SECOND QUARTER 2022

INTERNATIONAL REPORT

CONSTRUCTION MARKET INTELLIGENCE

RLB Rider Levett Bucknall

INDEPENDENT CONSULTANTS, LOCAL KNOWLEDGE AND EXPERTISE, GLOBAL NETWORK

As the largest independent and most geographically prevalent construction cost consultancy of its kind in the world, Rider Levett Bucknall (RLB) has access to the foremost construction market intelligence.

RLB collects and collates construction data and forecast trends—on a global, regional, country, city and sector basis—from its comprehensive network of offices around the globe. The RLB International Report, which is published half-yearly, presents a snapshot of this data.

Each RLB office contributes to the global intelligence, providing insights into the conditions and trends that impact the local construction industry. The information gathered and disseminated by each office includes:

- RLB Crane Index®
- Forecast Tender Price Index uplifts
- RLB Construction Market Activity Cycle
- Key building type cost ranges in local currencies

TENDER PRICE INDEX

RLB's Tender Price Index (TPI) showcases the historical and forecast movements in construction cost inflation and escalation on an annual basis. The TPI annual rate represents an overall forecast of the movement of construction costs for the industry within the key cities of RLB's network of offices.

BUILDING COST RANGES

RLB's regularly updated Building Cost Ranges can be found via the RLB website (www.rlb.com/ccc).

Each region's Cost Intelligence publication features current building cost ranges, and each publication can be found on www.rlb.com under the 'Insights' tab.

CONSTRUCTION MARKET INTELLIGENCE

A summary of Construction Market Intelligence is provided by each region, highlighting the issues that are impacting the construction industry, and providing key insights into current construction price movements.

RLB MARKET ACTIVITY CYCLE

The RLB Market Activity Cycle focuses on seven key sectors within the overall construction economy. Local RLB Directors assess the current position of each sector within the market activity cycle for each respective city.

RELATIVITY INDEX

Using TPI data and cost modelling, RLB provides a general cost comparison for building costs between locations. The Relativity Index ranks each city in respect of other locations within the RLB network of offices. Currently, 49 cities are included in the index.

RLB CRANE INDEX®

The RLB Crane Index® provides a simplified measure of the current state of the construction industry's workload in key locations around the world. RLB offices record fixed crane numbers across key cities by project sector, which provides an overview of how markets change over time.

Cover Image: Hong Kong Palace Museum, West Kowloon Cultural District, Hong Kong, China

RLB publishes key industry intelligence data throughout the year. For more detailed sector, city, country and regional data, please review our regional or country specific publications. These can be found under the 'Insights' tab of **RLB.com**.

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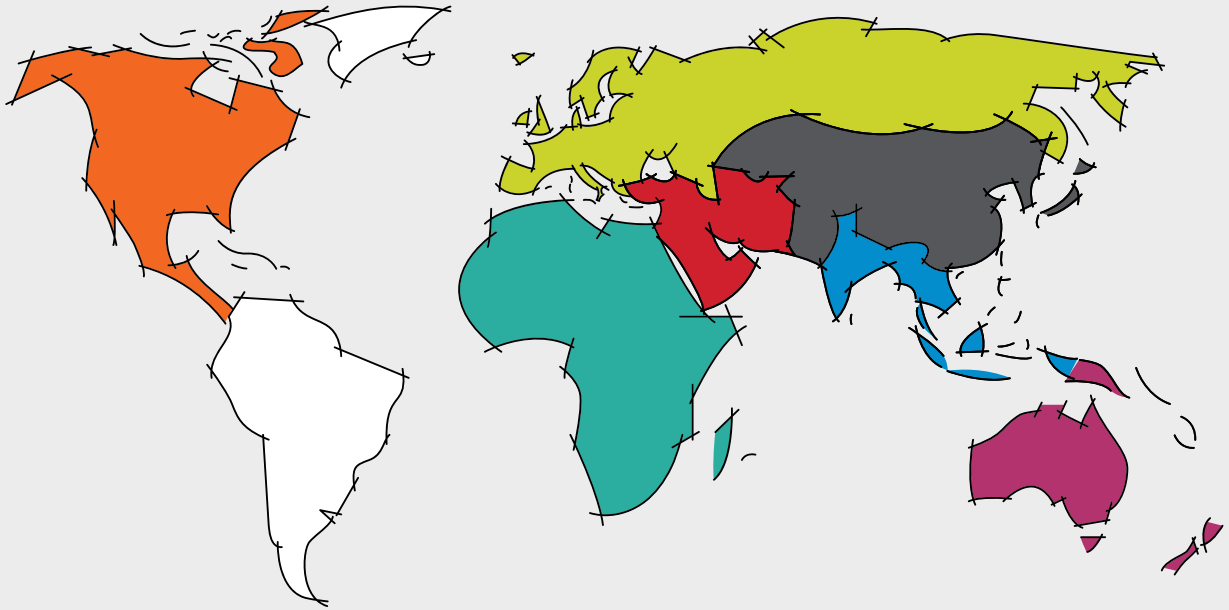


Each coloured region represents a section within the **Regional Intelligence** pages of this report.

EXECUTIVE SUMMARY

The construction industry, both regionally and globally, is a highly connected network that is currently in a state of stress. The headwinds driving this heightened stress are evident right throughout RLB's network of offices. RLB has identified common key challenges facing the global construction industry. These include: significant cost escalation; supply chain disruptions with global delivery uncertainty; shortages of construction professionals and skilled labour to deliver committed and future projects; climate change and aberrant weather events that are causing significant construction delays; and increasing levels of financial instability across the industry, including the resultant flow-on effect to suppliers and subcontractors. All of these downside risks are driving up construction prices and will not be resolved on a local level in the short-term.

During the second half of 2020, the pandemic exposed the vulnerabilities of global supply chains. Supply issues were expected to stabilise moving into 2022 as both global production resumed and supplies normalised. However, pandemic-induced supply shortages persist, affecting key materials such as timber, paint and coatings, aluminium, steel and cement, among others. These disruptions are due to multiple factors, particularly pent-up demand for key materials as global construction activity resumed. Further exacerbating the situation are disruptions in the movement of materials due to increased shipping congestion and delays at major Chinese ports. The delays have caused a spike in freight costs, which remain—on average—three to five times higher than 2020 levels.

The global construction market was making good progress in recovering from the challenges caused by the COVID-19 pandemic. However, since the beginning of 2022, the industry has experienced a high degree of short-term uncertainty globally, following heightened geopolitical tensions. The conflict in the Ukraine is exacerbating existing supply chain disruptions and placing even greater upward pressure on energy prices, driving up prices for key construction materials.

The military conflict also threatens to destabilise the wider region. Investor confidence is deteriorating, yet global inflationary pressures mean that monetary authorities will likely take action to tighten policy earlier than previously planned. There are also still prevailing risks associated with the pandemic, particularly in markets with a zero-COVID policy, such as China, where key provinces went into full lockdown earlier in the year, and other restrictions have been imposed in major cities including Shanghai, Beijing and Shenzhen.

The shadows of the Ukrainian conflict have reached across the globe. Despite this, the United States (US) and Canada seem to be delivering on their promises when it comes to growth in the construction market. According to GlobalData, the entire outlook for the sector over the next five years is positive, guaranteed in part by the willingness — expressed repeatedly by US President Joe Biden — to continue on the path of countercyclical infrastructure investment.

Biden's promise gives courage and confidence to the market, which is nevertheless facing several difficulties, including rising commodity prices and increasing inflation. Canada also expects to continue to grow in the coming years, mainly due to investment in residential construction and maintenance work on Canada's major infrastructure. This investment is one of the first items on the government's agenda, led by Prime Minister Justin Trudeau, albeit with potential compromises as the election result is finalised.

In the United Kingdom (UK), disruption is clear. The price of energy and oil, as well as many other key construction commodities such as steel, has risen again after a relative lull toward the end of 2021. The new normal, for now, is one of living with the impact of rapidly inflating construction input costs and general economy-wide costs. Although not unprecedented, these inflationary effects are nonetheless resulting in a re-think of procurement and development methods for construction projects, reminiscent of conditions observed over 40 years ago. Very few of the current senior personnel within the industry were employed when these conditions were last seen.

Having overcome the COVID-19 crisis, European Union (EU) members have no intention of giving up their hard-won growth. The Next Generation EU investment program and associated National Recovery and Resilience Plan calls for considerable investment in the infrastructure sector, which is seen as a tool for economic revitalisation. The infrastructure sector is also seen as a key mechanism through which to help complete the energy transition, which the EU has identified as a pillar for the continent's development.

In light of these investments, European markets should remain solid in the coming years, confirming growth trends that will—of course—be partly revised due to the Ukrainian crisis. Russia and Ukraine are important suppliers of steel, oil and gas to Europe but the conflict between the two countries and supply interruptions will contribute to higher energy and raw material costs. However, these higher prices will be, at least partly, compensated for by massive infrastructure spending , as well as national spending plans by governments. Italy alone is planning €60 billion in infrastructure investments from its National Recovery and Resilience Plan and other funds in the coming years. It is still too early to calculate exactly what the medium to long term impact of the conflict in Ukraine will be on Europe.

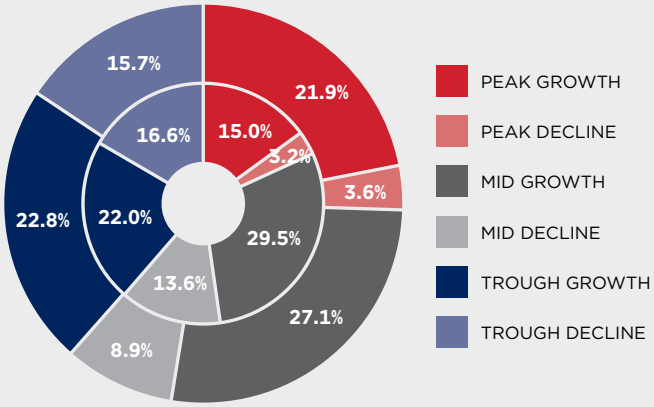
The same sentiments apply in Australia and New Zealand, where government-funded heavy and social infrastructure projects underpin a significant proportion of the future pipeline of construction activity.

Fresh shocks to global commodity prices and supply chains brought about by both the conflict in Ukraine and China's zero-COVID policy have resulted in a complex situation. This, in turn, is adding to domestic cost pressures across Asia. Given that the region has a good degree of economic openness, risks brought about by these global headwinds are considerable and translate to sizable construction price escalation.

107 Overton Road, Melbourne, Australia

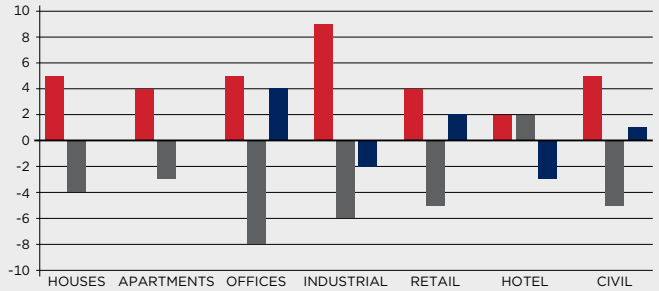
GLOBAL MARKET SECTOR ACTIVITY

NUMBER OF GLOBAL SECTORS



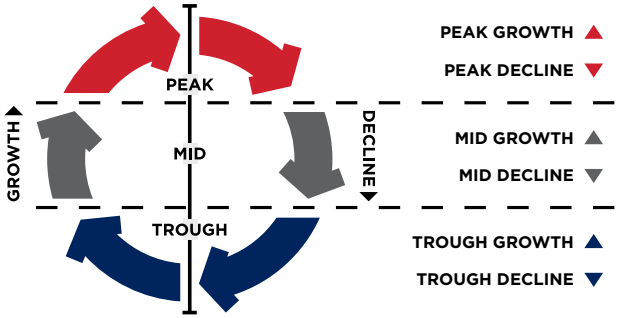
OUTER RING – MARKET SECTORS AS AT Q2 2022
INNER RING – MARKET SECTORS AS AT Q4 2021

GLOBAL - MARKET SECTOR ACTIVITY
NET SECTOR MOVEMENT FROM Q4 2021 TO Q2 2022



The movement for the last six months generally highlight a more positive sentiment within the global industry. The movement of sectors from the mid zone (in grey) to the peak zone (in red) highlight this lift in activity. Negative numbers represent falling numbers of cities within the zone and rising numbers are reflected in the positive numbers.

RLB MARKET SECTOR ACTIVITY CYCLE



Activity within the construction industry traditionally has been subject to volatile cyclical fluctuations. The RLB Market Activity Cycle (cycle) is a representation of the development activity cycle for the construction industry within the general economy.

Within the general construction industry, RLB considers seven sectors to be representative of the industry as a whole. These sectors are: houses, apartments, offices, industrial, retail, hotel and civil.

Each sector is assessed as to which of the three zones (peak, mid and trough) best represents the current status of the sector within the cycle, then further refined by identifying whether the current status is in a growth phase or a decline phase.

Since our last edition, there has been a small decline in market sentiment across the consolidated responses of 64 RLB and affiliate offices across the globe. Even with a movement of 28 sectors into the growth phase of the activity cycle, there was a negative movement of nine sectors from the peak zone downwards within the cycle.

Currently, 25% of all sectors are in the peak zone, which is up from 18% six months ago. 36% of sectors are in the mid zone, down from 43% previously reported, and the trough zone represents 38%, the same as previously reported. The trend globally is that the development cycle has moved downward again within the cycle. Almost all sectors have been impacted by the uncertainty and prevailing country responses to the COVID-19 pandemic.

Seven key sectors on which each office reports, the residential (both houses and apartments) apartment, industrial and civil (infrastructure) sectors have the greatest number of offices reporting these sectors to be within the peak zone.

With more than a third (38%) of all sectors within the trough zone, the medium and long-term challenges for the construction industry will be quite substantial and far-reaching. The converse to this is a significant number of sectors have moved from the decline phase to the growth phase. This indicates that movement upwards within the activity zones will occur in the foreseeable future if current economic conditions are maintained.

GLOBAL MARKET SECTOR ACTIVITY

Overview

The 'up' and 'down' arrows within the tables represent whether the sector is in a growth or decline phase. The colour of the arrow determines the zone within the cycle. The three colours identified in the cycle diagram (red, grey and blue) represent the peak, mid and trough zones of the cycle.

	HOUSES	APARTMENTS	OFFICES	INDUSTRIAL	RETAIL	HOTEL	CIVIL
AFRICA							
CAPE TOWN	▲	▲	▼	▲	▼	▲	▲
DURBAN	▲	▲	▼	▼	▲	▲	▲
GABORONE (BOTSWANA)	▲	▲	▲	▲	▲	▲	▲
JOHANNESBURG	▲	▲	▼	▲	▲	▲	▲
MAPUTO (MOZAMBIQUE)	▲	▲	▲	▲	▲	▲	▲
PORT LOUIS (MAURITIUS)							
PRETORIA							
MIDDLE EAST							
ABU DHABI	▲	▼	▲	▲	▼	▲	▲
DOHA	▲	▼	▼	▲	▼	▼	▼
DUBAI	▲	▼	▲	▲	▼	▲	▲
RIYADH	▲	▲	▲	▲	▲	▲	▲
NORTH ASIA							
BEIJING	▼	▼	▲	▼	▲	▼	▲
CHENGDU	▼	▲	▲	▼	▲	▲	▲
GUANGZHOU	▼	▲	▲	▲	▼	▼	▲
HONG KONG	▲	▲	▼	▲	▼	▼	▲
MACAU	▼	▲	▲	▼	▼	▼	▲
SEOUL	▲	▲	▼	▼	▼	▼	▼
SHANGHAI	▼	▼	▼	▼	▼	▼	▲
SHENZHEN	▼	▲	▼	▲	▼	▼	▲
SOUTHEAST ASIA							
CEBU	▲	▲	▲	▲	▲	▲	▲
HO CHI MINH CITY	▲	▲	▼	▲	▼	▼	▲
JAKARTA	▲	▲	▲	▲	▲	▲	▲
KUALA LUMPUR	▲	▲	▼	▲	▼	▲	▲
MANILA	▲	▲	▲	▲	▲	▲	▲
SINGAPORE	▲	▲	▲	▲	▼	▲	▲
AMERICA							
BOSTON	▲	▲	▲	▲	▲	▲	▲
CHICAGO	▲	▲	▼	▲	▼	▼	▲
DENVER	▲	▲	▲	▲	▼	▼	▲
HONOLULU	▲	▲	▼	▲	▼	▲	▲
LAS VEGAS	▲	▲	▼	▲	▼	▲	▲
LOS ANGELES	▲	▲	▲	▲	▼	▲	▲
NEW YORK	▲	▲	▼	▲	▼	▲	▲
PHOENIX	▲	▲	▼	▲	▲	▲	▼
PORTLAND	▲	▲	▲	▲	▲	▲	▲
SAN FRANCISCO	▲	▲	▲	▲	▼	▲	▲
SEATTLE	▲	▲	▼	▲	▲	▼	▲
WASHINGTON D.C.	▼	▲	▲	▼	▼	▲	▲

	HOUSES	APARTMENTS	OFFICES	INDUSTRIAL	RETAIL	HOTEL	CIVIL
CANADA							
CALGARY	▼	▲	▼	▲	▼	▼	▲
TORONTO	▼	▲	▲	▲	▲	▲	▲
AUSTRALIA							
ADELAIDE	▲	▲	▲	▲	▲	▲	▲
BRISBANE	▲	▲	▲	▲	▼	▲	▲
CANBERRA	▲	▼	▲	▲	▲	▲	▲
DARWIN	▲	▼	▼	▲	▼	▼	▲
GOLD COAST	▲	▲	▲	▲	▼	▲	▲
MELBOURNE	▲	▲	▼	▼	▼	▼	▲
PERTH	▲	▼	▼	▲	▲	▼	▲
SYDNEY	▲	▲	▼	▲	▼	▼	▲
TOWNSVILLE	▲	▼	▲	▲	▲		▲
NEW ZEALAND							
AUCKLAND	▼	▼	▼	▲	▼	▼	▲
CHRISTCHURCH	▲	▲	▼	▲	▼	▲	▲
WELLINGTON	▲	▲	▲	▲	▼	▼	▲
UNITED KINGDOM							
BIRMINGHAM	▲	▲	▲	▲	▲	▲	▲
BRISTOL	▲	▲	▼	▲	▼	▲	▲
LEEDS	▲	▲	▲	▲	▼	▲	▲
LONDON	▲	▲	▲	▲	▼	▲	▲
MANCHESTER	▲	▼	▲	▲	▼	▲	▲
SHEFFIELD	▲	▲	▲	▲	▼	▲	▲
THAMES VALLEY	▲	▲	▼	▲	▼	▲	▲
IRELAND & MAINLAND EUROPE							
BERLIN	▼	▼	▲	▲	▲	▲	▲
DUBLIN	▲	▲	▲	▲	▲	▲	▼
LISBON	▲	▲	▲	▲	▼	▼	▲
MADRID	▲	▲	▼	▲	▼	▲	▲
MILAN	▲	▲	▲	▲	▲	▲	▲
PARIS	▼	▲	▼	▲	▼	▼	▲

RLB TENDER PRICE INDEX

RLB's TPI forecast percentage uplift ranges depict not only a wide-ranging understanding of the bounds of the current price and cost problem but acknowledge the need to cope with contractor and subcontractor uncertainty over and above what has previously been the 'norm'. Globally, RLB offices are all reporting that they are receiving tender submissions in which costs are significantly higher than would have been expected last year. The spreads between the tenderers' bids have widened, and there is a clear reluctance on the part of bidders to fix prices for any length of time.

Where prices are fixed, there is additional costs being applied within the tenders' price for taking on the risk of pricing certainty. In the medium to long-term, that uncertainty will dissipate. However, the short-term problem for pricing estimators, is how to minimise cost volatility without compromising winning work and maintaining a full workbook of suitable projects. Running alongside this, RLB is advising clients on the most appropriate procurement solutions to assist in obtaining the most reasonable bid pricing. These procurement solutions are helping to ensure the most appropriate management of risk and minimising the current underlying pricing uncertainties.

RLB offices across the globe have highlighted the underlying global forces that are adding to local construction costs, additional to the traditional local inputs affecting construction pricing.

Africa

South Africa is dependent on global suppliers and is severely impacted by global issues. Supply chain and logistical issues are impacting Africa in similar ways to the rest of the world.

Due to the conflict in the Ukraine, consumables such as petrol and diesel have seen prices reach an all-time high in South Africa. This directly influences the rates received for direct contracts such as bulk earthworks contractors. It is also putting pressure on the general inflation rate of materials.

Steel and metal prices have increased significantly. This impacts all buildings, with cost increases seen in reinforcement, aluminium window frames, roof sheeting and the like.

Shipping delays are prolonging the delivery times of materials together with most imported items.

North Asia

Disruptions to logistics and supply chains were inevitable, with the lockdown of major cities and strict pandemic control measures in China. In the short-term, this is likely to induce inflationary pressures for consumer goods due to limited supply and panic stocking. Yet, if the current situation continues, economic activities might slow down as investment is discouraged.

Long-term, the weakened demand may put disinflationary pressure on the economy. Policymakers will need to strike a balance between controlling inflation and supporting the economic recovery from the COVID-19 pandemic.

Southeast Asia
Fresh shocks to global commodity prices and supply chains, brought about by both the conflict in Ukraine and China's zero-COVID policy, have resulted in a complex situation which is adding to domestic cost pressures in Southeast Asia. Given that the region has a good degree of economic openness, risks brought about by these global headwinds are considerable and translate into construction escalations.

In Malaysia, material prices showed signs of stabilising towards the end of 2021. However, the conflict in the Ukraine caused prices to surge due to a shortage of raw materials, a hike in crude oil prices and, by extension, transportation cost. The Real Estate and Housing Developers' Association has indicated that due to the external factors, construction costs are expected to rise 19% in 2022.

The shortage of foreign labour across the region is further compounded, with competition for the same pool of workers. A surge in demand in workers' home countries, and weaker currencies compared to other destination countries, are some challenges faced by selected markets. In Cambodia, the zero-COVID policy in China has restricted travel for Chinese skilled workers into the country as well.

Underlying inflationary pressures remain a risk over the medium-term, with projects in various markets trending over budget.

North America
Interest rate hikes by the Federal Reserve, geopolitical conflicts and the persisting impacts of COVID-19 that are continuing to disrupt global supply chains are all causing developers and owners to reconsider plans to advance projects in the feasibility stage. Uncertainty is ultimately influencing their decisions for projects to proceed or stall.

Supply chains for construction materials and equipment are still causing major concern. The ports of Los Angeles and Long Beach, significant thoroughfares for international economic trade, continue to experience issues with labour shortages. Although, this has started to correct itself and the back-up is starting to ease.

Nationally, labour shortages and unforeseen surges in demand are increasing costs for commodity materials such as structural steel, copper, aluminium and timber. Material lead times and general material prices continue to be challenging.

The availability of skilled labour, which was an issue even before the COVID-19 pandemic, does not appear to be alleviating itself anytime soon. There is simply not enough construction workers to keep up with the project demand across the country.

In Canada, global supply networks, which had already been badly disrupted during the first 18 months of the pandemic, are facing further disruption due to the conflict in Ukraine. With metals, raw materials, chemical goods, and machinery previously supplied by Russia and Ukraine, suppliers are experiencing procurement issues, causing increased cost and lead times as traditional supply chains have been cut.

Australia
Activity throughout Australia remains strong and is generally aligned to pre-pandemic levels.

While this is good news for the industry, the ongoing supply chain issues of rising materials and shipping costs, and labour and materials shortages across trades led to many cost spikes in the back half of 2021 and into 2022 (such as rebar, steel, timber and concrete). A shift in procurement mindset from contractors and subcontractors is being observed; they are becoming somewhat selective with tender opportunities, given the amount of activity in the marketplace, and with many at capacity.

Tender results also reflected these challenges. While pricing remained within expectation, it leant towards the upper band for most contractors involved in any tender.

Observations to date for 2022 include:

- There is volatility in the market, with suppliers unable to hold pricing due to high levels of supply and demand for steel, facade, other metals, timber products and joinery and general supply chain shipping.
- Tender validities are being qualified at 30/60 days versus 90/120 days.
- Key materials saw prices increase by as much as 20% in the back of half of 2021, with further increases in 2022.
- Lead times for some products (internationally) is traditionally 8 – 10 weeks; they are currently 16 – 20 weeks.
- External factors including the recent floods in the northern states and international sanctions due to the Russia – Ukraine conflict are adding further pressure to supply chains and pricing.

New Zealand

Building sector firms continue to grapple with worker shortages and supply chain disruptions in New Zealand.

Major global influences impacting the sector within New Zealand include:

- General economic inflation driven by oil and gas prices, supply chain disruption and international labour shortages.
- Falling value of the New Zealand Dollar.
- Historically high international commodity prices impacting domestic material costs.

United Kingdom

With widespread take-up of inoculation and boosters, COVID-19 is no longer such a problem for the construction industry. The mantle of disruption now hangs on the shoulders of the Ukraine conflict and its associated knock-on impacts. Global disruption in the price of energy, oil, and many other key commodities, including steel is clear. The price for commodities has risen again after a relative lull toward the end of 2021.

The new normal, for now, is one of living with the impact of rapidly inflating construction input costs and wider general economy-wide costs. Although not unprecedented, these inflationary effects are nonetheless resulting in a re-think of procurement and development methods for construction projects, reminiscent of conditions over 40 years ago, which few even senior people in the construction can say they have known. To refer to the inflationary effects as spikes suggests insight as to when production, distribution and availability issues are ‘normalised’. However, the more reasonable approach is to seek to understand how to operate withing the wide bounds of the possible longer-term outcomes.

RLB TENDER PRICE INDEX

RLB's Tender Price Index (TPI) annual percentage change showcases the movement in general construction cost inflation and escalation year-on-year.

The TPI annual percentage change for 2022 represents RLB's forecast of the movement of tendered construction costs for the industry as a whole, within the key cities of RLB's global network.

The RLB Tender Price Index is an indexed based representation of general construction escalation, calculated on a monthly basis, in key cities across the RLB network. Both historical and forecast escalation data is available from January 2001 through to December 2027 via the RLB website (www.rlb.com/ccc).

	2020	2021	2022 (F)	2023 (F)	2024 (F)	2025 (F)
AFRICA						
CAPE TOWN	5.7	8.2	NP	NP	NP	NP
DURBAN	4.5	8.2	14.8	6.6	NP	NP
GABORONE	3.3	3.1	4.1	NP	NP	NP
JOHANNESBURG	5.5	4.2	5.0	6.0	NP	NP
MIDDLE EAST						
ABU DHABI	1.6	1.9	5.1	4.5	4.5	3.5
DOHA	2.2	2.9	5.2	4.9	3.9	NP
DUBAI	1.6	1.9	5.1	4.5	4.5	3.5
RIYADH	10.4	8.2	7.4	4.8	3.8	2.9
NORTH ASIA						
BEIJING	1.5	5.0	3.0	2.0	2.0	2.0
CHENGDU	2.0	3.0	3.0	3.0	3.0	3.0
GUANGZHOU	0.0	5.9	4.0	3.0	3.0	3.0
HONG KONG	(3.8)	5.3	6.6	4.0	4.0	4.0
MACAU	(6.0)	(2.0)	0.5	2.0	2.0	2.0
SEOUL	3.8	14.0	6.6	2.0	1.9	1.8
SHANGHAI	2.5	7.6	4.5	4.0	4.0	3.0
SHENZHEN	0.0	5.0	4.0	3.0	3.0	3.0
SOUTHEAST ASIA						
HO CHI MINH CITY	1.6	8.8	8.8	3.0	1.6	1.6
JAKARTA	3.0	5.0	5.1	NP	NP	NP
KUALA LUMPUR	0.0	6.1	3.0	NP	NP	NP
SINGAPORE	7.0	10.0	6.5	3.0	3.0	3.0
AMERICA						
BOSTON	3.1	9.9	9.0	7.5	7.0	6.0
CHICAGO	(1.3)	9.6	7.0	3.0	4.0	5.0
DENVER	1.3	5.6	8.4	7.0	6.5	6.0
HONOLULU	1.2	4.0	5.1	6.0	7.0	5.0
LAS VEGAS	1.5	8.0	7.0	6.0	5.5	5.0
LOS ANGELES	3.2	8.0	6.0	5.0	4.0	4.0
NEW YORK	3.2	8.9	9.5	7.0	7.5	6.5
PHOENIX	1.3	8.6	7.1	5.5	3.5	3.5
PORTLAND	1.1	8.4	6.5	5.5	5.0	4.5
SAN FRANCISCO	3.6	7.2	5.6	5.0	4.8	4.5
SEATTLE	1.7	10.8	8.5	3.5	3.5	3.5
WASHINGTON D.C.	2.6	8.2	7.5	6.0	6.0	5.5

	2020	2021	2022 (F)	2023 (F)	2024 (F)	2025 (F)
CANADA						
CALGARY	4.5	9.8	5.5	4.5	4.0	4.0
TORONTO	6.0	13.5	9.0	5.0	6.0	5.5
AUSTRALIA						
ADELAIDE	0.2	7.1	4.8	3.8	3.0	3.0
BRISBANE	(4.1)	9.6	10.5	5.1	4.1	3.0
CANBERRA	3.0	3.8	5.0	4.0	3.5	3.5
DARWIN	0.8	1.2	4.0	5.0	4.0	4.0
GOLD COAST	(4.5)	10.5	11.5	5.5	3.0	3.0
MELBOURNE	1.0	3.5	8.0	4.0	3.5	3.5
PERTH	1.5	13.5	9.0	5.0	4.0	3.5
SYDNEY	0.0	4.1	6.9	3.9	3.5	3.5
TOWNSVILLE	1.0	10.4	12.6	5.5	3.0	3.0
NEW ZEALAND						
AUCKLAND	4.0	8.5	7.5	5.0	4.0	3.0
CHRISTCHURCH	1.0	8.5	7.0	5.0	3.5	3.0
WELLINGTON	3.0	6.0	4.0	3.0	3.0	3.0
UNITED KINGDOM						
BIRMINGHAM	0.0	3.5	5.5	5.0	4.5	4.0
BRISTOL	0.5	3.5	7.0	2.8	2.5	2.3
LEEDS	2.8	3.2	6.5	4.0	3.8	3.5
LONDON	0.0	7.2	6.0	5.0	4.0	3.5
MANCHESTER	2.5	6.0	7.0	5.5	4.0	4.0
SHEFFIELD	2.6	3.2	6.5	4.0	3.8	3.5
THAMES VALLEY	0.0	3.8	5.0	5.0	4.0	3.0

RLB CRANE INDEX®

Overview

In September 2012, the Rider Levett Bucknall Oceania Research and Development and communication teams created the RLB Crane Index® as a simple insight into the construction sector's health in Australia. It was based on the theory that cranes in the sky supported the construction industry, which is a significant contributor to Australia's economic growth.

The RLB Crane Index® has now grown and is published biannually in Australia, New Zealand, North America, North Asia, South Asia, Southern Africa, England and Europe, as well as annually in the Middle East. The Index currently tracks the number of cranes in key cities within the RLB network of offices across the globe. It is anticipated that during the coming year further RLB and affiliate offices will be contributing crane numbers to extend the coverage across the globe.

The RLB Crane Index® provides a simplified measure of the current state of the construction industry's workload in each location. Each RLB office physically counts all fixed cranes on the city's skyline. Because of the geographic and topographical nature of each city counted, not all areas counted are the same. The same area is counted within a city for each count, but the areas are different for each city.

Globally, the trend for crane numbers in 2022 seems to be that crane activity is growing post lockdowns and the start of 'normality' across the regions.

AUSTRALIA CITIES	Q3 2020	Q1 2021	Q3 2021	Q1 2022	MOVEMENT % CHANGE
ADELAIDE	10	10	11	16	45.5%
BRISBANE	50	71	83	79	-4.8%
CANBERRA	27	26	33	31	-6.1%
CENTRAL COAST	5	9	10	10	0.0%
DARWIN	-	-	-	2	-
GOLDCOAST	34	29	35	40	14.3%
HOBART	-	-	-	-	-
MELBOURNE	177	193	180	192	6.7%
NEWCASTLE	13	9	9	12	33.3%
PERTH	36	30	37	55	48.6%
SUNSHINE COAST	15	16	13	16	23.1%
SYDNEY	297	286	295	348	18.0%
WOOLONGONG	11	12	12	12	0.0%
AUSTRALIAN CITIES	**675**	**691**	**718**	**813**	**13.2%**

NEW ZEALAND CITIES	Q3 2020	Q1 2021	Q3 2021	Q1 2022	MOVEMENT % CHANGE
AUCKLAND	77	78	96	108	12.5%
CHRISTCHURCH	14	15	14	12	-14.3%
DUNEDIN	-	-	1	1	0.0%
HAMILTON	3	6	4	3	-25.0%
QUEENSTOWN	11	15	8	8	0.0%
TAURANGA	3	4	5	3	-40.0%
WELLINGTON	15	18	16	15	-6.3%
NEW ZEALAND CITIES	**123**	**136**	**144**	**150**	**4.2%**

AMERICAN CITIES	Q3 2020	Q1 2021	Q3 2021	Q1 2022	MOVEMENT % CHANGE
BOSTON	12	13	12	9	-25.0%
CHICAGO	14	12	7	3	-57.1%
DENVER	18	22	15	21	40.0%
HONOLULU	8	10	6	6	0.0%
LAS VEGAS	4	2	2	2	0.0%
LOS ANGELES	41	43	51	51	0.0%
NEW YORK	12	10	10	12	20.0%
PHOENIX	16	9	2	2	0.0%
PORTLAND	27	23	15	12	-20.0%
SAN FRANCISCO	24	11	13	15	15.4%
SEATTLE	43	43	39	37	-5.1%
WASHINGTON D.C.	38	45	35	26	-25.7%
UNITED STATES CITIES	**257**	**243**	**207**	**196**	**-5.3%**

CANADA CITIES	Q3 2020	Q1 2021	Q3 2021	Q1 2022	MOVEMENT % CHANGE
CALGARY	34	35	32	31	-3.1%
TORONTO	124	208	225	252	12.0%
CANADIAN CITIES	**158**	**243**	**257**	**283**	**10.1%**
NORTH AMERICAN CITIES	**415**	**486**	**464**	**507**	**3.2%**

MIDDLE EAST CITIES	Q4 2019		MOVEMENT % CHANGE
DUBAI	1,345	-	
ABU DHABI	257	-	
DOHA	401	-	
MIDDLE EASTERN CITIES	**2,003**	**-**	

AFRICAN CITIES	Q1 2020	Q3 2021	MOVEMENT % CHANGE
DURBAN	8	29	
CAPE TOWN	29	21	
STELLENBOSCH	6	2	
JOHANNESBURG	36	30	
PRETORIA	15	18	
SOUTH AFRICAN CITIES	**94**	**100**	

HONG KONG	Q4 2020		Q4 2021		MOVEMENT % CHANGE
HONG KONG ISLAND	23	-	37	-	60.9%
KOWLOON	70	-	63	-	-10.0%
NEW TERRITORIES	63	-	82	-	30.2%
HONG KONG CITIES	**156**	**-**	**182**	**-**	**16.7%**

SOUTH ASIA	Q1 2020	Q3 2020	Q1 2021	Q3 2021	Q1 2022	-MOVEMENT % CHANGE
SINGAPORE	378	445	490	466	520	11.6%
JAKARTA		99	113	74	49	-33.8%
HO CHI MINH CITY		115	106	120	122	1.7%
KUALA LUMPUR		410	469	443	314	-29.1%
SOUTH ASIA CITIES	**378**	**1,069**	**1,178**	**1,103**	**1,005**	**-8.9%**

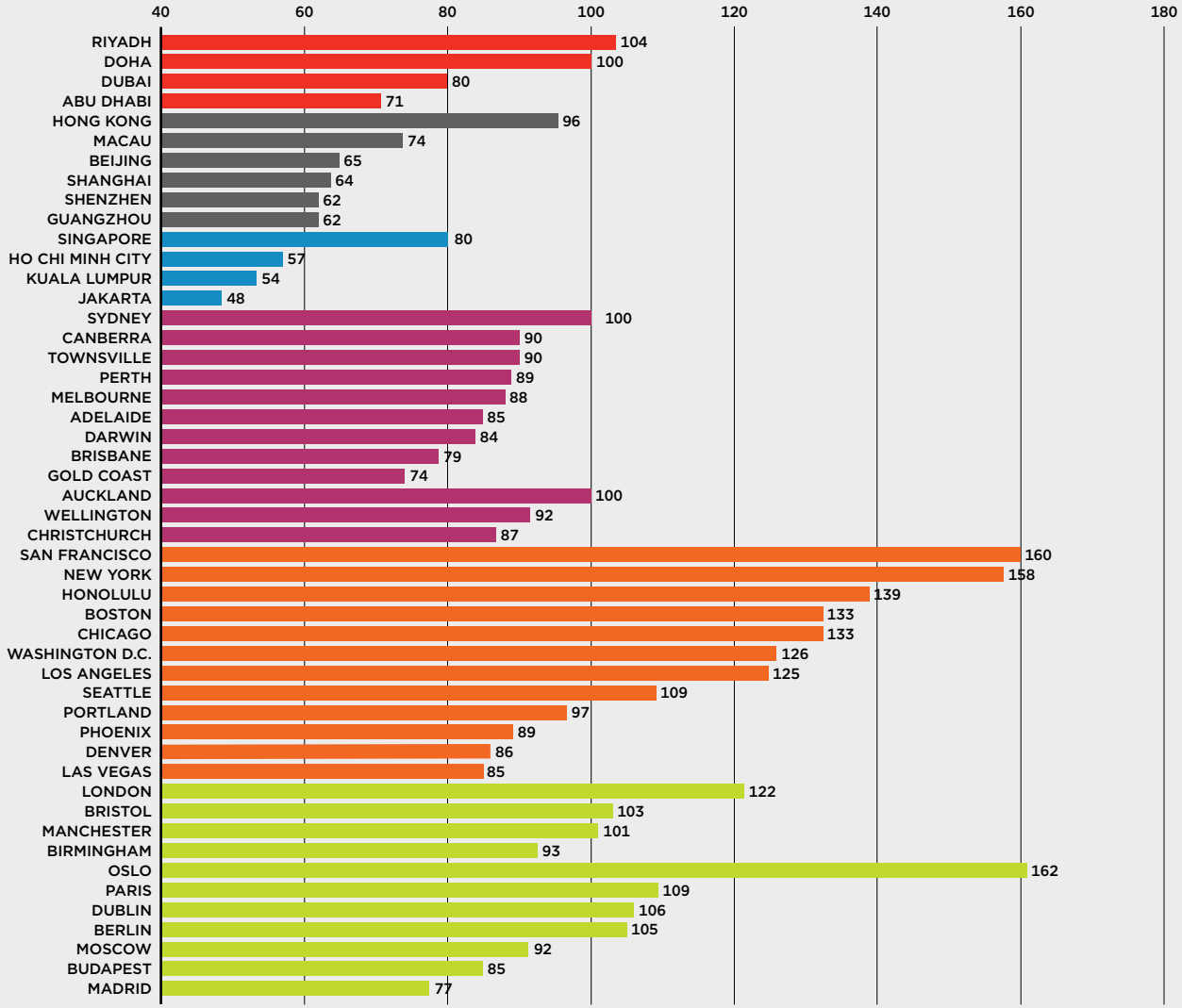
UNITED KINGDOM CITIES	Q3 2020	Q1 2021	Q3 2021		MOVEMENT % CHANGE
BIRMINGHAM	18	6	21	-	250.0%
BRISTOL	16			-	-
LEEDS	21	9	11	-	22.2%
LIVERPOOL	6	6	6	-	0.0%
LONDON	184	183	189	-	3.3%
MANCHESTER	16	38	32		-15.8%
SHEFFIELD	10	5	10	-	100.0%
UNITED KINGDOM CITIES	**255**	**247**	**269**	**-**	**-3.1%**

GLOBAL CONSTRUCTION COST RELATIVITY INDEX

RLB's Construction Cost Relativity Index identifies the relative cost of constructing similar buildings across the globe. The Index is based on the local costing of standard building models/basket of goods. These are costed globally, and within regions, using the same quantities and similar specifications. They are costed in local currencies and relativities are calculated using a combination of statistical methods including:

- Conversion into one currency method by converting local currency model costs using USD and International Monetary Fund's published Purchasing Power Parity (PPP)
- RLB developed EKS multilateral index
- RLB Relativity Factor, a weighted sum of 'one currency' results.

The resultant index highlights the relativity in construction costs between key global cities at Q2 2022.



REGION	PREVIOUS RANKING	CURRENT RANKING	CITY	MOVEMENT	POSITION
MIDDLE EAST	25	14	RIYADH	▲	11
	15	19	DOHA	▼	4
	36	37	DUBAI	▼	1
	41	42	ABU DHABI	▼	1
NORTH ASIA	19	21	HONG KONG	▼	2
	40	41	MACAU	▼	1
	44	43	BEIJING	▲	1
	43	44	SHANGHAI	▼	1
	45	45	SHENZHEN	▶	0
	46	46	GUANGZHOU	▶	0
SOUTH ASIA	38	36	SINGAPORE	▲	2
	48	47	HO CHI MINH CITY	▲	1
	47	48	KUALA LUMPUR	▼	1
	49	49	JAKARTA	▶	0
AUSTRALIA	17	18	SYDNEY	▼	1
	23	25	CANBERRA	▼	2
	33	26	TOWNSVILLE	▲	7
	26	27	PERTH	▼	1
	28	29	MELBOURNE	▼	1
	35	33	ADELAIDE	▲	2
	30	35	DARWIN	▼	5
	39	38	BRISBANE	▲	1
	42	40	GOLD COAST	▲	2
NEW ZEALAND	27	17	AUCKLAND	▲	10
	21	23	WELLINGTON	▼	2
	34	30	CHRISTCHURCH	▲	4
AMERICA	2	2	SAN FRANCISCO	▶	0
	3	3	NEW YORK	▶	0
	4	4	HONOLULU	▶	0
	5	5	BOSTON	▶	0
	6	6	CHICAGO	▶	0
	7	7	WASHINGTON, D.C.	▶	0
	8	8	LOS ANGELES	▶	0
	13	11	SEATTLE	▲	2
	18	20	PORTLAND	▼	2
	24	28	PHOENIX	▼	4
	31	31	DENVER	▶	0
	32	34	LAS VEGAS	▼	2
UNITED KINGDOM	9	9	LONDON	▶	0
	14	15	BRISTOL	▼	1
	16	16	MANCHESTER	▶	0
	20	22	BIRMINGHAM	▼	2
EUROPE	1	1	OSLO	▶	0
	10	10	PARIS	▶	0
	11	12	DUBLIN	▼	1
	12	13	BERLIN	▼	1
	22	24	MOSCOW	▼	2
	29	32	BUDAPEST	▼	3
	37	39	MADRID	▼	2

Katherine Towers, Sandton, Johannesburg, South Africa

AFRICA

CURRENT MARKET CONDITIONS

The construction industry's market activity has picked up over the last six months compared to that since the outbreak of COVID-19. COVID-19 waves and lockdowns definitely impacted construction activity. However, Africa's construction industry was not shut down, apart from during the first hard lockdown where only stage three activities were permitted.

The residential and industrial sectors have experienced major activity increases. With the need for office space substantially declining, the development of commercial buildings has taken a dive. Although the need for office space is low, some mixed-use developments, that incorporate a small volume of office space, continue. These mixed-use developments also encompass buildings with residential and strip retail spaces.

For the foreseeable future it is expected that industrial and residential developments will increase significantly, while commercial developments are expected to remain low.

Some regional-specific factors have been experience. For example, in Kwa Zulu Natal, last year's riots led to the implementation of government funded programs that have increased construction activities, particularly in retail. It is envisaged that the recent floods in Kwa Zulu Natal will increase civil works dramatically to restore damaged infrastructure.

CONSTRUCTION COST IMPACT

Construction escalation has seen a major increase over the past six months. As published by South Africa's Department of Statistics in the monthly Contract Price Adjustment Provision indices, some work groups (such as work group 125 - Metal roofing (aluminium)) have seen a major cost increase. In comparison, work group 118 - Masonry, has seen a slight cost decrease. Total construction cost increased by 0.9% month-on-month.

Economic factors, like price increases in building materials and consumables such as diesel for plant, are expected to influence the construction industry going forward. With the Rand being very volatile and sensitive to fluctuations in the Pound, Dollar and Euro, it is very expensive to import building materials. Therefore, there has been a major shift to using locally manufactured products, such as tiles, to reduce lead time and import costs.

The riots and flood in Kwa Zulu Natal continue to plague the construction industry, causing market volatility for construction material.

Labour availability is not a significant problem in Africa; the unemployment rate is the highest it has ever been since data collection commenced in 2008.

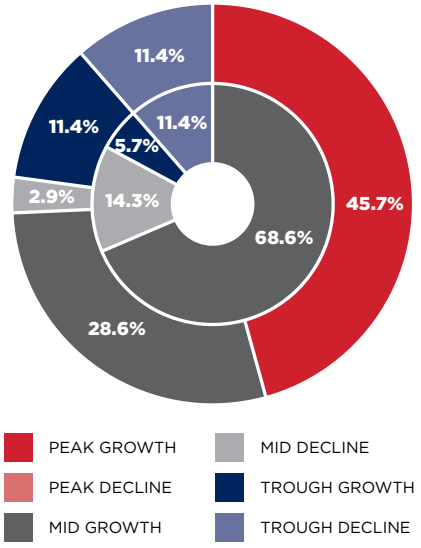
General inflation continues to play a role, increasing from 3.3% in 2020 to 4.5% in 2021. It is expected that general inflation in 2022 will average above 5%.

RLB TPI ANNUAL % MOVEMENT

	2022		2023	
	PREV.	CURR.	PREV.	CURR.
DURBAN	*9.4%*	**14.8%**	*NP*	**6.6%**
GABORONE	*4.1%*	**4.1%**	*NP*	**NP**
JOHANNESBURG	*NP*	**5.0%**	*NP*	**6.0%**

PREVIOUS = FORECAST @ Q4 2021
CURRENT = FORECAST @ Q2 2022

MARKET SECTOR ACTIVITY



OUTER RING – MARKET SECTORS AS AT Q2 2022
INNER RING – MARKET SECTORS AS AT Q4 2021

DGDA Phase II, Riyadh, Saudi Arabia

MIDDLE EAST

CURRENT MARKET CONDITIONS

Within the United Arab Emirates, rising oil price have directly impacted the UAE economy with increased revenues. The increase in revenues has Increased in an increase in the feasibility of projects, especially in the high end and luxury residential market. Large scale infrastructure projects (ie Etihad Rail) are contributing to increased market activity.

Current tourism activity is outpacing pre-COVID-19 levels, with hotel occupancy rates at one of the world's highest. The Hospitality, Entertainment, Tourism, and Aviation sectors are all seeing increasing positive sentiment.

Tender activity is returning to pre-COVID levels with projects that were stalled during COVID are being re-started as market viability returns.

The Real Estate market across most sectors is seeing increasing values and rents. The UAE continues to face high competition for skilled labour, both regionally and globally.

Fee and margin levels could start increasing as suppliers get busier and can afford to be more selective in what projects to undertake

Within Qatar, Increased energy prices also are having a positive effect on Qatar's revenues with new energy supply deals with countries previously supplied by Russia

General activity is concentrated on preparation for the FIFA World Cup Qatar 2022. It is difficult to predict activity rates after the tournament, but some major schemes are on hold until the event finishes.

CONSTRUCTION COST IMPACT

Across the region, higher oil prices are having a double impact, increasing revenues are being offset by the increasing cost of regional material production and transport generally. The reliance on imported materials is increasing pressure on prices

Global inflationary pressures are beginning to creep into the market. Inflation in 2022 is increasing, halting the relative steady trend of the previous years. Increases in the region's supply chain costs are a major factor in overall rising construction costs.

General cost of living increases, mostly due to rising food and accommodation prices, will be passed on through ultimately onto construction prices and local manufactured products.

The demand for skilled labour, professional services and materials is creating continued pressure on regional prices and supply

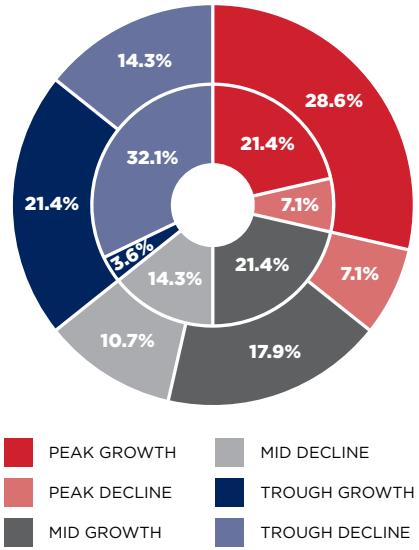
Within Qatar, projects that are required to be completed before the World Cup are creating a logistical bottle neck causing increasing prices.

RLB TPI ANNUAL % MOVEMENT

	2022		2023	
	PREV.	CURR.	PREV.	CURR.
ABU DHABI	*2.0%*	**5.1%**	*2.0%*	**4.5%**
DOHA	*2.0%*	**5.2%**	*2.0%*	**4.9%**
DUBAI	*2.5%*	**5.1%**	*3.0%*	**4.5%**
RIYADH	*5.0%*	**7.4%**	*6.5%*	**4.8%**

PREVIOUS = FORECAST @ Q4 2021
CURRENT = FORECAST @ Q2 2022

MARKET SECTOR ACTIVITY



OUTER RING – MARKET SECTORS AS AT Q2 2022
INNER RING – MARKET SECTORS AS AT Q4 2021

Snowstar Shanghai, Shanghai, China

NORTH ASIA

CURRENT MARKET CONDITIONS

The COVID-19 pandemic continued to have a lasting impact on the economy of various regions throughout North Asia.

In the first quarter of 2022, there was a 2.6% growth in real estate investment in Shanghai. Investments in residential and office projects grew, while a drop in commercial project investment was observed. The local government imposed a lockdown in Shanghai in response to the COVID-19 Omicron variant outbreak, leading to disruption of construction progress. The lockdown and strict virus controls forced residents to stay in their home. As a result, most construction activity slowed or was suspended in early 2022. Work on some mega infrastructure projects gradually resumed from May 2022.

As a result of weak domestic and external demand, Hong Kong's Gross Domestic Product (GDP) decreased by 4.0% in real terms in the first quarter of 2022 year-on-year. The fifth wave of the COVID-19 outbreak in early 2022 posed difficulties for Hong Kong's construction industry, with border closures, mandatory quarantine and delays in government approvals. Decreases in construction output year-on-year in real terms since the fourth quarter of 2021 has continued into early 2022. It is expected that publicly funded projects will continue as the main contributor to the gross construction output in coming quarters.

The construction industry remains uncertain in South Korea. With pessimistic business sentiment, construction activities are sluggish. However, it is expected that the new government will relax housing regulations. Opportunities will arise for new building and renovation projects amid the real estate-friendly policies. Meanwhile, the escalating price of construction materials and supply chain disruptions will continue to hinder the recovery of construction investment in South Korea.

CONSTRUCTION COST IMPACT

In the first quarter of 2022, prices of major construction materials in Shanghai fell significantly. The average price of cement, rebar, concrete and structural steel dropped by 20%, 8%, 7.8% and 7.5% respectively compared to the previous quarter. Meanwhile, average prices of aluminum rose by 6% in same period. It is expected that the prices of major construction materials will hover within a narrow range while the disruptions to production will offset the impact on the prices from weak demand in the second quarter of 2022. In line with global inflationary pressures and disrupted supply chains following the pandemic and global geopolitical tensions, it is anticipated that the price of major construction materials will rise in the long-term.

In Hong Kong, construction material and labour costs surged in first half of 2022. Prices of major construction materials such as concrete and rebar rose significantly in view of the rising inflation rates and energy prices. In second half of the year, it is expected that tender prices will continue to rise moderately.

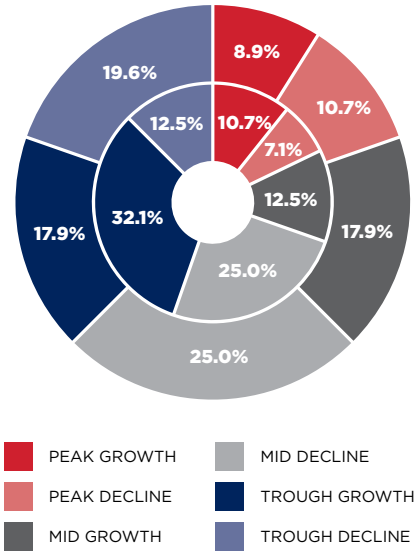
In comparison with the same period last year, the prices of construction materials and labour in South Korea have shown various degrees of increase. Rebar prices rose by 43% compared to a year ago while bituminous coal, a major fuel for the cement industry, more than doubled from January to March this year in South Korea. The construction industry has been impacted by the COVID-19 pandemic due to its heavy reliance on foreign workers. Restrictions on the mobility of foreign workers, which reduce labour supply, will inevitably lead to higher labour cost.

RLB TPI ANNUAL % MOVEMENT

	2022		2023	
	PREV.	CURR.	PREV.	CURR.
BEIJING	*2.0%*	**3.0%**	*2.0%*	**2.0%**
CHENGDU	*3.0%*	**3.0%**	*3.0%*	**3.0%**
GUANGZHOU	*4.0%*	**4.0%**	*3.0%*	**3.0%**
HONG KONG	*4.0%*	**6.6%**	*4.0%*	**4.0%**
MACAU	*(1.0)%*	**0.5%**	*2.0%*	**2.0%**
SEOUL	*1.1%*	**6.6%**	*2.0%*	**2.0%**
SHANGHAI	*4.0%*	**4.5%**	*4.0%*	**4.0%**
SHENZHEN	*3.0%*	**4.0%**	*3.0%*	**3.0%**

PREVIOUS = FORECAST @ Q4 2021
CURRENT = FORECAST @ Q2 2022

MARKET SECTOR ACTIVITY



OUTER RING – MARKET SECTORS AS AT Q2 2022
INNER RING – MARKET SECTORS AS AT Q4 2021

Southern Star, Tanauan, Philippines

SOUTH ASIA

CURRENT MARKET CONDITIONS

With severity of COVID-19 cases largely under control, most countries in the South Asia region have lifted almost all COVID-19 restrictions and resumed economic activities. Apart from Myanmar, the construction markets in the region are recovering from COVID-related setbacks, with reopening borders expected to further ease labour shortages.

Construction activities have resumed in 2022. Projects that were put on hold in the last two years due to lack of demand are moving forward, despite higher costs compared to pre-pandemic times. In Malaysia, there is a huge uptick in demand for small-to-medium industrial developments, factories, infrastructure and housing projects. In Indonesia, demand is being driven by the residential and industrial sectors. Housing projects are also driving the Cambodia market. In general, all sectors are starting to show growth compared to 2021.

In Singapore, construction demand for 2021 was 42% higher than the preceding year and prospects are expected to further improve in 2022, with forecasts similar to the pre-COVID range. The construction industry in Indonesia is on track to rebound with an annual average growth of 5.2% for 2022-2025. In Vietnam, the market grew by 7.1% in the first quarter of 2022, an improvement from the same period in 2021, and is set to remain positive for the rest of 2022.

In Myanmar, the military coup in February 2021 and resulting political unrest has had a considerable impact on foreign investment inflow and construction progress. The depreciation of Myanmar's currency has also resulted in many projects halting operations due to the high cost of raw materials.

CONSTRUCTION COST IMPACT

Over the past six months, factors affecting construction escalation in the region were mainly due to the impact of the COVID-19 pandemic—with the exception of Myanmar. These factors include the shortage of labour, stiff global competition for resources, higher shipping charges, the power crunch in China and India, and market uncertainties.

Tender prices are expected to continue increasing in 2022 due to the persistence of issues faced in 2021. In addition, the conflict in Ukraine is likely to bring about more uncertainty in global trade and economy. Furthermore, the sporadic supply chain disruptions due to stringent lockdowns in Chinese cities are likely to add to tender price pressures in 2022.

While the freeze on foreign worker recruitment has been lifted in many countries, labour supply remains an issue. Spikes in COVID-19 cases in foreign worker source countries is delaying supply inflow. This labour market pressure is expected to ease progressively this year.

The average market prices of key construction materials was highly volatile in 2021 and is likely to remain on an upward trend in the near term. Rising oil prices and shipping freight backlogs worldwide also continue to drive prices up.

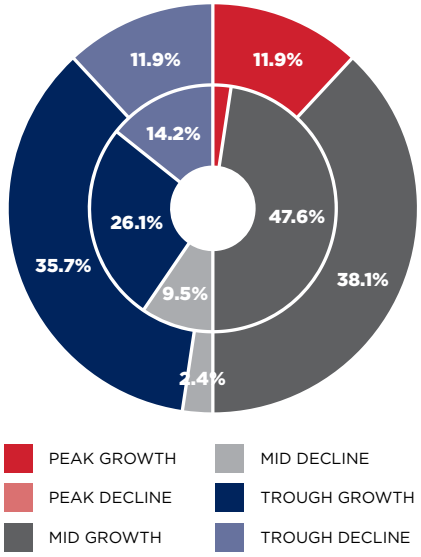
In Myanmar, the political instability has resulted in construction cost contraction of about 8% in 2021 compared to 2019. A further contraction of 3% is expected in 2022.

RLB TPI ANNUAL % MOVEMENT

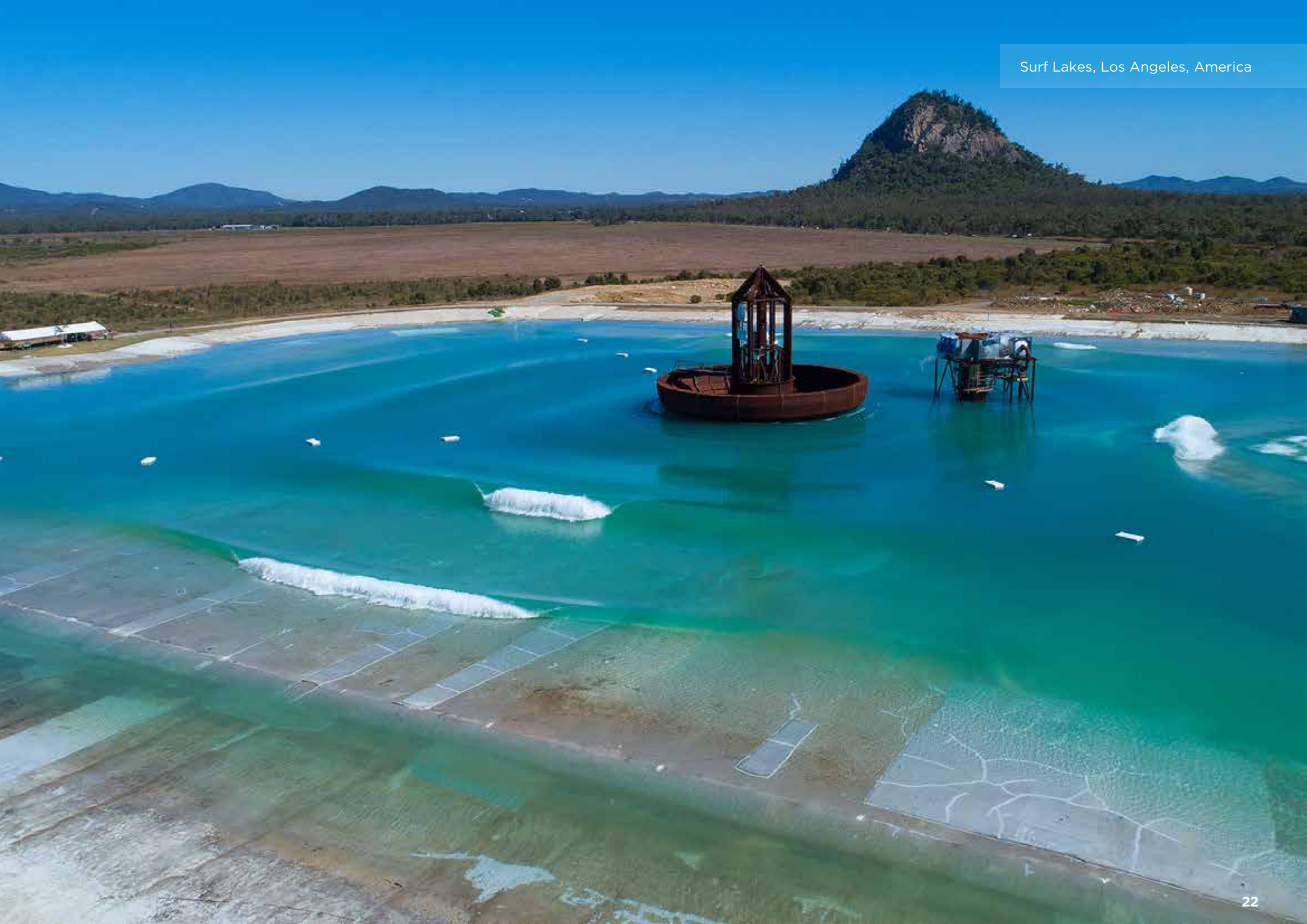
	2022		2023	
	PREV.	CURR.	PREV.	CURR.
HO CHI MINH CITY	*3.0%*	**8.8%**	*3.0%*	**3.0%**
JAKARTA	*NP*	**5.1%**	*NP*	**NP**
KUALA LUMPUR	*NP*	**3.0%**	*NP*	**NP**
SINGAPORE	*5.0%*	**6.5%**	*3.0%*	**3.0%**

PREVIOUS = FORECAST @ Q4 2021
CURRENT = FORECAST @ Q2 2022

MARKET SECTOR ACTIVITY



OUTER RING – MARKET SECTORS AS AT Q2 2022
INNER RING – MARKET SECTORS AS AT Q4 2021



Surf Lakes, Los Angeles, America

NORTH AMERICA

CURRENT MARKET CONDITIONS

Entering 2022, the construction industry in North America faced two significant issues: rising costs, and shortages of both labour and materials. The Federal Reserve began raising interest rates, with the first increase taking place in March 2022. All things being equal, higher interest rates frustrate construction activity by increasing borrowing costs. The conflict in the Ukraine has exacerbated materials shortages, and COVID-related lockdowns in China have placed renewed pressure on supply chains.

Fortunately, it is not all doom and gloom for the industry. Infrastructure and excess stimulus funding will bolster public construction spending, and the residential market continues to surge. Contractor confidence has understandably fallen in recent months, but the industry remains surprisingly upbeat about the future.

The Infrastructure Investment and Jobs Act (IIJA) inputs more than US$550 billion in new federal investment to upgrade the country's infrastructure over five years. Additionally, the IIJA has tax incentives designed to promote partnerships with cities and states, as well as encourage private investments.

According to analysis of federal spending data, spending on non-residential construction projects by the Associated General Contractors of America declined for the second month in a row in April 2022. Association officials said workforce shortages are suppressing the volume of construction activity and called for measures to encourage more people to pursue high-paying construction careers.

In Alberta, the 2022 Capital Plan will invest approximately US$21 billion in the construction of roads, schools, and hospitals over a three-year period. While in Ontario, housing continues to be major economic engine. This is the case not only in the province's major urban areas, but also in smaller communities where an influx of big-city migrants sustains solid demand. The Greater Toronto Area (GTA) apartment market continues to perform well because their price points allow additional buyers to enter the market. The GTA housing sales are expected to surpass the long-year-average in 2022.

CONSTRUCTION COST IMPACT

Global unrest caused by the COVID-19 pandemic and the conflict in the Ukraine will ensure that uncertainty remains in the North American construction market. Supply chain disruptions continue to put pressure on lead times and schedules, cause delays, and increase costs, resulting in shorter bid validity periods.

A major issue is the availability of skilled labour, which existed pre-COVID. This issue will not be alleviated any time soon. There is simply not enough construction workers to keep up with project demand. Material cost increases and unstable product availability are causing cost increases and project delays; some products are not available when needed.

The US central bank already had signalled plans for significant increases in the benchmark borrowing rate in coming months. However, these rate rises might have to be even more aggressive than originally estimated.

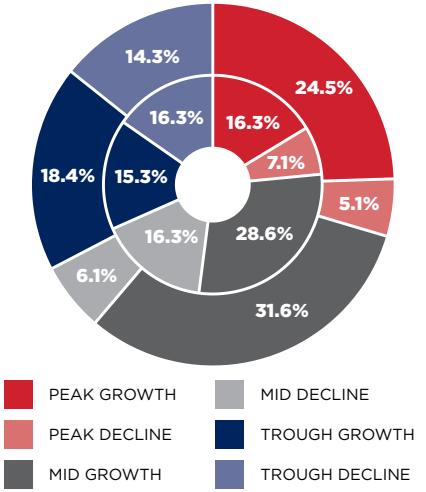
Energy prices have soared 34.6% over the past year, the fastest since September 2005. Food jumped 10.1% and the cost of fuel oil more than doubled, jumping 106.7%—the largest increase in the history of the Consumer Price Index (CPI), which dates to 1935, all fuelling the increase in construction costs.

RLB TPI ANNUAL % MOVEMENT

	2022		2023	
	PREV.	CURR.	PREV.	CURR.
BOSTON	*5.5%*	**9.0%**	*5.5%*	**7.5%**
CHICAGO	*3.0%*	**7.0%**	*3.0%*	**3.0%**
DENVER	*4.0%*	**8.4%**	*3.8%*	**7.0%**
HONOLULU	*3.5%*	**5.1%**	*5.0%*	**6.0%**
LAS VEGAS	*4.0%*	**6.0%**	*3.5%*	**6.0%**
LOS ANGELES	*4.5%*	**6.0%**	*4.0%*	**5.0%**
NEW YORK	*5.0%*	**9.5%**	*5.0%*	**7.0%**
PHOENIX	*5.0%*	**7.1%**	*4.5%*	**5.5%**
PORTLAND	*5.0%*	**6.5%**	*5.0%*	**5.5%**
SAN FRANCISCO	*5.0%*	**5.6%**	*5.0%*	**5.0%**
SEATTLE	*3.0%*	**8.5%**	*3.5%*	**3.5%**
WASHINGTON D.C.	*4.0%*	**7.5%**	*4.5%*	**6.0%**
CANADA				
CALGARY	*4.5%*	**5.5%**	*4.0%*	**4.5%**
TORONTO	*4.5%*	**9.0%**	*4.0%*	**5.0%**

PREVIOUS = FORECAST @ Q4 2021
CURRENT = FORECAST @ Q2 2022

MARKET SECTOR ACTIVITY



OUTER RING – MARKET SECTORS AS AT Q2 2022
INNER RING – MARKET SECTORS AS AT Q4 2021

388 George Street, Sydney, Australia

AUSTRALIA

CURRENT MARKET CONDITIONS

Based on current volumes of work in Q1 2022 and increasing values of both work yet to be done and commencements in most states, Australia's construction industry is in a positive phase. It is likely that the volume of work will remain at 2021 levels during 2022, and into H1 2023.

RLB is seeing significant construction activity in road, rail, health, and social and affordable housing projects, aided by significant investment by all state governments.

Fragmented supply chain issues are still not resolved. These are impacting both the timing and cost of building materials and equipment. Labour shortages across the nation continue because of the pandemic.

The federal election and some state elections that have already occurred or are planned in late 2022, will impact public sector investment, albeit at the long-term cost of ever-increasing account deficits through election spending promises.

The economic cost of the recent flood damage on the eastern seaboard is yet to be completely quantified. However, the need for construction labour and materials will only enhance the existing shortages.

The conflict in the Ukraine continues to cause worldwide unrest, generating sweeping effects on global markets—to which Australia is not immune. Higher fuel prices, increasing power costs, and timber shortages are all symptoms of the conflict and are likely to linger for some time yet. Additionally, the continuing zero COVID-19 policy, and associated lockdowns in key trading regions, adopted by China is impacting factory production and supply interruptions.

CONSTRUCTION COST IMPACT

Pressure and volatility on contractor tender pricing continue across Australia. Factors that influenced pricing in 2021 have remained prevalent and pressure increased in the first half of 2022.

Head contractors have reported volatile pricing from the subcontract market, difficulty in pinning down pricing, and sub-contractors being selective in committing to tenders, as many are at capacity or unable to secure the appropriate levels of labour. Supply chain instability, shipping costs and the battle to secure appropriate levels of skilled labour are also all set to remain constant obstacles to the industry as we see out 2022 and move into 2023.

Significant surges in tender pricing have been experienced in all states, where escalation uplifts for 2022 are well above the levels forecast in the last publication. Suppliers are unable to hold pricing and guarantee availability when tendering. While material price increases has been a risk contractors and subcontractors historically have navigated and managed, tenders are specifying supply rates for key materials as a condition of tender pricing, resulting in "rise and fall" price adjustment mechanisms being considered and negotiated into contracts.

Looking forward, with falling levels of approvals and the issues surrounding current cost increases, supply chain uncertainties and labour availability will potentially see activity slow to some extent, aided by rising interest rates from the Reserve Bank of Australia (RBA) and the forecast general slowdown of the economy.

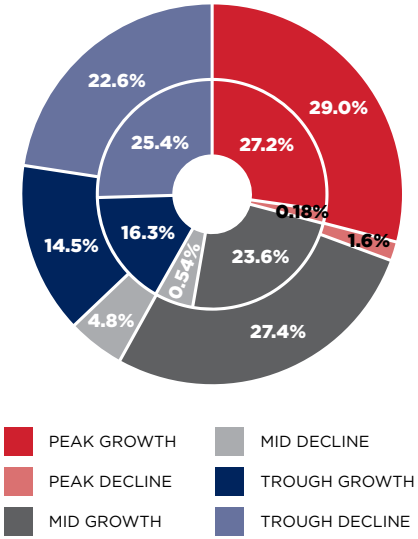
While generally within expected ranges, margins are moving upwards, and are dependent upon contractors' appetite for a particular project.

RLB TPI ANNUAL % MOVEMENT

	2022		2023	
	PREV.	CURR.	PREV.	CURR.
ADELAIDE	*3.0%*	**4.8%**	*2.8%*	**3.8%**
BRISBANE	*5.0%*	**10.5%**	*3.0%*	**5.1%**
CANBERRA	*3.5%*	**5.0%**	*3.0%*	**4.0%**
DARWIN	*2.5%*	**4.0%**	*3.0%*	**5.0%**
GOLD COAST	*5.0%*	**11.5%**	*3.0%*	**5.5%**
MELBOURNE	*3.0%*	**8.0%**	*3.5%*	**4.0%**
PERTH	*4.5%*	**9.0%**	*3.5%*	**5.0%**
SYDNEY	*2.4%*	**6.9%**	*3.0%*	**3.9%**
TOWNSVILLE	*3.0%*	**12.6%**	*3.0%*	**5.5%**

PREVIOUS = FORECAST @ Q4 2021
CURRENT = FORECAST @ Q2 2022

MARKET SECTOR ACTIVITY



OUTER RING – MARKET SECTORS AS AT Q2 2022
INNER RING – MARKET SECTORS AS AT Q4 2021

Wakefield Hospital, Wellington, New Zealand

NEW ZEALAND

CURRENT MARKET CONDITIONS

The New Zealand construction market led a bounce-back in economic activity as lockdown restrictions were relaxed in December 2021. In particular, other construction (which is often taken as a proxy for infrastructure construction) increased 17.2% in the December 2021 quarter, following an 8.9% decline in the September quarter. Non-residential construction increased 16.6%, following a 12.5% contraction in the previous quarter. Residential construction, which has grown strongly over the past year as higher house prices encouraged new housing developments, increased by a more modest 6.2% in the December 2021 quarter.

There are signs of slowing activity in the residential, commercial and government construction work pipeline. Heightened uncertainty over COVID-19 outbreaks, global growth outlook, and underlying inflation and interest rate rises are driving increased caution around business investment.

Auckland led the way in the rebound in construction activity in December 2021, reflecting the greater negative impact of the prolonged lockdown and social distancing restrictions in the region during the previous quarter. However, the rapid spread of the more transmissible Omicron variant of COVID-19 in recent months has posed new challenges to the construction sector. Building sector firms are grappling with even more acute worker shortages and supply chain disruptions due to people staying at home because of COVID-19 infection or self-isolation. This has affected the ability of construction sector firms to return to operating at full capacity.

CONSTRUCTION COST IMPACT

Non-residential construction cost inflation picked up in the December 2021 quarter, with the 2.2% increase over the quarter bringing annual non-residential construction cost inflation to 7.7% for the 2021 year. RLB expects a further increase in annual construction cost inflation, even as quarterly growth in non-residential construction costs stabilises at a high level over the first half of 2022.

RLB forecasts that annual non-residential construction cost inflation will peak at 9.4% in March 2022. Beyond that, a relaxation of border restrictions later this year should alleviate labour shortages and drive a moderation in construction cost inflation from late 2022. The forecast peak in annual construction cost inflation is lower than that seen in the 2004 building boom. However, RLB is expecting a more protracted period of elevated construction cost inflation given the high inflation environment more broadly.

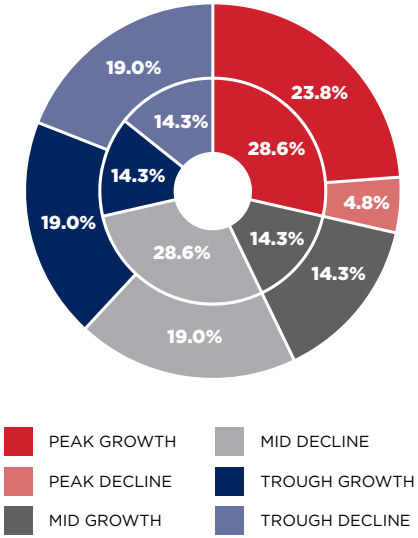
The high inflation environment, particularly with the lift in longer term inflation expectations, presents the risk of high construction cost inflation becoming more persistent over the coming years. This risk is balanced against the impact of higher interest rates and more restrictive lending conditions on construction demand, particularly for residential construction developments.

RLB TPI ANNUAL % MOVEMENT

	2022		2023	
	PREV.	CURR.	PREV.	CURR.
AUCKLAND	*5.5%*	**7.5%**	*3.5%*	**5.0%**
CHRISTCHURCH	*5.5%*	**7.0%**	*3.0%*	**5.0%**
WELLINGTON	*4.0%*	**4.0%**	*3.0%*	**3.0%**

PREVIOUS = FORECAST @ Q4 2021
CURRENT = FORECAST @ Q2 2022

MARKET SECTOR ACTIVITY



OUTER RING – MARKET SECTORS AS AT Q2 2022
INNER RING – MARKET SECTORS AS AT Q4 2021

School of Architecture and Built Environment, University of Wolverhampton, United Kingdom

UNITED KINGDOM

CURRENT MARKET CONDITIONS

The first quarter of 2022 brought many previously deferred projects back to market in the United Kingdom (UK). In addition, planning applications numbers rose and consultants' workload increased through additional early-stage project design work. The two years of the COVID-19 pandemic and its effects had become almost a thing of the past, despite its downstream effects giving rise to considerable change in some markets.

However, as we arrive at mid-year, the construction landscape has changed yet again, with the conflict in the Ukraine exacerbating the dual impacts of the pandemic and Brexit.

With the imposition of sanctions on Russian trading and goods, as well as the market effects of production constraints in Ukraine and Russia, the overall impact is reaching far beyond either Russia or Ukraine.

The considerable effects of Brexit and COVID-19 are now built into, and therefore mitigated by, contractor and sub-contractor estimating. However, the economic and market destabilisation driven by the instability in the east of Europe is affecting all aspects of economy.

Toward the end of 2021, the instability in the commodities markets had been thought to be easing, and forecasts were for moderation of base materials' pricing. In reality, what has since occurred is that key commodity prices have risen yet again. As a result, estimating has become even more problematic; estimating material prices several years into the future is uncertain in the extreme. Allied to this, general inflation looks to nudge, if not exceed, 10% in 2022, a figure not seen for 40 years in the UK. Although the UK is not alone in this—it is a global problem—that volume of general increased cost flowing through economies places considerable strain on budgets and feasibility studies, as witnessed by RLB offices up and down the country.

CONSTRUCTION COST IMPACT

Tender price movements in the UK have become noticeably more wide-ranging and uncertain in the first half of 2022. While RLB UK ordinarily publishes its Tender Price Forecast (TPF) every quarter, this year's Q1 edition was subsumed into Q2 and reflected the half year change. This was because the conflict in Ukraine that commenced in February, has had a dramatic effect on markets in Europe and the UK, to the extent that we have published ranges of tender price movement for the year, rather than the usual system of alighting on a single figure.

A construction-orders-weighted-average of tender price uplifts for 2022, now shows a range of between 4.5% and 8.2%, the 'most likely' figure being over 6%. Regionally, high-side figures range from 7.5% to 9%, while 'most likely' figures range from 5% to 7%, with the bias being toward the higher end of the range in most cases.

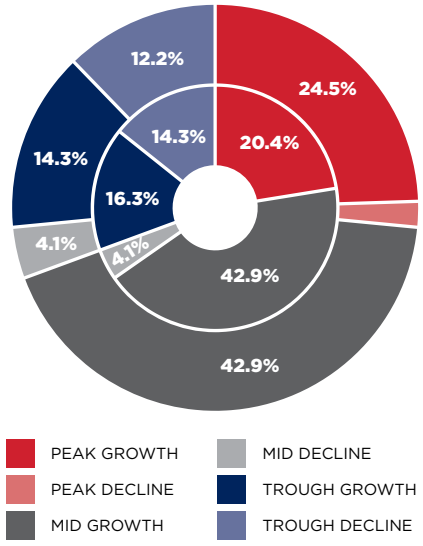
Overall market volatility is causing the wide tender price spreads alluded-to above. This volatility is being caused by supply-chain disruptions making acquisition of materials difficult (particularly imported materials), ongoing labour shortages, low general economic growth, high domestic general inflation, and uncertainty as to the situation in the Ukraine outcome. Further, doubt as to materials' lead times and consequent programming concerns are making pricing difficult, and introducing yet more layers of difficulty and exposure for even the most sophisticated contractors and sub-contractors.

RLB TPI ANNUAL % MOVEMENT

	2022		2023	
	PREV.	CURR.	PREV.	CURR.
BIRMINGHAM	*3.5%*	**5.5%**	*4.0%*	**5.0%**
BRISTOL	*4.0%*	**7.0%**	*4.0%*	**2.8%**
LEEDS	*3.6%*	**6.5%**	*3.8%*	**4.0%**
LONDON	*3.3%*	**6.0%**	*3.3%*	**5.0%**
MANCHESTER	*3.5%*	**7.0%**	*3.5%*	**5.5%**
SHEFFIELD	*3.6%*	**6.5%**	*3.8%*	**4.0%**
THAMES VALLEY	*3.3%*	**5.0%**	*3.3%*	**5.0%**

PREVIOUS = FORECAST @ Q4 2021
CURRENT = FORECAST @ Q2 2022

MARKET SECTOR ACTIVITY



OUTER RING – MARKET SECTORS AS AT Q2 2022
INNER RING – MARKET SECTORS AS AT Q4 2021

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