FOURTH 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: Aerial view of the Art Gallery of New South Wales' new SANAA-designed building, 2022, photo ©Iwan Baan

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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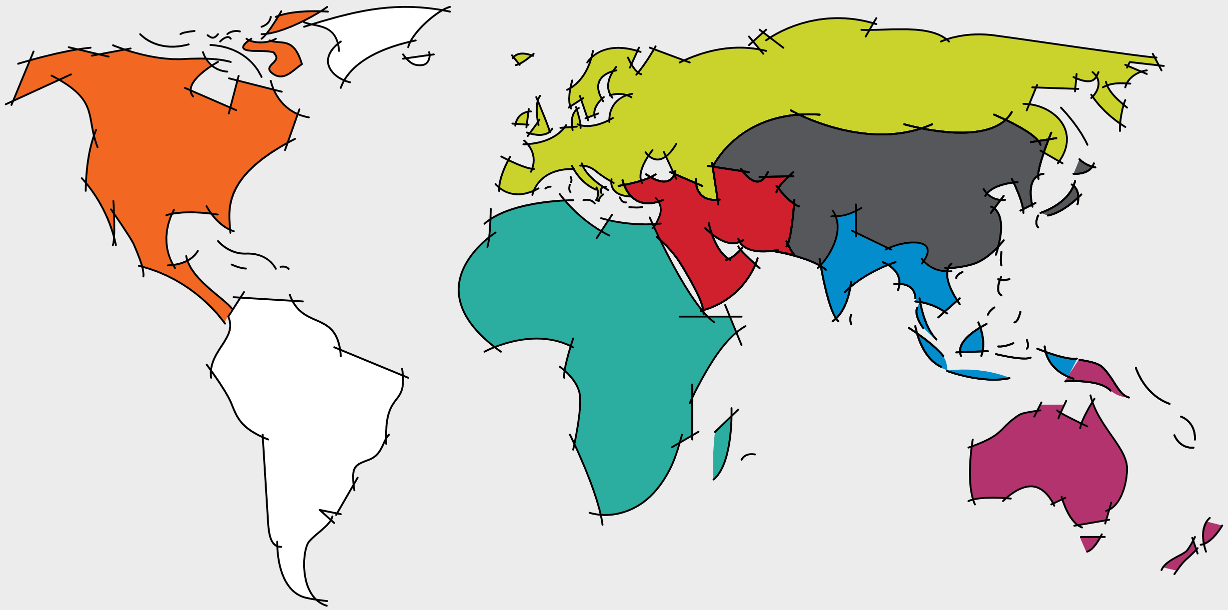

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EXECUTIVE SUMMARY

Although the global construction industry was impacted by government-imposed lockdowns during the COVID-19 pandemic, construction activity still expanded in 2020 and 2021; it was deemed essential in most countries. However, the global industry is now experiencing collateral damage caused by the pandemic. A global questionnaire facilitated by RLB's offices recently identified the major influences on regional construction inflation. Building material costs were pinpointed as the key driver in higher building costs across the globe. This is followed by availability of skilled labour and domestic interest rate rises. According to the survey results, 68% of the key drivers causing pricing spikes across the globe are externally controlled. As such, these drivers cannot be effectively managed by domestic construction industries. The largest driver within the survey was material costs (27%) which has both internal and external forces controlling pricing in each region. Other disrupters to escalation include labour availability, interest rates, supply chain logistics, general inflation, wage cost increases, increases in government-led construction spending, local energy prices, and contract risk apportionment. A graphical representation of the major influences, both external and internal, on regional construction escalation can be found on page 6.

The global economy is facing significant challenges. Growth has lost momentum, high inflation has broadened out across countries and products, and is proving persistent. Risks are skewed to the downside. Energy supply shortages could push prices higher. Interest rates increases, necessary to curb inflation, heighten financial vulnerabilities.

According to Deloitte's Economic Rebound Shaken by Crisis in Ukraine (published in March 2022), Russia's invasion of the Ukraine has triggered turmoil within the global construction industry. Although, these markets were already under some strain due to the flow on effects of the pandemic. The importance of Ukraine and Russia from an economic standpoint is demonstrated by the numbers: the two countries hold some of the largest iron reserves in the world and are consequently among the largest iron exporters. Economic damage from the conflict will contribute to a significant slowdown in global growth in 2022 and add to inflation. Geo-political conflicts accounted for less than 2% of RLB survey responses. However, the impact of this conflicts fuels other drivers, including material cost issues (27% of survey responses), supply chain logistics (7%), foreign exchange volatility (3%), and fuel prices (3%).

According to The Business Research Company's Construction Global Market Report 2022, the global construction market is predicted to reach activity of $13.5 trillion ($13,500 billion) in 2021, having increased at a compound annual growth rate (CAGR) of 4.6% since 2016. The industry is forecast to grow 9.8% from $13 trillion in 2021 to $23 trillion in 2026, and then to $39 trillion in 2031.

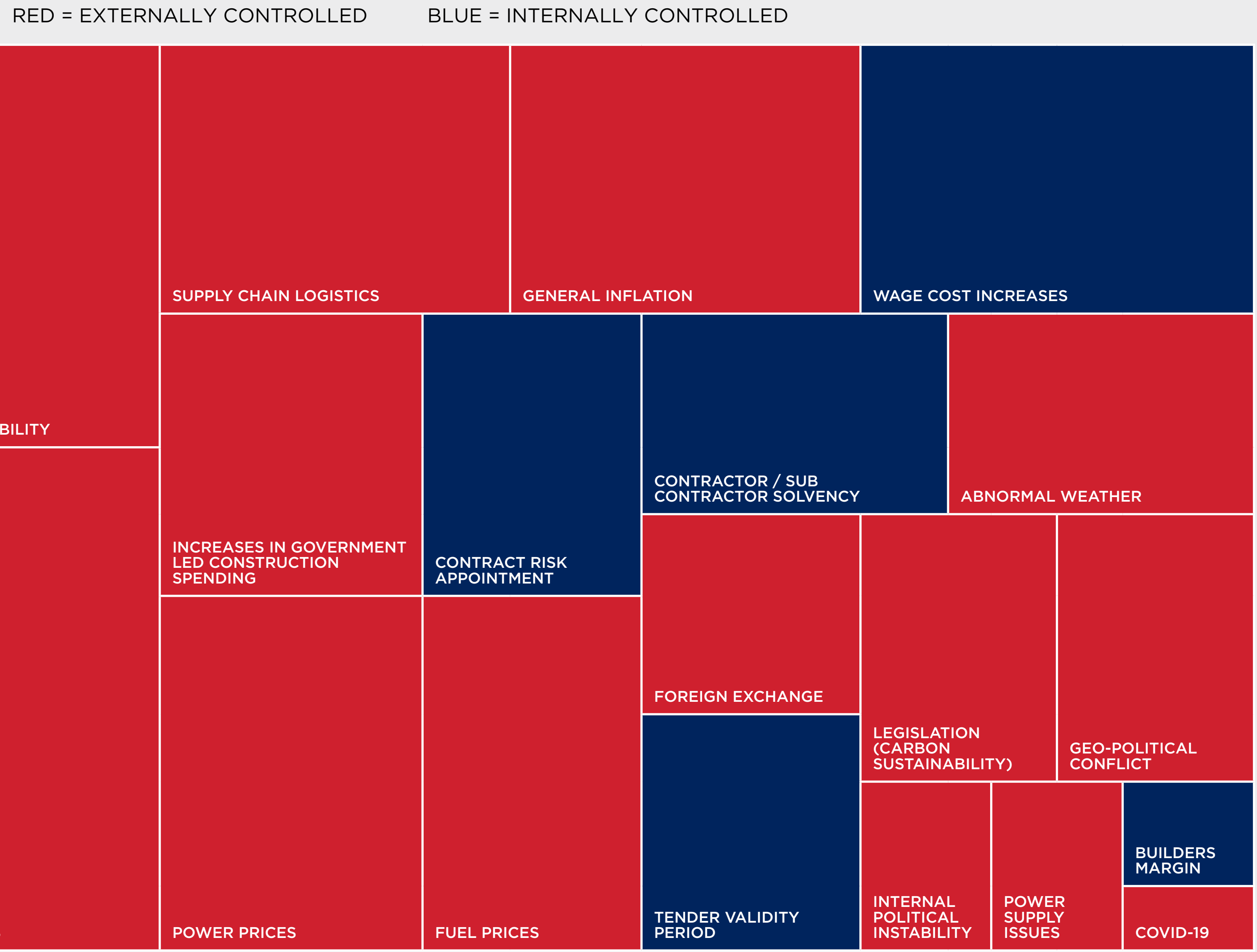
Population growth in emerging countries, ageing populations in developed countries, greater urbanisation and concentration in megacities, the decarbonisation of the economy, and technology and digital transformations will be the main growth drivers for the industry in the coming decades. This is because all these factors will require significant investment in transport, water, waste management, social infrastructure, renewable energies, telecommunications, and adaptation to new technologies.

According to Deloitte, it is estimated that only 20% of the global infrastructure needed for 2050 has been built. This global infrastructure gap represents a challenge for governments and for the construction industry. Almost two thirds of the infrastructure investment forecasted for the next decade will centre on emerging countries, where infrastructure has a clear transformational impact on the lives of citizens and the development of businesses. However, even more developed countries will need to invest in infrastructure to improve competitiveness, meet increasing demand, sustain economic development, decarbonise the economy and digitalise. This need for significant social investment will add pressure to already limited resources within the industry (16%) and has already been identified as a major influence on construction pricing. Another key driver identified in the survey that will impact construction escalation is the rise in government sponsored spending (5%), particularly in the social and heavy infrastructure sector.

Globally, most regions have seen a surge in construction inflation since RLB published the Q2 2022 International Report. All regions, except for North Asia, have seen rising construction inflation over the past six months. Adelaide (AUS) has recorded the largest increase over the past six months of an additional 7.8% to now forecast 12.5% for 2022. Conversely, with the zero COVID-19 policy still being adopted in China, Shanghai has forecast a drop in escalation from 7.6% to a de-escalation rate of -4.4% in 2022.

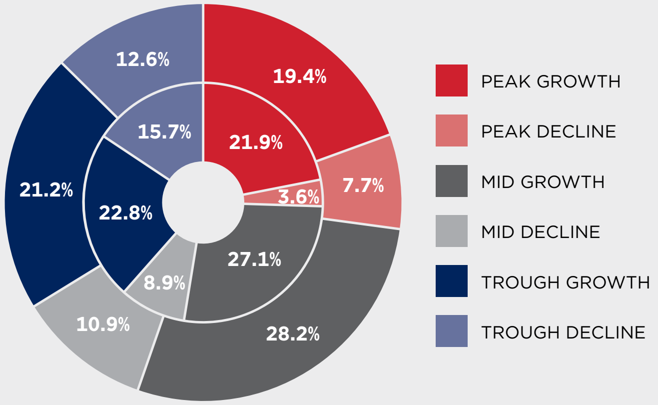
Interior view of the Art Gallery of New South Wales' new SANAA-designed building, photo ©Iwan Baan, Sydney, Australia

REGIONAL CONSTRUCTION INDUSTRY INFLUENCES ON ESCALATION



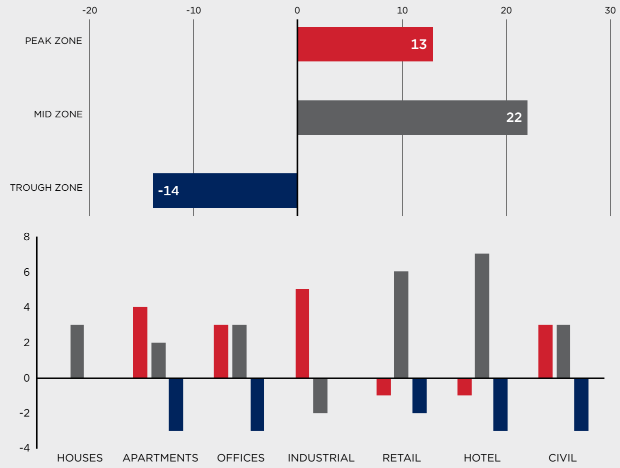
GLOBAL MARKET SECTOR ACTIVITY

NUMBER OF GLOBAL SECTORS



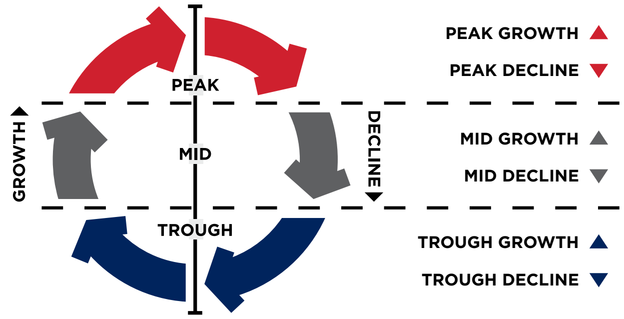
OUTER RING – MARKET SECTORS AS AT Q4 2022
INNER RING – MARKET SECTORS AS AT Q2 2022

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



The movement for the last six months generally highlights a softening of global activity. The movement of sectors to the mid zone (in grey) from the peak zone (in red) highlight this softening. The residential sector saw the highest drop in the cycle with five cities indicating a softening of 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 Q2 2022 International Report was published, there has been a softening of sentiment across the consolidated responses of RLB and affiliate offices across the globe. With the current pressures on the global industry, the percentage of sectors within the growth phase of the cycle has dropped from 72% to 69% for this edition, with the largest fall within the housing sector. This indicates that while the housing is still strong across the globe, the market may have reached its peak.

Currently, 27% of all sectors are in the peak zone of the activity cycle, which is up from 26% six months ago. 39% of sectors are in the mid zone, up from 36% previously reported, and the trough zone represents 34%. The trend globally is that the development cycle has moved slightly upwards with more cities highlighting less sectors within the trough zone and growth in the mid and peak zones overall.

As previously identified within this report, all sectors are still seeing the impacts of ‘long COVID’. External influences on regional economies are having significant impacts on investment decisions, impacting activity going forward.

Of the seven key sectors on which each RLB office reports, the residential (houses and apartments), industrial and civil (infrastructure) sectors continue to record the strongest results, with activity remaining in the peak zone.

With more than a third (34%) of all sectors within the trough zone, the medium and long-term challenges within the offices, retail and hotel sectors remain clear.

The movement of 20 sectors from the growth phase of the cycle to the decline phase highlights the current pressures being felt within the global industry and a softening of the residential and hotel sectors globally.

GLOBAL MARKET SECTOR ACTIVITY

Overview

The 'up' and 'down' arrows within the tables represent whether the sector is in a growth or decline phase, with the colour of the arrow determining 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	▲ grey	▲ grey	▲ blue	▲ grey	▼ blue	▼ blue	▲ grey
DURBAN	▲ grey	▲ grey	▼ blue	▼ grey	▲ grey	▲ grey	▲ blue
GABORONE (BOTSWANA)	▲ blue	▲ blue	▲ blue	▲ red	▲ red	▼ grey	▲ red
JOHANNESBURG	▲ grey	▲ red	▼ blue	▲ red	▲ grey	▲ grey	▲ blue
MAPUTO (MOZAMBIQUE)	▲ red	▲ red	▲ red	▲ red	▲ red	▲ red	▲ red
MIDDLE EAST							
ABU DHABI	▲ blue	▲ blue	▲ blue	▲ grey	▼ grey	▼ grey	▲ grey
DOHA	▲ grey	▼ grey	▼ blue	▲ red	▼ grey	▼ blue	▼ red
DUBAI	▲ grey	▲ grey	▲ blue	▲ grey	▼ grey	▲ grey	▲ grey
RIYADH	▲ red	▲ red	▲ red	▲ red	▲ red	▲ red	▲ red
NORTH ASIA							
BEIJING	▼ blue	▼ grey	▲ blue	▼ blue	▼ blue	▼ blue	▲ grey
CHENGDU	▼ grey	▼ grey	▼ grey	▼ blue	▼ blue	▼ grey	▼ red
GUANGZHOU	▼ grey	▼ red	▼ red	▲ grey	▼ red	▼ grey	▲ grey
HONG KONG	▲ blue	▲ blue	▲ blue	▲ grey	▼ blue	▼ blue	▲ grey
MACAU	▼ blue	▲ grey	▲ grey	▼ blue	▼ grey	▼ grey	▲ red
SEOUL	▲ blue	▲ blue	▼ blue	▲ blue	▼ blue	▼ grey	▼ grey
SHANGHAI	▼ blue	▼ grey	▼ grey	▼ blue	▼ red	▼ red	▲ grey
SHENZHEN	▼ grey	▲ grey	▼ grey	▲ grey	▼ grey	▼ grey	▲ grey
SOUTHEAST ASIA							
HO CHI MINH CITY	▲ blue	▲ grey	▲ blue	▼ red	▲ blue	▲ grey	▲ blue
JAKARTA	▲ grey	▲ grey	▼ grey	▲ red	▲ blue	▲ blue	▲ grey
KUALA LUMPUR	▲ blue	▲ blue	▼ blue	▼ red	▼ blue	▲ blue	▲ blue
SINGAPORE	▲ grey	▲ grey	▲ blue	▲ grey	▼ blue	▲ grey	▲ grey
AMERICA							
BOSTON	▲ grey	▲ grey	▲ red	▲ red	▲ grey	▲ blue	▲ red
CHICAGO	▲ red	▲ red	▲ blue	▲ grey	▼ blue	▼ blue	▲ red
DENVER	▲ red	▲ red	▲ grey	▲ grey	▲ blue	▲ blue	▲ red
HONOLULU	▲ red	▲ red	▼ blue	▲ grey	▲ blue	▲ grey	▲ red
LAS VEGAS	▲ grey	▲ grey	▲ blue	▲ grey	▲ blue	▲ grey	▲ red
LOS ANGELES	▲ red	▲ red	▲ grey	▲ grey	▼ blue	▲ grey	▲ red
NEW YORK	▲ grey	▲ red	▼ red	▲ red	▲ grey	▲ blue	▲ red
PHOENIX	▲ red	▲ red	▲ blue	▲ red	▲ grey	▲ blue	▼ red
PORTLAND	▲ grey	▲ grey	▲ grey	▲ red	▲ blue	▲ grey	▲ red
SAN FRANCISCO	▲ red	▲ red	▲ grey	▲ red	▲ blue	▲ blue	▲ grey
SEATTLE	▲ grey	▲ grey	▼ blue	▲ grey	▲ blue	▼ blue	▲ grey
WASHINGTON D.C.	▼ grey	▲ grey	▲ grey	▲ grey	▲ blue	▲ red	▲ red
CANADA							
CALGARY	▼ red	▲ red	▼ blue	▲ red	▲ blue	▼ grey	▲ red
TORONTO	▼ red	▲ red	▲ grey	▲ grey	▲ grey	▲ blue	▲ red

	HOUSES	APARTMENTS	OFFICES	INDUSTRIAL	RETAIL	HOTEL	CIVIL
AUSTRALIA							
ADELAIDE	▲ grey	▲ grey	▲ red	▲ grey	▲ grey	▲ grey	▲ red
BRISBANE	▼ red	▼ red	▲ grey	▲ red	▼ blue	▲ red	▲ grey
CANBERRA	▲ red	▼ grey	▲ red	▲ red	▲ blue	▲ grey	▲ grey
DARWIN	▲ grey	▼ blue	▼ blue	▲ grey	▼ blue	▼ blue	▲ red
GOLD COAST	▼ red	▲ red	▲ blue	▲ grey	▼ blue	▲ blue	▲ blue
MELBOURNE	▼ red	▲ grey	▲ blue	▲ red	▲ blue	▲ blue	▲ red
PERTH	▼ red	▼ grey	▼ grey	▲ grey	▲ grey	▼ blue	▲ red
SYDNEY	▼ red	▲ grey	▲ blue	▲ red	▲ blue	▲ grey	▲ red
TOWNSVILLE	▼ red	▲ blue	▲ blue	▼ blue	▲ blue		▲ grey
NEW ZEALAND							
AUCKLAND	▼ red	▼ grey	▼ grey	▼ red	▼ blue	▼ blue	▲ red
CHRISTCHURCH	▲ blue	▲ blue	▼ blue	▲ blue	▼ blue	▲ blue	▲ grey
WELLINGTON	▲ red	▲ red	▲ blue	▲ grey	▲ blue	▲ grey	▲ red
UNITED KINGDOM							
BIRMINGHAM	▼ red	▲ red	▲ grey	▲ red	▲ blue	▲ grey	▼ red
BRISTOL	▲ grey	▼ grey	▼ grey	▲ grey	▼ grey	▼ grey	▲ grey
LEEDS	▲ grey	▲ red	▼ red	▼ red	▼ blue	▲ blue	▲ grey
LONDON	▲ grey	▲ grey	▲ grey	▲ red	▼ blue	▲ grey	▲ grey
MANCHESTER	▲ red	▼ red	▲ grey	▲ red	▼ blue	▲ blue	▲ grey
SHEFFIELD	▲ grey	▲ red	▼ red	▼ red	▼ blue	▲ blue	▲ grey
THAMES VALLEY	▼ grey	▲ grey	▼ grey	▼ red	▼ blue	▲ grey	▼ red

RLB TENDER PRICE INDEX

RLB's Tender Price Index (TPI) forecast percentage uplift ranges continue to highlight the volatility surrounding pricing and tender returns. RLB offices across the globe, apart from those in North Asian cities, are reporting tender submissions in which costs are higher than would have been expected in 2021. 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.

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, 45% of RLB offices report 2022 escalation rates higher than those forecasted in the Q2 edition of this publication. The volatility is high. Thirty two percent recorded the same escalation rates and 23% forecast escalation rates for 2022 lower than those published previously.

RLB continues to see spreads between the tenderers' bids that are widening, and there is a clear reluctance on the part of bidders to fix prices for any length of time.

Where prices are fixed, there are 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.

Looking at the influences on regional escalation identified in the recent survey results, external inputs are causing uncontrollable lifts in construction costs. The key global influences (both internal and external) are identified pictorially on the treemap on page 6.

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 ensure the most appropriate management of risk, and minimising the underlying pricing uncertainties. RLB offices across the globe have highlighted the underlying global forces that are adding to local construction costs, in addition to the traditional local inputs that continue to affect construction pricing.

	2021	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)
AFRICA						
CAPE TOWN	8.2	9.4	6.0	6.2	NP	NP
DURBAN	7.7	8.0	5.1	NP	NP	NP
GABORONE	3.1	9.0	6.1	NP	NP	NP
JOHANNESBURG	4.2	5.0	6.0	NP	NP	NP
MIDDLE EAST						
ABU DHABI	1.9	5.1	4.5	4.5	3.5	3.0
DOHA	2.9	5.2	4.9	3.9	3.2	NP
DUBAI	1.9	5.1	4.5	4.5	3.5	3.0
RIYADH	3.0	10.4	8.2	7.4	4.8	3.8
NORTH ASIA						
BEIJING	5.0	(2.5)	2.0	2.0	2.0	2.0
CHENGDU	3.0	0.0	3.0	3.0	3.0	2.0
GUANGZHOU	5.9	2.0	2.0	3.0	3.0	3.0
HONG KONG	5.3	7.2	4.0	4.0	4.0	4.0
MACAU	(2.0)	0.5	2.0	2.0	2.0	2.0
SEOUL	14.0	9.6	9.1	8.4	7.7	7.2
SHANGHAI	7.6	(4.4)	3.0	3.0	3.0	3.0
SHENZHEN	5.0	0.0	1.0	2.0	3.0	3.0
SOUTHEAST ASIA						
HO CHI MINH CITY	8.8	4.6	5.1	5.1	4.6	4.6
JAKARTA	5.0	5.1	NP	NP	NP	NP
KUALA LUMPUR	6.1	3.0	4.0	NP	NP	NP
SINGAPORE	10.0	8.8	5.0	3.0	3.0	3.0
AMERICA						
BOSTON	9.9	9.7	8.0	7.0	6.0	4.0
CHICAGO	9.6	10.0	3.0	4.0	5.0	4.5
DENVER	5.6	8.8	7.0	6.5	6.0	5.5
HONOLULU	4.0	4.7	6.0	7.0	5.0	4.5
LAS VEGAS	7.3	8.0	6.0	5.5	5.0	4.5
LOS ANGELES	8.0	7.2	5.0	4.0	4.0	4.5
NEW YORK	8.9	7.8	7.0	7.5	6.5	5.5
PHOENIX	8.6	8.9	5.5	3.5	3.5	4.0
PORTLAND	8.4	10.4	5.5	5.0	4.5	4.5
SAN FRANCISCO	7.2	5.7	5.0	4.8	4.5	5.0
SEATTLE	10.8	10.2	3.5	3.5	3.5	5.0
WASHINGTON D.C.	8.2	8.8	6.0	6.0	5.5	4.0

	2021	2022 (F)	2023 (F)	2024 (F)	2025 (F)	2026 (F)
CANADA						
CALGARY	9.8	7.1	4.5	4.0	4.0	4.0
TORONTO	13.5	14.5	5.0	6.0	5.5	4.0
AUSTRALIA						
ADELAIDE	7.1	12.5	3.8	3.0	3.0	3.0
BRISBANE	9.6	10.5	5.1	5.1	5.1	5.1
CANBERRA	3.8	5.0	4.0	3.5	3.5	3.0
DARWIN	1.2	7.8	5.0	4.0	4.0	3.0
GOLD COAST	14.5	15.5	7.5	3.0	3.0	3.0
MELBOURNE	3.5	8.0	4.0	3.5	3.5	3.5
PERTH	13.5	9.4	5.6	4.4	3.6	3.0
SYDNEY	4.1	6.9	3.9	3.5	3.5	3.5
TOWNSVILLE	10.4	12.6	8.0	4.0	3.0	3.0
NEW ZEALAND						
AUCKLAND	5.0	12.0	5.5	4.0	3.0	2.5
CHRISTCHURCH	8.5	9.0	5.0	4.0	3.0	2.5
WELLINGTON	6.0	9.0	5.0	4.0	3.0	3.0
UNITED KINGDOM						
CARDIFF	NP	7.0	6.0	4.0	4.0	NP
BIRMINGHAM	3.5	5.5	5.0	4.5	4.0	3.3
BRISTOL	3.5	4.0	3.0	2.5	2.3	NP
LEEDS	3.2	8.5	3.0	3.5	3.5	NP
LONDON	7.2	6.0	3.5	3.0	3.0	4.0
MANCHESTER	6.0	7.0	5.5	4.0	4.0	NP
SHEFFIELD	3.2	8.5	3.0	3.5	5.0	NP
THAMES VALLEY	3.8	5.0	3.5	2.5	2.5	NP
IRELAND & MAINLAND EUROPE						
BERLIN	15.0	14.7	6.0	3.0	3.0	NP
BUDAPEST	4.0	10.0	8.0	4.0	3.5	NP
OSLO	6.0	8.1	4.6	2.6	2.4	NP
PRAGUE	10.0	23.0	10.0	10.0	10.0	NP

Aerial view of the Art Gallery of New South Wales' new SANAA-designed building, 2022, photo ©Iwan Baan, Sydney, Australia

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 East Asia, Southern Africa, England and Europe, as well as annually in the Middle East. The Index currently tracks the number of cranes in 58 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 has stabilized with the start of 'normality' across the regions.

AUSTRALIA CITIES	Q3 2021	Q1 2022	Q3 2022	MOVEMENT % CHANGE
ADELAIDE	11	16	17	6.3%
BRISBANE	83	79	82	3.8%
CANBERRA	33	31	23	-25.8%
CENTRAL COAST	10	10	10	0.0%
DARWIN	-	2	2	0.0%
GOLDCOAST	35	40	52	30.0%
HOBART	-	-	2	-
MELBOURNE	180	192	206	7.3%
NEWCASTLE	9	12	12	0.0%
PERTH	37	55	51	-7.3%
SUNSHINE COAST	13	16	16	0.0%
SYDNEY	295	348	380	9.2%
WOOLONGONG	12	12	15	25.0%
AUSTRALIAN CITIES	**718**	**813**	**868**	**6.8%**

NEW ZEALAND CITIES	Q3 2021	Q1 2022	Q3 2022	MOVEMENT % CHANGE
AUCKLAND	96	108	104	12.5%
CHRISTCHURCH	14	12	10	-14.3%
DUNEDIN	1	1	5	0.0%
HAMILTON	4	3	4	-25.0%
QUEENSTOWN	8	8	8	0.0%
TAURANGA	5	3	5	-40.0%
WELLINGTON	16	15	12	-6.3%
NEW ZEALAND CITIES	**144**	**150**	**148**	**4.2%**

AMERICAN CITIES	Q3 2021	Q1 2022	Q3 2022	MOVEMENT % CHANGE
BOSTON	12	9	10	11.1%
CHICAGO	7	10	18	80.0%
DENVER	15	21	32	52.4%
HONOLULU	6	6	9	50.0%
LAS VEGAS	2	2	3	50.0%
LOS ANGELES	51	51	46	-9.8%
NEW YORK	10	12	14	16.7%
PHOENIX	2	2	3	50.0%
PORTLAND	15	12	15	25.0%
SAN FRANCISCO	13	15	14	-6.7%
SEATTLE	39	37	42	13.5%
WASHINGTON DC	35	26	26	0.0%
UNITED STATES CITIES	**207**	**203**	**232**	**14.3%**

CANADA CITIES	Q3 2021	Q1 2022	Q3 2022	MOVEMENT % CHANGE
CALGARY	32	31	21	-32.3%
TORONTO	225	252	230	-8.7%
CANADIAN CITIES	**257**	**283**	**251**	**-11.3%**
NORTH AMERICAN CITIES	**464**	**486**	**483**	**-0.6%**

MIDDLE EAST CITIES	Q4 2018	Q4 2019	MOVEMENT % CHANGE
DUBAI	1,193	1,345	-
ABU DHABI	338	257	-
DOHA	468	401	-
MIDDLE EASTERN CITIES	**1,999**	**2,003**	**-**

AFRICAN CITIES	Q3 2021	Q1 2022	Q3 2022	MOVEMENT % CHANGE
DURBAN	21	-	6	-71.4%
CAPE TOWN	29	-	24	-17.2%
STELLENBOSCH	2	-	3	50.0%
JOHANNESBURG	20	-	23	15.0%
PRETORIA	18	-	28	55.6%
SOUTH AFRICAN CITIES	**90**	**-**	**84**	**-6.7%**

HONG KONG	Q4 2021	MOVEMENT % CHANGE
HONG KONG ISLAND	37	-
KOWLOON	63	-
NEW TERRITORIES	82	-
HONG KONG CITIES	**182**	**-**

SOUTH ASIA	Q3 2021	Q1 2022	Q3 2022	MOVEMENT % CHANGE
SINGAPORE	466	520	500	-3.8%
JAKARTA	74	49	37	-24.5%
HO CHI MINH CITY	120	122	118	-3.3%
KUALA LUMPUR	443	314	272	-13.4%
SOUTH ASIA CITIES	**1,103**	**1,005**	**927**	**-7.8%**

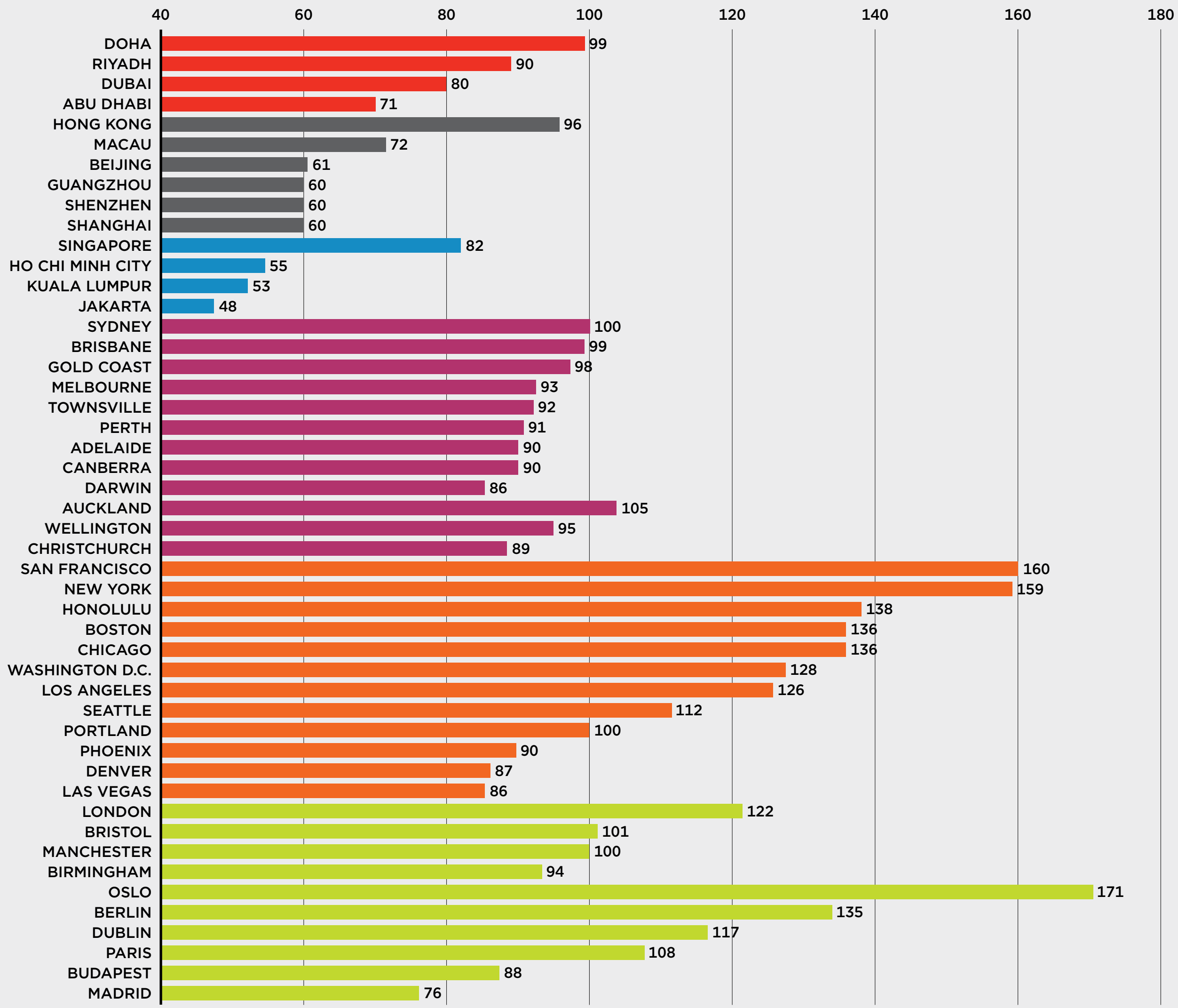
UNITED KINGDOM CITIES	Q3 2021	MOVEMENT % CHANGE
BIRMINGHAM	21	-
BRISTOL	-	-
LEEDS	11	-
LIVERPOOL	6	-
LONDON	189	-
MANCHESTER	32	-
SHEFFIELD	10	-
UNITED KINGDOM CITIES	**269**	**-**

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 and baskets 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 the International Monetary Fund's (IMF) 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 as at Q2 2022.



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

Hasso Plattner School of Design - Cape Town, South Africa

AFRICA

CURRENT MARKET CONDITIONS

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

Market activity in the Western Cape has seen a steep increase in the past 12 months. The Western Cape experienced much flatter COVID-19 impacts, because it is typically home to a larger number of small-to-medium projects, and fewer large-to-mega projects (which are particularly exposed to the impacts of COVID-19). As such, from a moderate base, the Western Cape region has seen a rapid increase in activity.

The residential and industrial sectors experienced major activity increases. In contrast, 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 experienced. 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

Labour availability is not an issue–the unemployment rate is the highest that it has ever been since comparable data began in 2008. However, material costs have seen an increase overall.

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

As we know, South Africa is relatively dependent on global suppliers and is severely impacted by global issues. Supply chain and logistical challenges can be seen world-wide.

Due to the conflict in Russia and the Ukraine, and with Russia being one of the largest oil providers in the world, consumables such as petrol and diesel are at an all-time high in South Africa. This directly influences the rates received for bulk earthworks tenders due to the large proportion of plant usage in the contractor's scope.

Economic factors such as price increases in building materials and consumables will definitely impact the construction industry moving forward. Diesel prices have increased by 21% since the last reporting period and are expected to rise further. The Rand is very volatile and sensitive to fluctuations in the Pound, Euro and US Dollar. This volatility negatively affects the importation of building materials and equipment. As such, there has been a major shift in the use of locally manufactured product, such as tiles, reducing lead times as well as import costs. This increase in demand for locally manufactured products is causing other issues, with manufacturers not always meet demand and lead times becoming longer.

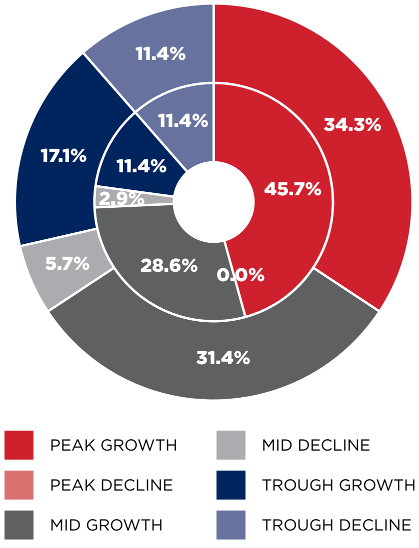
Steel prices have also increased significantly. This influences all buildings constructed from reinforcement, copper, aluminium window frames, roof sheeting and so on. Although steel prices remain very high, RLB has started to see a decrease in steel prices in tenders.

RLB TPI ANNUAL % MOVEMENT

	CURRENT		PREVIOUS		MOVEMENT	
	2022	2023	2022	2023	2022	2023
CAPE TOWN	**9.4**	**6.0**	NP	NP	*NP*	*NP*
DURBAN	**8.0**	**5.1**	14.8	6.6	*(6.8)*	*(1.4)*
GABORONE	**9.0**	**6.1**	4.1	NP	*4.9*	*NP*
JOHANNESBURG	**5.0**	**6.0**	5.0	6.0	*0.0*	*0.0*

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

MARKET SECTOR ACTIVITY



OUTER RING - MARKET SECTORS AS AT Q4 2022
INNER RING - MARKET SECTORS AS AT Q2 2022

Lusail City, Qatar

MIDDLE EAST

CURRENT MARKET CONDITIONS

In the Middle East, COVID-19 pandemic restrictions have eased almost completely. As a result, tourism arrival numbers have increased significantly from last year, particularly from Russia which is exceeding 2019 levels.

Immigration from Russia is providing a boost to residential sales, particularly in the high end market. The luxury residential market is seeing record breaking sale prices for villas and apartments. Introduced in 2019, the Golden Visa— a 10 year long-term residency that enables foreign nationals to live, work or study in the UAE—is expected to spur investment.

Tender activity is at its highest point since the COVID-19 pandemic, with significant increases in requests for proposals received. Feasibility of projects is still under heavy pressure due to global uncertainty. The lag in feasibility for some projects is likely to continue, but it should lead to further increases in market activity. Higher energy prices are also directly impacting petrochemical driven economies.

Some sectors remain buoyant, particularly hospitality, tourism, travel, aviation and luxury residential. Tourism and retail activity are experiencing positive growth related to FIFA World Cup tourists visiting the United Arab Emirates (UAE).

Positive signs continue to emerge around the Environmental, Social, and Governance (ESG) agenda and sustainability generally. Increasingly, there are initiatives to encourage growth in the green sector and developers are looking to achieve more sustainable outcomes from their developments.

With the Dubai building portfolio now maturing, the demand and necessity for refurbishment, retrofitting and repurposing within in the market is growing. This is being explored through life cycle costing studies, with a strong focus on efficiency gains and net zero carbon targets.

Qatar is now in the midst of the FIFA World Cup, which has halted the majority of construction work. Activity preceding the Work Cup was largely focused on tournament related projects, from infrastructure through to completion of hotels and entertainment venues.

It remains to be seen what activity levels will be like once the World Cup is complete. It is likely to be significantly affected by the perceived success of the tournament. There may be a six to 12 month lull as Qatar recalibrates and formulates an updated plan for the country.

CONSTRUCTION COST IMPACT

Demand for resources (human, capital and materials) from the Kingdom of Saudi Arabia (KSA) will continue to put pressure on supply for the UAE market.

Fuel price increases will continue to contribute to general price inflation.

Finally, increased costs in shipping and post COVID-19 delays will continue to impact material importation and the subsequent cost of sourcing alternatives.

The stability of the UAE Dirhams means that it is a stable foreign exchange or forex trading investment option within the region. With the Dirhams strengthening against emerging market currencies, this will help to reduce the import prices and mitigate global inflation.

Contract risk apportionment remains imbalanced, with terms and conditions too highly favoring clients. The trend appears to be the imposition of even more stringent conditions. As competition increases from KSA, the UAE should be looking to make conditions more attractive.

The continued focus of procurement departments on lowest cost and onerous tender and contractual bonds and requirements persists. This is impacting the quality and long-term value of developments.

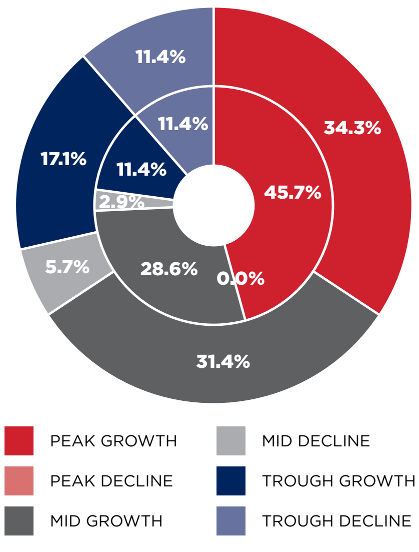
Although inflationary pressures have been seen in Qatar, costs have remained relatively stable in the last period. This is largely due to the majority of projects already in the construction phase, with new project commencements in the last period remaining fairly low due to the World Cup.

RLB TPI ANNUAL % MOVEMENT

	CURRENT		PREVIOUS		MOVEMENT	
	2022	2023	2022	2023	2022	2023
ABU DHABI	5.1	4.5	5.1	4.5	0.0	0.0
DOHA	2.9	5.2	5.2	4.9	(2.3)	0.3
DUBAI	1.9	5.1	5.1	4.5	(3.2)	0.6
RIYADH	3.0	10.4	7.4	4.8	(4.4)	5.6

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

MARKET SECTOR ACTIVITY



OUTER RING - MARKET SECTORS AS AT Q4 2022
INNER RING - MARKET SECTORS AS AT Q2 2022

Haikou International Duty Free Shopping Complex, Haikou, China

NORTH ASIA

CURRENT MARKET CONDITIONS

In the third quarter of 2022, China's GDP increased by 3.9% year-on-year. Several other key economic indicators also showed sustained growth. Despite this sustained economic growth, China's domestic economic recovery remains uneven in light of the unstable global outlook. More time and effort is needed to rebalance the market as the global COVID-19 pandemic continues to evolve.

Since September 2022, the US dollar interest rate hikes have led to the depreciation of global currencies, including the Chinese Yuan (CNY). In addition, strict implementation of the "dynamic zero clearance" COVID-19 policy in China has resulted in an economic slowdown. Investment in real estate in China showed a downward trend. In the coming quarters, development of China's real estate market and fixed asset investments will rely on the gradual relaxing of local COVID-19 restrictions and government infrastructure investment.

The Hong Kong economy showed a widened year-on-year contraction in the third quarter of 2022. Business sentiment remained cautious, with elevated global inflation and monetary tightening by major central banks. According to the advance estimates, Hong Kong's real GDP fell by 4.5% in the third quarter of 2022 from a year earlier, after decreasing by 1.3% in the previous quarter. Despite a 1.1% drop in the gross value of construction works in the private sector, total expenditure on construction rose by 2.5% in real terms year-on-year. This is compared to a 7.0% increase in the previous quarter. In the near future, public works will remain the key driver to support the construction industry as the new-term Government streamlines development-related procedures and expedites land supply.

South Korea's GDP increased by 1.5% in the third quarter of 2022 compared to the previous quarter. Construction output also rose by 3.9% in September of 2022 year-on-year. The Government plans to initiate housing redevelopment projects by building 830,000 houses across the country over the next three years. With increased housing supply, the total area of residential permit increased significantly in the third quarter.

CONSTRUCTION COST IMPACT

In the first half of 2022, the prices of major materials in the construction industry in Shanghai decreased slightly compared to the fourth quarter of 2021. However, in the second quarter of 2022, investment in fixed assets and real estate in Shanghai has been slowing. While the housing market is facing potential decline, construction of affordable housing under the government policy will help alleviate the market situation. In the third quarter of 2022, the average prices of steel, copper, aluminium and glass decreased compared with the first half of 2022. Wages of construction workers remained at a similar level during the same period.

In Hong Kong, the construction costs in the first half of 2022 rose by 7.6 % compared with the same period a year ago. Apart from inflated material costs, workers in 12 types of construction trades received pay rises starting from November 2022, after a three-year wage freeze. Plasterers will benefit the most, with a 12.5% increase, with other trades receiving increases from 3% to 12%. Hong Kong's Chief Executive delivered his Policy Address in October 2022, highlighting a number of key policies such as land reclamation, cavern development, urban renewal and new railways that are relevant to the real estate, construction and infrastructure sectors. This roadmap represents a major boost for the construction industry. It will ensure sufficient workloads in the public sector in coming years, amid deteriorating sentiment in the private sector.

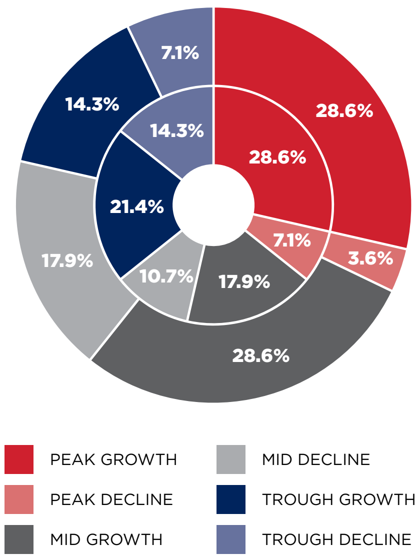
As of September 2022, the construction cost index in South Korea rose by 8.64% year-on-year. Among the sub-indices of the building construction sector, the residential building index rose by 8.35%, and the non-residential building index rose by 8.01% year-on-year. Meanwhile, sub-indices of the civil engineering sector showed a smaller extent of increase.

RLB TPI ANNUAL % MOVEMENT

	CURRENT		PREVIOUS		MOVEMENT	
	2022	2023	2022	2023	2022	2023
BEIJING	(2.5)	2.0	3.0	2.0	(5.5)	0.0
CHENGDU	0.0	3.0	3.0	3.0	(3.0)	0.0
GUANGZHOU	2.0	2.0	4.0	3.0	(2.0)	(1.0)
HONG KONG	7.2	4.0	6.6	4.0	0.5	0.0
MACAU	0.5	2.0	0.5	2.0	0.0	0.0
SEOUL	9.6	9.1	6.6	2.0	3.0	7.1
SHANGHAI	(4.4)	3.0	4.5	4.0	(8.9)	(1.0)
SHENZHEN	0.0	1.0	4.0	3.0	(4.0)	(2.0)

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

MARKET SECTOR ACTIVITY



OUTER RING - MARKET SECTORS AS AT Q4 2022
INNER RING - MARKET SECTORS AS AT Q2 2022

Raffles Hotel, Singapore

SOUTH ASIA

CURRENT MARKET CONDITIONS

Countries in the South Asia region continue to report recovery from pandemic-related setbacks, and outbreaks of new dominant COVID-19 strains have been kept under control. There is a general air of optimism in the market with a healthy pipeline of works for majority of the region, despite challenges ahead.

Prices of core construction materials remain elevated despite the softening of raw metal prices in the second quarter of 2022. This is because supply chains and ports are still experiencing delays. The fluctuation in the price of oil and gas, combined with a strong US dollar, is also contributing to the cost of imported materials, significantly impacting countries that are reliant on imported materials, such as Singapore.

The labour force situation differs throughout the region. In countries where domestic labourers make up majority of the construction workforce, it is reported that supply remain abundant and competitive. On the other hand, Malaysia and Cambodia have noted tight labour markets as shortages of skilled and unskilled foreign labourers have restricted project progress. In Singapore, the inflow of less skilled labourers and the outflow of skilled labourers has resulted in a high rate of labour unproductivity.

Developers in Malaysia are adopting a wait-and-see approach for pre-tender projects. This is in anticipation of incentives and policies that the incoming government is likely to implement following the recent general election.

In Vietnam, general inflation remains low, at a maximum of 4% for the whole year. The Cambodian market is projected to expand by 6.3% in 2022, supported by investments in the infrastructure, commercial and residential sectors. The Indonesian market is projected to expand by 5.8% this year, supported by investments in the infrastructure and residential sectors.

CONSTRUCTION COST IMPACT

Construction costs continue on an upward trajectory on the back of labour shortage, stiff global competition for resources, sporadic supply chain disruptions, the energy crisis, global threats and conflicts, and other market uncertainties. Within the region, material costs, labour availability and supply chain logistics make up the dominant factors affecting construction cost escalations, suggesting that these areas play a crucial role in keeping costs stable.

Government interventions (such as price control measures and legislation) in some countries have helped reduce cost risks. In Vietnam, costs and supply of locally mined minerals as construction materials will be monitored under a mechanism to ensure progress of projects. Meanwhile, contractors of public housing projects in Singapore were protected from fluctuations in steel prices for an extended period when prices rose by more than 75% at its peak, compared to pre-COVID costs.

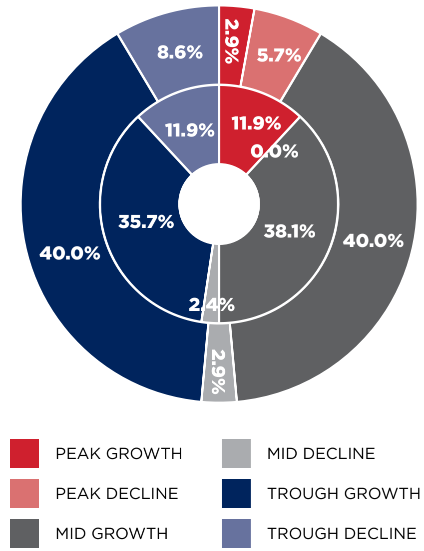
Rising interest rates and inflationary pressures remain a risk over the medium term, with projects in various markets trending over budget. In terms of demand for new developments, rising interest rates are likely to hurt pre-sales. Potential homeowners are holding off on buying and developers are reducing the number of new launches in the private sector. Worries about the economic outlook in the new year are also likely to dampen demand.

RLB TPI ANNUAL % MOVEMENT

	CURRENT		PREVIOUS		MOVEMENT	
	2022	2023	2022	2023	2022	2023
HO CHI MINH CITY	**4.6**	**5.1**	8.8	3.0	*(4.3)*	*2.1*
JAKARTA	**5.1**	**0.0**	5.1	NP	*0.0*	*NP*
KUALA LUMPUR	**3.0**	**4.0**	3.0	NP	*0.0*	*NP*
SINGAPORE	**8.8**	**5.0**	6.5	3.0	*2.3*	*2.0*

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

MARKET SECTOR ACTIVITY



OUTER RING - MARKET SECTORS AS AT Q4 2022
INNER RING - MARKET SECTORS AS AT Q2 2022

Surf Lakes, Los Angeles, America

NORTH AMERICA

CURRENT MARKET CONDITIONS

Amid recessionary fears, continued inflation and higher staffing costs, overall commercial construction activity has remained strong. With this demand for construction services, there are some significant challenges impacting construction schedules and the ability to reach profitability goals that are resulting from supply-side issues including worker shortages, equipment delivery delays and elevated materials prices. While it is good news that there is this strong demand for construction services, it has been impacted by supply chain issues, limiting companies' ability to fully benefit from this current demand. That demand will likely continue to grow as Infrastructure Investment & Jobs Act (IIJA) projects come to fruition.

According to the U.S. Department of Commerce, construction-put-in-place during July 2022 was estimated at a seasonally adjusted annual rate of $1,777.3 billion, which was 0.4% below the revised June estimate of $1,784.3 billion, and 8.5% above the July 2021 estimate of $1,637.3 billion. In Canada ,the first six months of 2022 saw the highest-ever investment totals recorded in the Greater Toronto Area commercial real estate investment market. The first half of the year registered record-breaking investment in residential land, followed by industrial assets, both of which are still in high demand heading into the second half of the year. The investment surpassed $19.2B in the first two quarters of 2022, a 41% increase over the same period in 2021.

Workforce shortages are so severe, they are having a significant impact on construction firms of all types and all sizes. A recent survey of firms found that 91 percent of construction firms are having a hard time hiring workers, which is contributing to increased costs of projects too. These staffing shortages are compounding the challenges of supply chain disruptions, inflating the cost of construction materials and creating uncertainty around delivery schedules and product availability. While the future of supply chain disruptions cannot be accurately predicted we know it's important for commercial construction companies to become more actively involved in developing a more resilient supply chain, using upgraded technology and employing more proactive forecasting.

CONSTRUCTION COST IMPACT

Inflation is having an impact on supply chain challenges, with material prices rising sharply in the commercial construction sectors. Although the annual inflation rate in the US eased for a second straight month to 8.3 percent in August, it is still at a 40-year high and above market forecasts of 8.1 percent. When combined with the related, rising interest rates, inflation is impacting the cost of everything from materials to wages, and with volatile pricing predicted to continue, certain existing construction supplies, like glass, concrete and lumber, will remain at risk.

Overall material costs rose 10 percent nationally in the first half of the year, with specific shortages in glass and concrete. From July to August, the price of materials and services used in nonresidential construction finally dropped by just over one percent, but it was the dramatic drop in fuel prices that masked the actual cost of construction supplies.

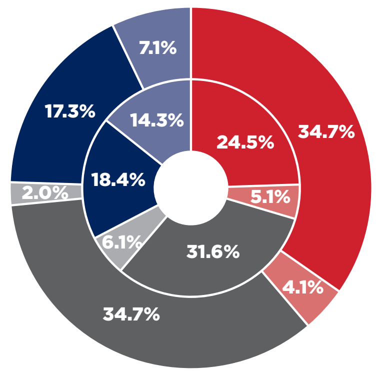
Energy prices have soared 34.6% over the past year, the fastest since September 2005. Food jumped 10.1% and the cost of fuel oil more than doubled, jumping 106.7%—the largest increase in the history of the Consumer Price Index (CPI), which dates to 1935.

RLB TPI ANNUAL % MOVEMENT

	CURRENT 2022	CURRENT 2023	PREVIOUS 2022	PREVIOUS 2023	MOVEMENT 2022	MOVEMENT 2023
BOSTON	**9.7**	**8.0**	9.0	7.5	*0.7*	*0.5*
CHICAGO	**10.0**	**4.5**	7.0	3.0	*3.0*	*1.5*
DENVER	**8.8**	**7.0**	8.4	7.0	*0.4*	*0.0*
HONOLULU	**4.7**	**6.0**	5.1	6.0	*(0.4)*	*0.0*
LAS VEGAS	**8.0**	**6.5**	7.0	6.0	*1.0*	*0.5*
LOS ANGELES	**7.2**	**5.0**	6.0	5.0	*1.2*	*0.0*
NEW YORK	**7.8**	**7.0**	9.5	7.0	*(1.7)*	*0.0*
PHOENIX	**8.9**	**6.0**	7.1	5.5	*1.8*	*0.5*
PORTLAND	**10.4**	**7.0**	6.5	5.5	*3.9*	*1.5*
SAN FRANCISCO	**5.7**	**5.0**	5.6	5.0	*0.1*	*0.0*
SEATTLE	**10.2**	**5.0**	8.5	3.5	*1.7*	*1.5*
WASHINGTON D.C.	**8.8**	**7.0**	7.5	6.0	*1.3*	*1.0*
CANADA						
CALGARY	**8.3**	**5.0**	5.5	4.5	*2.8*	*0.5*
TORONTO	**12.3**	**7.0**	9.0	5.0	*3.3*	*2.0*

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

MARKET SECTOR ACTIVITY



PEAK GROWTH
PEAK DECLINE
MID GROWTH
MID DECLINE
TROUGH GROWTH
TROUGH DECLINE

OUTER RING - MARKET SECTORS AS AT Q4 2022
INNER RING - MARKET SECTORS AS AT Q2 2022

Waltzing Matilda Centre, Winton, Australia

AUSTRALIA

CURRENT MARKET CONDITIONS

The Australian construction industry is at a pivotal point. Unprecedented construction activity is being seen across all sectors, and across all states and territories. This activity surge is being fuelled by post COVID-19 legacies such as government funding of home building incentives (both state and federally led), latent commencements of projects put on hold during the lockdown periods and a slowdown in actual output of the industry on the East Coast due to abnormal weather conditions.

Other factors influencing cost increases include the lack of skilled workers around the country. Anecdotally, this shortage has been caused by the exit of foreign workers during the early COVID-19 lockdown period and a decline in immigration for almost two years due to Australia's locked borders. This skilled labour shortage is also being exacerbated by materials shortages, with a complete restructuring of the supply chains feeding the industry across the country. The industrial shutdowns in China, shipping backlogs and general shipping cost increases have all had significant impacts on the supply and pricing of foreign sourced goods.

The value of work yet to be done within the industry reached a record high of $187 billion as at 31 March 2022). This is an increase of 39% from December 2020. This value of work yet to be done (cost to complete) has risen by $41 billion in the past 12 months. This gives rise to more activity in the 'tail' of the current activity surge seen in the past 12 months across the country, with all states contributing to this increase.

Looking ahead into 2023, RLB forecasts that the pressure points in supply chains will begin to ease in parallel with the curtailing of global demand driven by inflationary pressures in all main economies. This easing of demand should allow manufacturing and logistics to resume 'normal' activities. RLB also expects to see a softening of material prices compared to the high levels of 'demand-led price premiums' currently in play.

CONSTRUCTION COST IMPACT

Head contractors have reported continued volatile pricing from the subcontract market, difficulty in confirming pricing, and subcontractors being selective in committing to tenders. Many subcontractors 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 all set to remain constant obstacles as we see out 2022 and move into 2023.

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

With the levels of approvals dropping and issues surrounding cost increases, supply chain uncertainties and labour availability, there could be a slowdown of activity in 2023 to some extent. This will be compounded by rising interest rates from the Reserve Bank of Australia (RBA), and the forecast general slowdown of the economy.

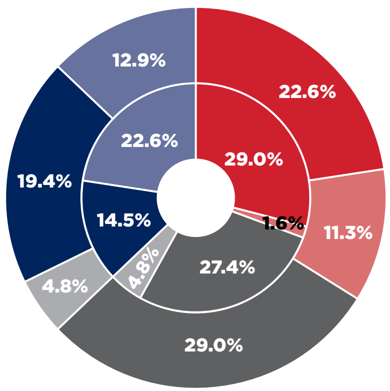
While generally within expected ranges, builder's margins are moving upwards, and are dependent upon contractors' appetite for a particular project. Contractor's preliminaries are on an upward trend due to increasing wage pressure, higher insurance costs, longer duration of projects and general commodity price increases.

RLB TPI ANNUAL % MOVEMENT

	CURRENT		PREVIOUS		MOVEMENT	
	2022	2023	2022	2023	2022	2023
ADELAIDE	12.5	3.8	4.8	3.8	7.8	0.0
BRISBANE	10.5	5.1	10.5	5.1	0.0	0.0
CANBERRA	5.0	4.0	5.0	4.0	0.0	0.0
DARWIN	7.8	5.0	4.0	5.0	3.8	0.0
GOLD COAST	15.5	7.5	11.5	5.5	4.0	2.0
MELBOURNE	8.0	4.0	8.0	4.0	0.0	0.0
PERTH	9.4	5.6	9.0	5.0	0.4	0.6
SYDNEY	6.9	3.9	6.9	3.9	0.0	0.0
TOWNSVILLE	12.6	8.0	12.6	5.5	0.0	2.5

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

MARKET SECTOR ACTIVITY



PEAK GROWTH
PEAK DECLINE
MID GROWTH
MID DECLINE
TROUGH GROWTH
TROUGH DECLINE

OUTER RING - MARKET SECTORS AS AT Q4 2022
INNER RING - MARKET SECTORS AS AT Q2 2022

Christchurch International Airport Limited Agri Export Precinct, Christchurch, New Zealand

NEW ZEALAND

CURRENT MARKET CONDITIONS

New Zealand is in a period of high inflation driven by post pandemic commodity prices, supply chain issues, labour shortages, fuel costs, and central government and consumer spending. Inflation is forecast to remain at high levels for the remainder of 2023. This is despite the central bank aggressively raising interest rates throughout the year to a rate of 4.25% in November 2022.

Residential building activity is showing signs of weakness after years of solid growth. High mortgage rates, low immigration and significant new stock is affecting demand and new build enquiries. Non-residential construction activity has remained strong through 2022 despite being plagued by high costs and labour shortages. Sectors such as aged care, infrastructure including horizontal, schools, hospitals and data centres has been a large part of activity this year and is forecast to continue in to 2023.

It is expected that there will be challenging times ahead for the construction industry next year as monetary policy takes effect. The subsequent drop in demand will stall or stop some currently planned projects.

CONSTRUCTION COST IMPACT

Construction costs have been extremely volatile during 2022. Global factors of commodity prices and shipping and fuel costs have added pressure to a local market experiencing labour shortages and material supply has struggled to keep with the rate of building activity. This has seen project delays and rising costs.

Through the first half of 2022, major projects with long procurement timeframes were unable to secure fixed pricing on materials. There were some price validity periods as short as seven days. This has seen the addition of cost fluctuation clauses to construction contracts, not seen for decades, and an increased project cost risk profile for clients. With commodity prices and shipping costs stabilising over recent months, it appears that contractors are more able to fix pricing at the time of tender. However, it is likely that cost fluctuation clauses will remain in some large contracts for the foreseeable future.

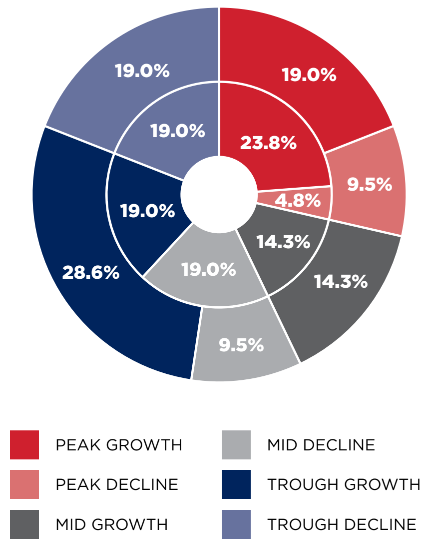
Legislation and building code changes in thermal and moisture requirements will also have an effect on project costs consented from mid-year. Combined with recent year changes on seismic and fire building requirements, compliance is adding significant cost to building projects. On a national average, cost escalation is forecast at 12% for 2022. This is variable depending on location and building type. For example, in the high density residential space there has been cost escalation well in excess of this. The national forecast in 2023 is for the rate of escalation to slow but to continue increasing given underlying economic inflation, wage pressures and global volatility.

RLB TPI ANNUAL % MOVEMENT

	CURRENT		PREVIOUS		MOVEMENT	
	2022	2023	2022	2023	2022	2023
AUCKLAND	12.0	5.5	7.5	5.0	4.5	0.5
CHRISTCHURCH	9.0	5.0	7.0	5.0	2.0	0.0
WELLINGTON	9.0	5.0	4.0	3.0	5.0	2.0

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

MARKET SECTOR ACTIVITY



OUTER RING - MARKET SECTORS AS AT Q4 2022
INNER RING - MARKET SECTORS AS AT Q2 2022

BT London, United Kingdom

UNITED KINGDOM

CURRENT MARKET CONDITIONS

Like many other countries around the world, the United Kingdom (UK) continues to experience high levels of general price inflation and problematic availability of labour at many levels and in many sectors of the economy, as well as virtually static GDP growth. Unemployment levels are low economy-wide, and particularly so in construction. This underpins reports from several regions of resource-strain in labour-intensive trades. Despite all of this, workloads remain high, with the last five recorded quarters showing the highest levels of output on record. For new workload coming to site, the picture is more mixed, but overall figures remain high in most locations.

The political difficulties surrounding the aftermath of Boris Johnson's premiership generated significant instability in UK markets. This has only recently steadied and the pound recovered somewhat on exchange markets. With the US dollar still strong amid the ongoing geopolitical uncertainty, one expected upside of a weaker pound is the stimulation of inward investment. However, evidence of uplift in that area is currently slim. In the housing market, recent surges in interest rates may significantly affect fixed-term mortgage holders and, therefore, the wider residential market when re-mortgaging time comes around. Further, questions and discussions continue around standards in relation to the European market; Government policy is holding to the principle of removing European standards from the UK statute books by the end of next year.

All these factors combine to present a complex mix of strengths and weaknesses regionally and nationally. The challenge for contractors and subcontractors is balancing the need for new replacement workload against a backdrop of elevated materials and labour costs, and low levels of wider market growth. For developers, parallel challenges around stack-up are developing, as demand stands to be impacted by cost of living effects and future prospects for the UK economy as a whole.

CONSTRUCTION COST IMPACT

As noted in the Q2 2022 International Report, tender price movements in the UK became significantly less predictable and uncertain in the first half of 2022. This has eased somewhat in the second half. However, RLB is still seeing UK tender price uplifts in ranges regionally, with low, most likely and a high figure for each location. This use of multiple representations has provided for a broader-based market view. Input costs have risen rapidly alongside sharply increased fuel costs, lengthening lead-times and consequent increased preliminaries and other time-related costs.

RLB's UK construction-orders-weighted-average of tender price uplifts for 2022 now shows a range of between 5.3% and 8.2%—the 'most likely' figure now being over 6.5%. Regionally, high-side figures range from 7.0% to 10.5%, while 'most likely' figures range from 5% to 8.5%. Within these figures, the former bias toward the higher numbers appears to be being replaced with a preference for more central figures. This indicates a maturing of the understanding of how the tendering market is reacting to the ongoing uncertainty.

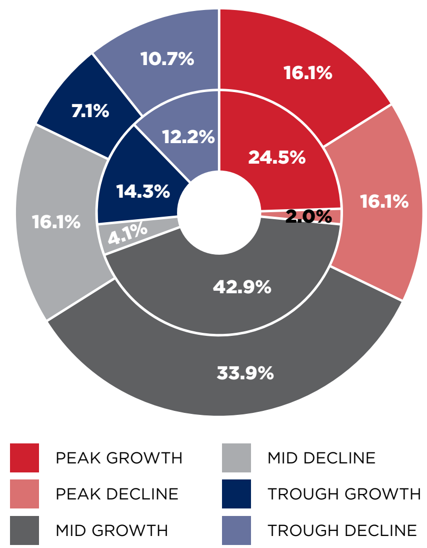
Overall, volatility in pricing is still in play, with continuing materials availability concerns, particularly longer-than-usual lead times for imported goods. This is set alongside high levels of general price inflation and little—if any—GDP growth. With the Bank of England predicting a recession, contractors will be faced with the need to replenish workload in a highly input-cost-sensitive market and in wider market conditions that may challenge developers' stack-ups and new on-site commencements.

RLB TPI ANNUAL % MOVEMENT

	CURRENT 2022	CURRENT 2023	PREVIOUS 2022	PREVIOUS 2023	MOVEMENT 2022	MOVEMENT 2023
CARDIFF	7.0	6.0	NP	NP	NP	NP
BIRMINGHAM	5.5	5.0	5.5	5.0	0.0	0.0
BRISTOL	4.0	3.0	7.0	2.8	(3.0)	0.3
LEEDS	8.5	3.0	6.5	4.0	2.0	(1.0)
LONDON	6.0	3.5	6.0	5.0	0.0	(1.5)
MANCHESTER	7.0	5.5	7.0	5.5	0.0	0.0
SHEFFIELD	8.5	3.0	6.5	4.0	2.0	(1.0)
THAMES VALLEY	5.0	3.5	5.0	5.0	0.0	(1.5)

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

MARKET SECTOR ACTIVITY



OUTER RING - MARKET SECTORS AS AT Q4 2022
INNER RING - MARKET SECTORS AS AT Q2 2022

MAINLAND EUROPE

CURRENT MARKET CONDITIONS

Following-on from the rapid "post-Covid" recovery of GDP figures across Europe in 2021, the year 2022 is forecast by the IMF to have been one of a broad return to zero per capita growth at best for 2022, and most western European countries in the red for the year. While some of the eastern European countries such as Czech Republic, Hungary and Poland will have seen positive figures in 2022, the advent of the Ukraine conflict has not only stifled further recovery, but also resulted in a whole new spectrum of challenges. Ballooning energy costs and hesitance over availability of winter supplies, overlaid on the tableau of Covid and even Brexit effects, provide a set of separately difficult problems and collectively complex and interwoven issues. Low unemployment rates and consequent continent-wide labour shortages, from unskilled through to skilled and professional, are only adding to inflationary pressures, yet providing for little productivity-led growth, due to rapidly inflating input costs. Because of the standing of the construction industry as a producer of about 9% of GDP, and its known potential as a stimulator of economic growth, construction has long been a focus of nations' tactics for climbing out of recessions. However, at this current point, priming the construction pump would seem to be akin to simply inflating the economies of Europe rather than re-floating them. Almost without exception, 2022 has been a year of construction tender price inflation not seen in recent years, not so much because of demand pull, rather by virtue of cost push.

While few in the workforce can really remember the oil crises of the early 1970's and the related cost push and wages spirals that flowed from them, governments everywhere will have to deal with similar effects in the coming year or so, rendered especially problematic by currently low levels of unemployment. Further, the European Commission's website states that: "The updated EU industrial strategy highlights the need to accelerate the green and digital transition of EU industry and its ecosystems. To that end, it proposes working together with industry, public authorities, social partners and other stakeholders." This offers yet more opportunity and challenge to the construction industry, hampered as it is by skills constraints and training gaps.

The expected recovery of the construction industry in Europe in 2022 has inevitably been affected through almost the whole year by the ongoing situation in Ukraine. While Covid has appeared to have paled into the past as an issue, any bounce-back has been overtaken by materials shortages, lead-in extensions and labour shortage concerns, really throughout the region. Downstream effects include live-projects' programmes blowing-out, additional cost pressures to ongoing and near-to-tender projects and new-investment deferrals.

By way of example in Western Europe, the market in Germany continues to be buoyant due to investors having great confidence in the logistics, residential and industrial sectors. However, due to soaring energy costs and continued materials price increases due to their non-availability, some investments are being put on hold. Contractors are already seeing opportunities fading away, which is softening the market already, and we expect a continuation for the year 2023. The hotel sector is making a strong return due to increased travel activities in Germany, and investments overall will remain high. Prices will continue to be affected by soaring energy prices, leading to the possibility of some construction slow-down.

For Hungary in Eastern Europe, due to the war in Ukraine and political uncertainty with the European Union, some new speculative developments are on hold and a significant amount of state-financed projects were deferred. Increasing interest rates have also cooled the overheated residential market. Fewer new building permit applications are being submitted, so the commercial (office, retail) and the housing sectors will slow. Infrastructure developments may slow as well, due to central budget issues and the aforementioned debate with the European Union. However, the industrial sector in Hungary appears to be strong and maintaining that strength as large developments are being started. A number of hotels are also under construction or in the pipeline, but their future is slightly less certain. In the energy sector, extension of the nuclear power capability is still ongoing, and some more traditional power stations are being refurbished or renewed.

RLB TPI ANNUAL % MOVEMENT

	CURRENT		PREVIOUS		MOVEMENT	
	2022	2023	2022	2023	2022	2023
BERLIN	**14.7**	**6.0**	NP	NP	-	-
BUDAPEST	**2.5**	**2.5**	2.5	3.5	*0.0*	*(1.0)*
OSLO	**8.1**	**4.6**	3.5	NP	*4.6*	-
PRAGUE	**23.0**	**10.0**	NP	NP	-	-

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

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

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