prices. While there is still uncertainty to the outcome of on-going conflicts and pandemic, it is expected that the tender price will continue to rise in the coming quarters.

## MACAU

Macau's Gross Domestic Product shrank 4.4% year on year in the fourth quarter of 2021 compared to an upwardly revised 33.8% expansion in the previous period. The general unemployment rate for November 2021 - January 2022 increased slightly from 3.1% to 3.2% compared with that in October - December 2021 while the underemployment rate dropped from 4.0% to 3.2%.

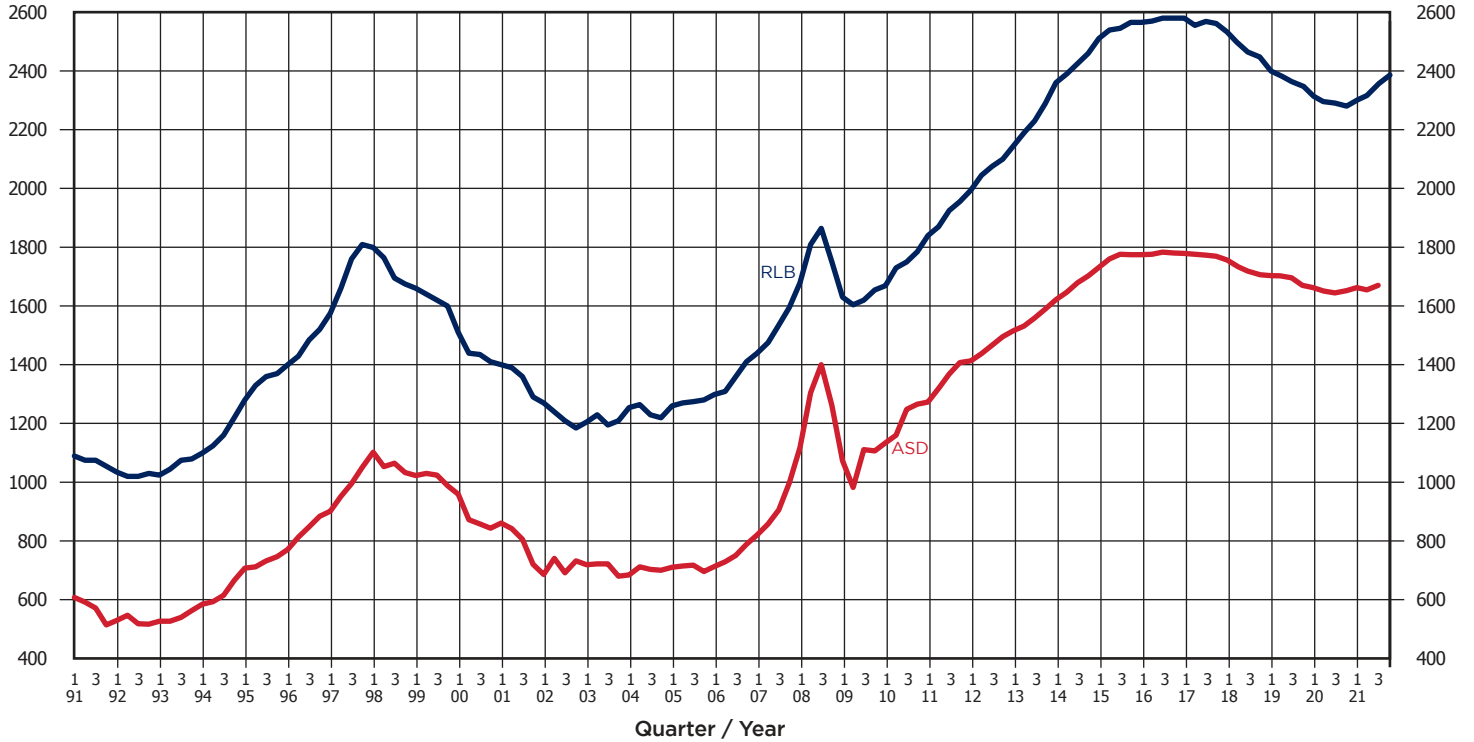
The Macau Government announced the re-launch of land auctions, which were last held over a decade ago. It is anticipated that the private construction market will become active again gradually. The recent construction output in Macau was mainly contributed by public construction investment on infrastructure and public housing projects by the Macau government. While the global pandemic continues and with a less optimistic economic outlook, it is anticipated that private construction investment in Macau remains low and the tender prices in Macau will remain weak in coming quarters. In the long run, an upswing is seen due to the re-launch of land auctions and the finalization of gaming law amendment.

### Disclaimer:

While the information in this publication is believed to be correct at the time of publishing, no responsibility is accepted for its accuracy. Persons desiring to utilize any information appearing in the publication should verify its applicability to their specific circumstances. Cost information in this publication is indicative and for general guidance only and is based on rates at **4th Quarter 2021**.

## TENDER PRICE INDICES IN HONG KONG

RLB = Rider Levett Bucknall (Private Sector)  
ASD = Architectural Services Department (Public Sector)



Graph showing cost trends in the construction industry in Hong Kong based on Tender Prices for Builder's Works

## TENDER PRICE INDICES

Quarter	RLB		ASD		RLB		ASD		RLB		ASD		RLB		ASD		RLB		ASD		RLB		ASD			
	1968	1969	1970	1970	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990	1991		
1			104		160	100	210	140	238	144	258	160	345	206	275	145	221	150	270	164	320	203	460	262		
	2			112		173	106	222	143	236	146	275	167	345	213	258	145	238	153	270	174	350	208	500	285	
		3			130		185	124	230	144	238	158	300	190	318	203	243	137	255	153	273	185	380	230	535	304
			4	100		148		198	131	238	143	245	158	325	199	290	191	228	140	263	149	300	201	420	238	550
1																										
	2																									
		3																								
			4																							
1																										
	2																									
		3																								
			4																							
1																										
	2																									
		3																								
			4																							
1																										
	2																									
		3																								
			4																							
1																										
	2																									
		3																								
			4																							
1																										
	2																									
		3																								
			4																							
1																										
	2																									
		3																								
			4																							

## COMMON UNIT RATES IN HONG KONG

Description	Unit	Average Rates in HK\$			
		1Q2021	2Q2021	3Q2021	4Q2021
Reinforced concrete Grade 40	m <sup>3</sup>	1,150.00	1,200.00	1,230.00	1,290.00
Sawn formwork	m <sup>2</sup>	360.00	370.00	390.00	420.00
Deformed high yield steel bar reinforcement	kg	10.20	10.70	11.90	12.20
105 mm Solid concrete block wall	m <sup>2</sup>	285.00	290.00	300.00	310.00
Mastic asphalt roofing overall 20 mm thick (2-coat work) on horizontal surfaces	m <sup>2</sup>	162.00	163.00	168.00	170.00
20 mm (Finished) Timber strip flooring including plywood sub-floor, sanding and wax polishing	m <sup>2</sup>	770.00	780.00	800.00	810.00
Timber skirting 100 mm high x 13 mm thick	m	113.00	114.00	116.00	117.00
50 mm Solid core flush door faced both sides with 5 mm timber veneered plywood including door frame, architrave, mouldings and painting (excluding ironmongery)	No.	6,000.00	6,000.00	6,100.00	6,200.00
Galvanised mild steel in balustrades, railings and general welded and framed work	kg	32.00	32.00	33.00	33.00
Structural steelwork - standard sections	kg	31.00	31.00	32.00	33.00
Fluorocarbon coated aluminium windows - frame and hardware including clear float glass and glazing (single-glazed windows)	m <sup>2</sup>	2,650.00	2,670.00	2,720.00	2,800.00
20 mm Cement and sand (1:3) paving	m <sup>2</sup>	104.00	105.00	110.00	111.00
Coloured unglazed ceramic mosaic floor tiling	m <sup>2</sup>	280.00	280.00	285.00	290.00
Marble slab flooring (mid-range, European origin)	m <sup>2</sup>	2,900.00	2,870.00	2,930.00	2,960.00
Two coats internal lime cement plaster to soffit and beams	m <sup>2</sup>	101.00	102.00	105.00	108.00
Metal panel suspended ceiling	m <sup>2</sup>	615.00	620.00	630.00	640.00
Ceramic / homogeneous wall tiling; internal work	m <sup>2</sup>	535.00	525.00	535.00	540.00
Ceramic mosaic external wall tiling; adhesive fixed (45 x 45 or 45 x 95 mm tiles)	m <sup>2</sup>	420.00	410.00	420.00	420.00
Alkali resistant primer and two coats of emulsion paint on plastered walls and ceilings	m <sup>2</sup>	64.00	64.00	66.00	68.00

### Notes:

- The unit rates above are for general guidelines of likely tendered rates obtained by competitive tendering for lump sum fixed price contracts with a normal contract period.
- The rates are also based on normal site conditions, locations and normal working hours.

## 2021年第4季中国主要城市单方造价指标 Approximate Order of Construction Costs in Hong Kong and Selected Cities in China

(Cost per Square Metre Construction Floor Area at 4<sup>th</sup> Quarter 2021 Prices)

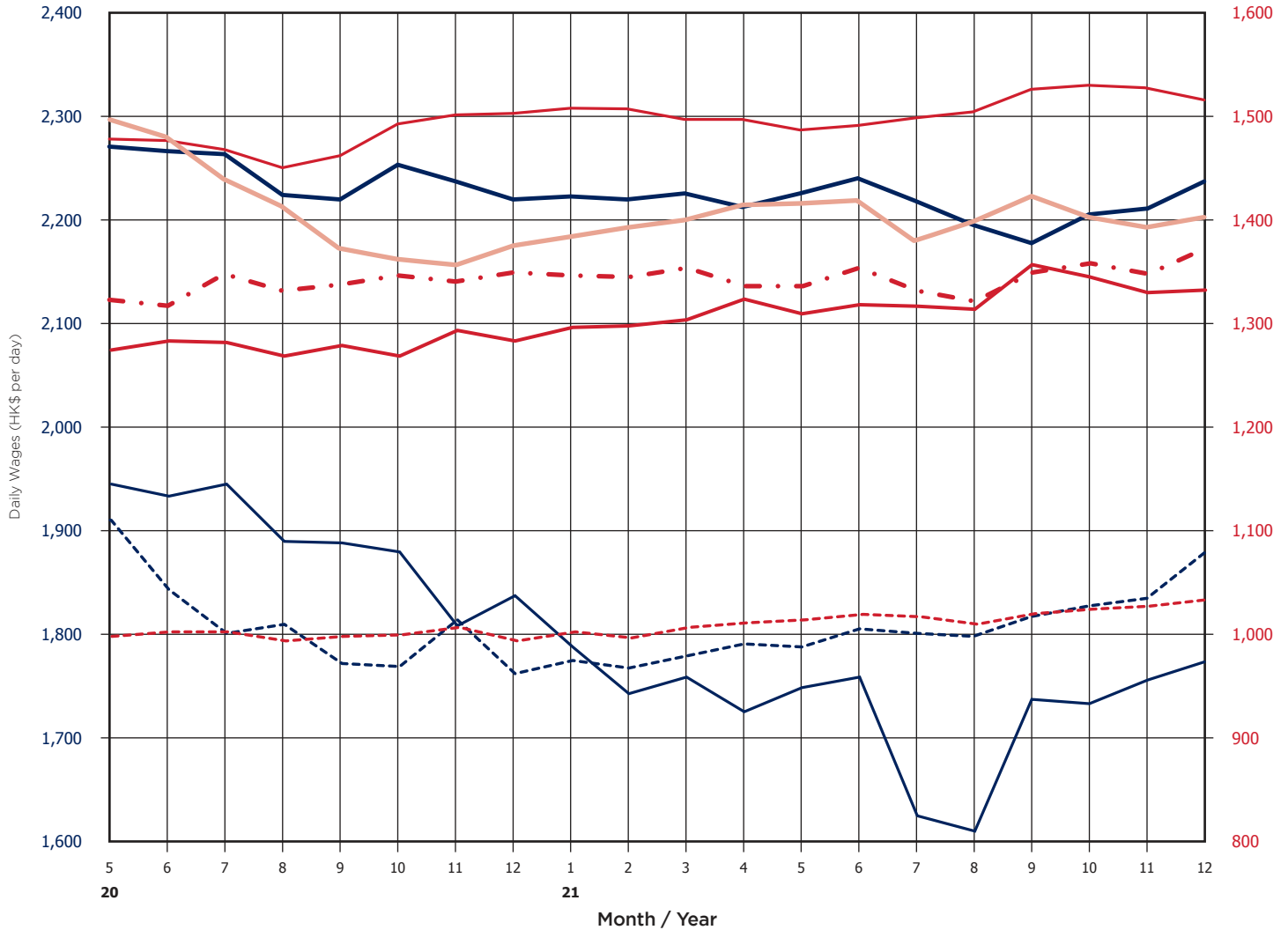
建筑物种类 Type of Building	香港 Hong Kong HK\$	澳门 Macau MOP	北京 Beijing RMB	成都 Chengdu RMB	广州 Guangzhou RMB	上海 Shanghai RMB	深圳 Shenzhen RMB	天津 Tianjin RMB	武汉 Wuhan RMB	无锡 Wuxi RMB	西安 Xian RMB	珠海 Zhuhai RMB
<b>Office 办公楼</b>												
High Quality 高档次	24,200 - 33,000+	17,700 - 23,600+	9,200 - 13,300	7,900 - 11,450	8,400 - 12,800	9,100 - 13,300	8,450 - 12,750	8,800 - 12,900	8,000 - 11,950	9,000 - 13,200	8,000 - 12,000	7,900 - 11,800
Medium Quality 中档次	20,800 - 24,600	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Ordinary Quality 普通档次	17,900 - 22,000	11,100 - 15,400	4,550 - 6,300	4,200 - 5,700	4,400 - 6,000	4,700 - 6,200	4,450 - 5,950	4,550 - 6,000	4,150 - 5,600	4,650 - 6,100	4,150 - 5,550	4,050 - 5,500
<b>Shopping Centre 商场</b>												
High Quality 高档次	29,400 - 35,200+	22,700 - 27,700+	9,000 - 14,000	8,250 - 12,800	8,900 - 13,700	9,000 - 14,000	8,950 - 13,650	N/A	N/A	N/A	N/A	N/A
Medium Quality 中档次	24,300 - 29,200	N/A	7,200 - 9,000	6,600 - 8,250	7,100 - 8,700	7,300 - 9,200	7,200 - 8,750	N/A	N/A	N/A	N/A	N/A
<b>Residential 住宅</b>												
High Rise; High Quality 高层; 高档次	24,900 - 35,400+	14,800 - 21,200+	5,150 - 7,200	4,500 - 6,200	5,200 - 6,900	5,200 - 7,200	4,900 - 6,600	5,050 - 7,000	4,500 - 6,450	5,100 - 7,050	4,500 - 6,500	4,450 - 6,400
High Rise; Better Quality 高层; 中档次	18,800 - 21,900	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
High Rise; Ordinary Quality 高层; 普通档次	17,400 - 18,400	8,300 - 10,300	2,900 - 3,900	2,650 - 3,600	2,900 - 3,800	3,100 - 4,000	2,900 - 3,850	2,950 - 3,850	2,650 - 3,600	3,000 - 3,900	2,650 - 3,650	2,600 - 3,550
House; High Quality 别墅; 高档次	35,100 - 51,300+	N/A	5,600 - 7,900	4,750 - 6,700	5,200 - 7,000	5,700 - 7,900	5,200 - 7,100	5,500 - 7,700	4,900 - 7,100	5,700 - 7,900	4,900 - 7,100	4,850 - 7,000
House; Medium Quality 别墅; 中档次	24,900 - 30,600	N/A	3,750 - 4,850	3,250 - 4,250	3,400 - 5,000	3,950 - 5,100	3,450 - 4,550	3,850 - 4,900	3,400 - 4,450	3,950 - 5,050	3,400 - 4,450	3,350 - 4,400
Clubhouse 会所	31,600 - 50,600+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
External works & landscaping 室外工程 (cost/m <sup>2</sup> external area)	4,050 - 9,100+	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
<b>Hotel (including FF&amp;E) 酒店 (包括家具及设备)</b>												
5-Star 五星	34,900 - 42,500+	29,900 - 36,700+	15,300 - 20,100	13,350 - 17,000	15,200 - 19,500	15,600 - 20,300	14,900 - 19,400	15,000 - 19,700	14,200 - 18,300	15,500 - 20,200	14,000 - 18,300	13,800 - 18,100
3-Star 三星	29,600 - 34,200	24,000 - 27,600	11,300 - 14,600	9,950 - 12,500	10,700 - 13,700	10,900 - 14,600	11,100 - 13,750	10,600 - 14,200	10,350 - 13,250	10,900 - 14,600	10,100 - 13,200	10,000 - 13,100
<b>Industrial 厂房</b>												
Landlord; High Rise 租用; 高层	12,300 - 14,500	N/A	3,050 - 4,200	2,750 - 3,900	3,000 - 4,100	3,300 - 4,400	3,050 - 4,150	3,150 - 4,200	2,800 - 3,900	3,300 - 4,350	2,800 - 3,900	2,750 - 3,850
End User; Low Rise 自用; 低层	15,500 - 22,600	N/A	4,350 - 7,700	4,000 - 7,100	4,200 - 7,800	4,400 - 7,800	4,300 - 7,800	4,250 - 7,500	4,000 - 7,100	4,400 - 7,800	4,000 - 7,100	3,950 - 7,000
<b>Carpark 车库</b>												
Basement; up to 2 Levels 地下室; 不多于2层	22,100 - 30,000+	10,700 - 13,500+	4,700 - 7,800	4,300 - 7,150	4,400 - 7,500	4,550 - 7,700	4,500 - 7,500	4,400 - 7,300	4,300 - 7,300	4,450 - 7,600	4,350 - 7,100	4,250 - 7,100
Multi-Storey 地上; 多层	10,500 - 13,200	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

### NOTES 注:

- The construction costs above are based on prices obtained by competitive tendering for lump sum fixed price contracts with a normal contract period and are based on normal site conditions and locations. Extra costs should be allowed for projects with fast track programme, non-traditional procurement approaches and multi-phasing completion, etc. 以上单方造价指标按竞价价格下之包干合同编制，并按正常工期、工地状况等为准。如项目采用快速施工、非传统式采购合约、分期施工等，应考虑增加额外预算成本。
- The costs are average square metre unit costs only not based on any specific drawings / design. Therefore they provide nothing more than a rough guide to the probable cost of a building. Figures outside the given ranges may be encountered. When information is required on a specific project, it is essential that professional advice be sought. 平均单方造价并不是参考图纸或设计而编制。只可作为建筑造价之估算，亦可能出现范围外之单价。若有特定之工程资料，理应参考专业顾问之意见。
- The standards for each type of building in selected cities in China do not necessarily follow those in Hong Kong due to local design practices and choice of materials. 中国各城市之建筑标准、采纳之物料均有所不同，并不需要与香港单价作比较。
- The building costs exclude furniture, fittings and equipment (except hotel / serviced apartment / clubhouse), site formation and external works, finance and legal expenses, consultants' fees and reimbursables, value of land and fluctuations in prices between the price date as specified above and the time of calling tenders. 建筑物单价并不包括家具及设备(酒店/服务式住宅/会所除外)、工地平整、室外工程、财务、法律、顾问公司等专业费用，地价及由此单价生效日至投标时间之价格或汇率变动。
- Construction floor area is the summation of covered floor areas contained within the outer surface of external wall or external perimeter, whichever is larger, measured at each floor level. It includes all floor areas occupied by stairwells, lift shafts, vertical duct wells, plant rooms, covered external floors, but excludes floor areas occupied by the atrium voids, light wells, and the areas covered by canopies and architectural features such as air conditioners (ACs) platforms, projected planters, sunshades, etc. 建筑面积乃有盖面积总和并量度至建筑物外墙外面或量度至边周界，以较大者为准；包括楼梯井、电梯井、管线井、机电间、有盖室外面积，但不包括大堂上部空间、光井及雨棚、建筑装饰如空调机平台、花槽、遮阳棚等。
- Other Specific Exclusions 其它不包括项目：  
HOTEL 酒店：pre-opening expenses, operating expenses, working capital, staff training and administrative costs 开幕前费用、营运费用、开办费、员工培训及行政费等。  
SHOPPING CENTRE 商场：fit out to tenant areas 租户之装修工程。  
INDUSTRIAL; LANDLORD 厂房(租用)：security system, air conditioning, electrical distribution in tenant areas; production and warehousing equipment; special M&E provisions 保安、空调、租户内之电器布线、生产及仓库装备、特别机电配套等。  
PROJECTS IN SELECTED CITIES IN CHINA 中国主要城市：utilities to the site beyond site boundary, connection charges and capital contribution; local authority levies and taxation; import duties 工地外之主干线、接驳费、增容费、当局行政费用、税项、入口税。

## LABOUR COST TRENDS

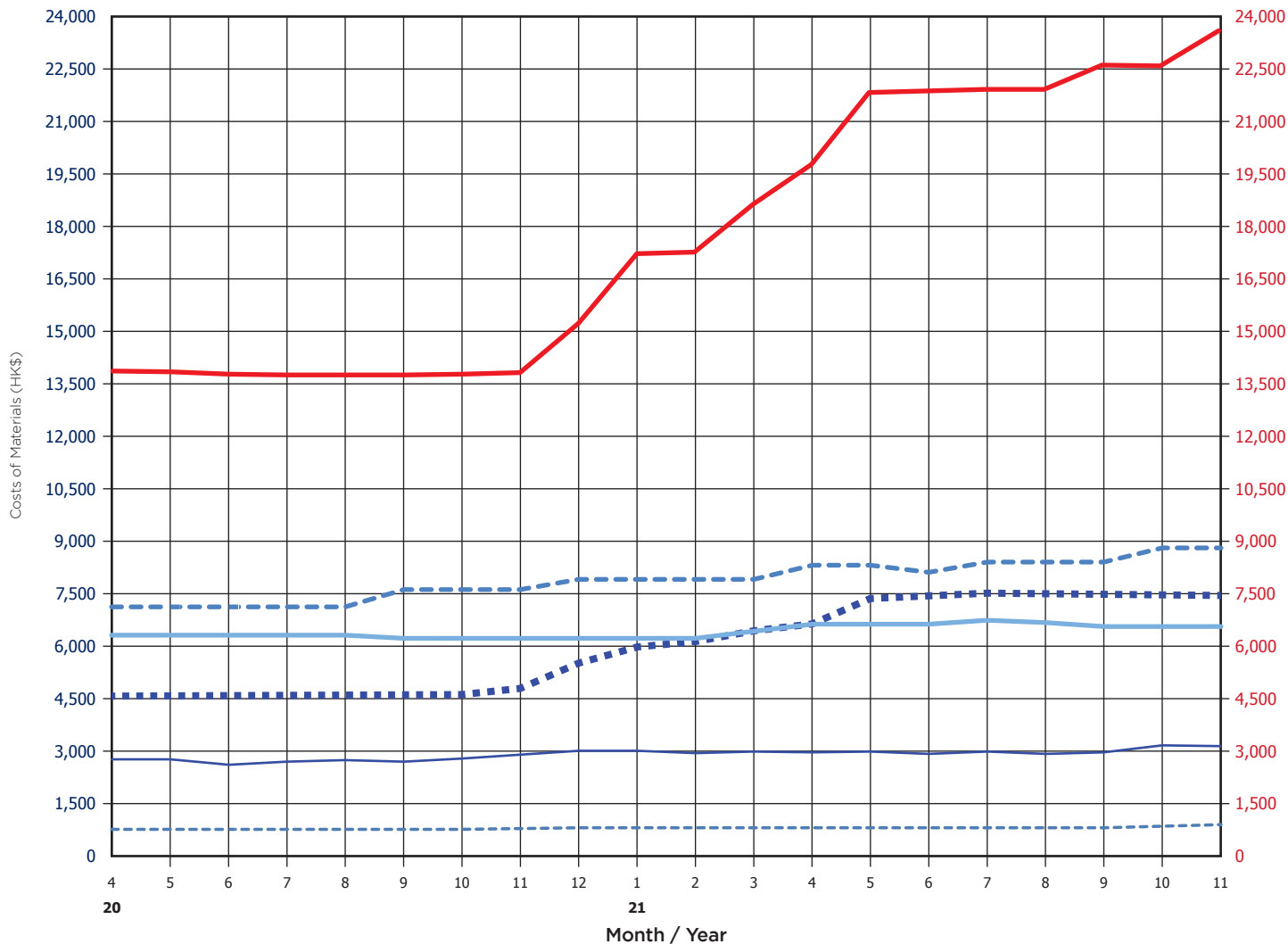
## AVERAGE DAILY WAGES OF WORKERS ENGAGED IN PUBLIC SECTOR CONSTRUCTION PROJECTS



Selected Occupations	Average Daily Wages in HK\$ per day																			
	2020						2021													
	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
Bar Bender and Fixer	2,267.9	2,263.7	2,261.8	2,222.6	2,217.7	2,250.8	2,234.7	2,217.0	2,220.2	2,217.1	2,222.9	2,209.9	2,223.4	2,237.5	2,215.8	2,193.3	2,175.6	2,204.3	2,210.0	2,235.0
Concretor	1,943.8	1,931.5	1,943.2	1,889.1	1,887.2	1,878.0	1,807.2	1,837.0	1,787.6	1,742.2	1,758.5	1,725.4	1,748.1	1,759.0	1,625.1	1,610.2	1,736.7	1,731.6	1,754.7	1,772.2
Carpenter (formwork)	1,909.1	1,842.2	1,799.6	1,809.1	1,771.1	1,768.1	1,814.0	1,761.6	1,773.6	1,767.0	1,779.1	1,789.8	1,787.1	1,804.0	1,800.3	1,796.7	1,815.9	1,826.4	1,833.9	1,876.6
Painter and Decorator	1,272.5	1,281.8	1,279.7	1,267.0	1,277.8	1,267.0	1,292.0	1,281.7	1,293.8	1,296.0	1,301.2	1,321.6	1,307.2	1,316.2	1,314.4	1,312.4	1,356.0	1,344.4	1,326.3	1,327.2
Plasterer	1,494.2	1,477.0	1,436.8	1,410.6	1,369.7	1,359.6	1,354.1	1,372.5	1,381.2	1,390.6	1,397.2	1,411.5	1,413.8	1,416.2	1,376.9	1,395.9	1,423.6	1,403.2	1,392.5	1,402.1
Metal Worker	1,321.6	1,316.4	1,347.3	1,331.2	1,336.6	1,345.2	1,339.6	1,347.5	1,345.3	1,344.4	1,352.1	1,335.3	1,334.9	1,351.9	1,330.5	1,320.7	1,347.8	1,356.4	1,347.0	1,371.4
Plumber	1,476.3	1,474.5	1,465.7	1,447.8	1,459.8	1,490.1	1,498.3	1,499.9	1,505.3	1,504.4	1,494.7	1,494.4	1,484.5	1,488.3	1,495.7	1,501.7	1,526.9	1,530.3	1,528.4	1,516.7
General Workers	998.0	1,001.1	1,001.8	993.2	998.1	998.2	1,005.6	993.7	1,002.3	995.4	1,006.7	1,010.5	1,014.0	1,018.6	1,016.9	1,008.4	1,019.0	1,023.8	1,026.3	1,032.6

(Source: Census and Statistics Department)

## MATERIAL COST TRENDS      AVERAGE WHOLESALE PRICES OF SELECTED BUILDING MATERIALS



Building Materials	Average Wholesale Prices of Selected Building Materials																			
	2020										2021									
	4	5	6	7	8	9	10	11	12	1	2	3	4	5	6	7	8	9	10	11
Sand (\$/10 t)	2,730	2,730	2,590	2,680	2,720	2,660	2,750	2,880	2,990	2,990	2,920	2,970	2,950	2,960	2,890	2,960	2,890	2,940	3,150	3,120
Bitumen (\$/t)	7,100	7,100	7,100	7,100	7,100	7,600	7,600	7,600	7,900	7,900	7,900	7,900	8,300	8,300	8,100	8,400	8,400	8,400	8,800	8,800
Portland Cement (\$/t)	739	737	736	738	741	742	742	758	770	779	767	767	768	770	770	781	784	788	817	870
Sawn Hardwood 50x75 (\$/m <sup>3</sup> )	6,303	6,303	6,303	6,303	6,303	6,204	6,204	6,204	6,204	6,204	6,204	6,411	6,604	6,604	6,604	6,713	6,658	6,548	6,548	6,548
Galvanised Mild Steel Plates (t)	13,836	13,811	13,749	13,724	13,730	13,730	13,751	13,791	15,218	17,212	17,262	18,644	19,786	21,871	21,896	21,946	21,946	22,651	22,636	23,628
High Tensile Steel Bars (\$/t)	4,516	4,471	4,441	4,467	4,510	4,594	4,563	4,753	5,474	5,961	6,126	6,431	6,628	7,386	7,460	7,531	7,506	7,511	7,494	7,461

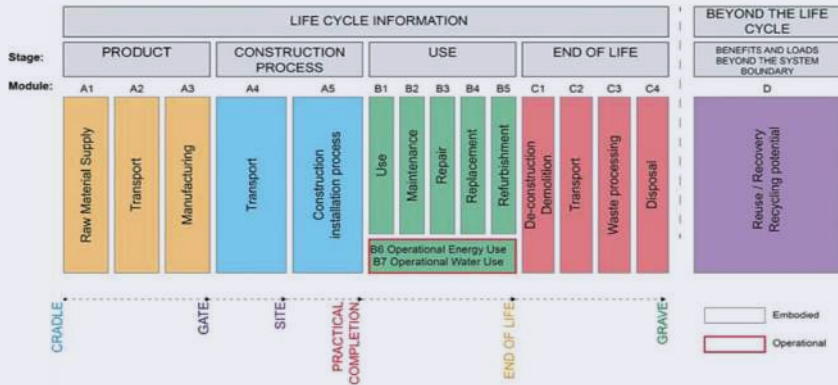
(Source: Census and Statistics Department)



## Decarbonisation of Buildings in Hong Kong - An Introduction

In response to the Paris Agreement, the Government has set out the decarbonisation target of reducing total carbon emissions by 26% to 36% from the base 2005 level. With buildings accounting for more than 60% of the greenhouse gases (GHG) emitted citywide, the building sector has great potential in contributing to the city's GHG reduction target.

### Life cycle carbon emission assessment

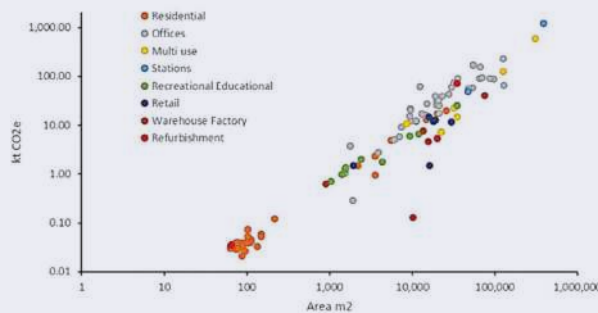


**Figure 1: Building life cycle**  
(Source: The Institution of Structural Engineers)

- Life cycle assessment (LCA) can be adopted to study a building's carbon emission in various stages of the life cycle, including cradle to end of construction (A1-A5), cradle to grave (A1-C4) and the closed loop life cycle cradle to cradle (A1-D).
- Understanding the embodied carbon of construction materials and carbon emissions of on site construction process (A1-A5) provides the opportunities to improve the sustainability performance and construction project efficiency.

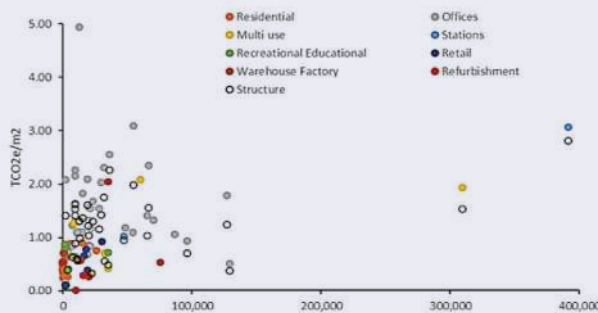
### Carbon emission of buildings vs. floor area

**Figure 2: Total carbon emission of buildings vs. Floor area**  
(Source: The Institution of Structural Engineers)



- In general, the total carbon emission (ktCO<sub>2</sub>e) increases with floor area for various building types.
- Buildings above the trend indicate high carbon emission and should be optimized by applying low carbon construction technologies and advanced construction management.

**Figure 3: Unit carbon emission of buildings vs. Floor area**  
(Source: The Institution of Structural Engineers)



- In terms of unit carbon emission (tCO<sub>2</sub>e/m<sup>2</sup>) with building floor area, residential and educational buildings generally have better environmental performance.
- In addition, smaller office buildings are associated with the greatest variation in carbon emission, possibly due to their variance in design standards and construction requirements.

### Carbon emission of buildings vs. building height

Some correlation of carbon emission and building height is found but it is not as pronounced as carbon floor area correlation. The residential buildings tend to be below the general trend, with offices tend to be above the general trend.

### Way forward

If the pressure to increase buildings' eco-efficiency mounts faster than the market currently anticipates, the ones with poor sustainability performance could suffer a sizeable brown discount. As new skylines and urbanization continue to rise around the globe, sustainable construction will ensure our buildings to truly stand the test of time.

# NORTH AISA OFFICES

## 北亚洲办事处

### HONG KONG 香港

15th Floor  
Goldin Financial Global Centre  
17 Kai Cheung Road  
Kowloon Bay, Kowloon  
Hong Kong  
香港九龙九龙湾启祥道 17 号  
高银金融国际中心 15 楼  
Telephone 电话: 852 2823 1823  
Facsimile 传真: 852 2861 1283  
E-mail 电邮: hongkong@hk.rlb.com

### BEIJING 北京

Room 1803-1809, 18th Floor  
East Ocean Centre  
24A Jian Guo Men Wai Avenue  
Chaoyang District  
Beijing 100004  
China  
中国北京市  
朝阳区建国门外大街 24A  
东海中心 18 楼 1803-1809 室  
邮编 100004  
Telephone 电话: 86 10 6515 5818  
Facsimile 传真: 86 10 6515 5819  
E-mail 电邮: beijing@cn.rlb.com

### CHENGDU 成都

Room 2901-2904, 29th Floor  
Square One  
No.18 Dongyu Street  
Jinjiang District  
Chengdu 610016  
Sichuan Province  
China  
中国四川省成都市  
锦江区东御街 18 号  
百扬大厦 29 楼 2901-2904 室  
邮编 610016  
Telephone 电话: 86 28 8670 3382  
Facsimile 传真: 86 28 8613 6160  
E-mail 电邮: chengdu@cn.rlb.com

### CHONGQING 重庆

Room 1-3 & 17-18  
39/F, IFS Tower T1  
No. 1 Qingyun Road  
Jiangbei District  
Chongqing 400024  
China  
中国重庆市江北区  
庆云路 1 号  
国金中心 T1 办公楼  
39 楼 1-3 及 17-18 单元  
邮编 400024  
Telephone 电话: 86 23 6380 6628  
Facsimile 传真: 86 23 6380 6618  
E-mail 电邮: chongqing@cn.rlb.com

### GUANGZHOU 广州

Room 1302-1308  
Central Tower  
No. 5 Xiancun Road  
Guangzhou 510623  
Guangdong Province  
China  
中国广东省广州市  
冼村路 5 号  
凯华国际中心  
1302-1308 室  
邮编 510623  
Telephone 电话: 86 20 8732 1801  
Facsimile 传真: 86 20 8732 1803  
E-mail 电邮: guangzhou@cn.rlb.com

### GUIYANG 贵阳

Room E, 12th Floor  
Fuzhong International Plaza  
126 Xin Hua Road  
Guiyang 550002  
Guizhou Province  
China  
中国贵州省贵阳市  
新华路 126 号  
富中国际广场 12 层 E 座  
邮编 550002  
Telephone 电话: 86 851 8553 3818  
Facsimile 传真: 86 851 8553 3618  
E-mail 电邮: guiyang@cn.rlb.com

### HAIKOU 海口

Room 1705, 17th Floor  
Fortune Centre  
38 Da Tong Road  
Haikou 570102  
Hainan Province  
China  
中国海南省海口市  
大同路 38 号  
财富中心 17 楼 1705 室  
邮编 570102  
Telephone 电话: 86 898 6672 6638  
Facsimile 传真: 86 898 6672 1618  
E-mail 电邮: haikou@cn.rlb.com

### HANGZHOU 杭州

Room 1603, 16th Floor  
North Tower, Modern City Center  
No. 161 Shao Xing Road  
Xia Cheng District  
Hangzhou 310004  
Zhejiang Province, China  
中国浙江省杭州市  
下城区绍兴路 161 号  
野风现代中心北楼 16 层 1603 室  
邮编 310004  
Telephone 电话: 86 571 8539 3028  
Facsimile 传真: 86 571 8539 3708  
E-mail 电邮: hangzhou@cn.rlb.com

### MACAU 澳门

Alameda Dr. Carlos D' Assumpção  
No. 398 Edificio CNAC 9º Andar I-J  
Macau SAR  
澳门新口岸  
宋玉生广场 398 号  
中航大厦 9 楼 I-J 座  
Telephone 电话: 853 2875 3088  
Facsimile 传真: 853 2875 3308  
E-mail 电邮: macau@mo.rlb.com

### NANJING 南京

Room 1201, 12th Floor  
South Tower, Jinmao Plaza  
201 Zhong Yang Road  
Nanjing 210009  
Jiangsu Province  
China  
中国江苏省  
南京市中央路 201 号  
金茂广场南塔写字楼 12 楼 1201 室  
邮编 210009  
Telephone 电话: 86 25 8678 0300  
Facsimile 传真: 86 25 8678 0500  
E-mail 电邮: nanjing@cn.rlb.com

### NANNING 南宁

Room 2203, 22th Floor  
Block B, Resources Building  
No. 136 Minzu Road  
Qingxiu District  
Nanning 530000  
Guangxi Province  
China  
中国广西省  
南宁市青秀区民族大道 136 号  
华润大厦 B 座 22 层 2203 室  
邮编 530000  
Telephone 电话: 86 771 5896 101  
E-mail 电邮: nanning@cn.rlb.com

### SEOUL 首尔

(Yeoksam-Dong, Daon Building)  
8th Floor, 8 Teheran-ro 27-gil  
Gangnam-Gu  
Seoul 06141  
Korea  
Telephone 电话: 82 2 582 2834  
Facsimile 传真: 82 2 563 5752  
E-mail 电邮: seoul@kr.rlb.com

### SHANGHAI 上海

22nd Floor, Greentech Tower  
No.436 Heng Feng Road  
Jingan District  
Shanghai 200070  
China  
中国上海市  
静安区恒丰路 436 号  
环智国际大厦 22 楼  
邮编 200070  
Telephone 电话: 86 21 6330 1999  
Facsimile 传真: 86 21 6330 2012  
E-mail 电邮: shanghai@cn.rlb.com

### SHENYANG 沈阳

25th Floor  
Tower A, President Building  
No. 69 Heping North Avenue  
Heping District  
Shenyang 110003  
Liaoning Province  
China  
中国辽宁省沈阳市  
和平区和平北大街 69 号  
总统大厦 A 座 25 楼  
邮编 110003  
Telephone 电话: 86 24 2396 5516  
Facsimile 传真: 86 24 2396 5515  
E-mail 电邮: shenyang@cn.rlb.com

### SHENZHEN 深圳

Room 4510-4513  
Shun Hing Square Diwang Comm.  
Centre  
5002 Shennan Road East  
Shenzhen 518001  
Guangdong Province  
China  
中国广东省深圳市  
深南东路 5002 号  
信兴广场地王商业大厦  
4510-4513 室  
邮编 518001  
Telephone 电话: 86 755 8246 0959  
Facsimile 传真: 86 755 8246 0638  
E-mail 电邮: shenzhen@cn.rlb.com

### WUHAN 武汉

Room 3301, 33rd Floor  
Heartland 66 Office Tower  
No.688 Jinghan Avenue  
Qiaokou District  
Wuhan 430030  
Hubei Province  
China  
中国湖北省武汉市  
硚口区京汉大道 688 号  
武汉恒隆广场办公楼 3301 室  
邮编 430030  
Telephone 电话: 86 27 6885 0986  
Facsimile 传真: 86 27 6885 0987  
E-mail 电邮: wuhan@cn.rlb.com

### WUXI 无锡

Room 1410-1412, 14th Floor  
Juna Plaza  
No. 6 Yonghe Road  
Nanchang District  
Wuxi 214000  
Jiangsu Province  
China  
中国江苏省无锡市  
南长区永和路 6 号  
君来广场 14 楼 1410-1412 室  
邮编 214000  
Telephone 电话: 86 510 8274 0266  
Facsimile 传真: 86 510 8274 0603  
E-mail 电邮: wuxi@cn.rlb.com

### XIAN 西安

Room 1506, 15th Floor, Tower F  
Chang'an Metropolis Center  
No.88 Nanguan Zheng Street  
Beilin District  
Xian 710068  
Shaanxi Province  
China  
中国陕西省西安市  
碑林区南关正街 88 号  
长安国际中心 F 座 15 楼 1506 号  
邮编 710068  
Telephone 电话: 86 29 8833 7433  
Facsimile 传真: 86 29 8833 7438  
E-mail 电邮: xian@cn.rlb.com

### ZHUHAI 珠海

Room 1401-1402, 14th Floor  
Taifook International Finance Building  
No. 1199 Jiu Zhuo Road East  
Jida  
Zhuhai 519015  
Guangdong Province  
China  
中国广东省珠海市  
吉大九洲大道东 1199 号  
泰福国际金融大厦 14 楼  
1401-1402 室  
邮编 519015  
Telephone 电话: 86 756 388 9010  
Facsimile 传真: 86 756 388 9169  
E-mail 电邮: zhuhai@cn.rlb.com

[RLB.com](http://RLB.com)

AFRICA | AMERICAS | ASIA | EUROPE | MIDDLE EAST | OCEANIA



**RLB**  
利比  
Rider  
Levett  
Bucknall