



Turner & Townsend

Singapore market intelligence

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Overview

The Singapore construction market saw green shoots at the start of 2022 with construction demand increasing. However, destabilised regional supply chains continue to cause widespread disruption and are inhibiting growth, leaving the construction sector with modest growth of 3.3 percent year on year.

Construction market shifts

Construction demand until quarter three of 2022 reached 60 to 80 percent of the overall demand forecast for the year. This is despite contracts awarded in the last two quarters declining continuously compared to quarter one.

This was particularly evident in contracts awarded by the public sector to civil engineering projects, where inflationary pressures are creating hesitancy to commit to new contracts. Decision makers are resetting their thinking on how increasingly stretched public sector budgets should be allocated to infrastructure programmes. The investments being made are led by a pipeline of public housing, healthcare and major infrastructure projects such as the Cross Island MRT Line (Phase 1).

The private sector is experiencing similar pressures, however the decline in demand is not as pronounced as that in the public sector. While property cooling measures announced by the government in December 2021 and September 2022 may have indirectly contributed to the decline in demand, commercial building demand remains relatively buoyant as hotels and attractions experience a rebound in tourism, and older commercial buildings are targeted for redevelopment. Elsewhere energy storage facilities and biopharmaceutical manufacturing plants are boosting demand.

Singapore's construction industry is focused on tackling inflationary headwinds and supply chain disruption while continuing to address skills and labour shortages that are also contributing to construction cost.

Collaborating to create a step change in delivery

There is recognition from government that the construction sector requires a major transformation to thrive under today's macroeconomic pressures. The refreshed Built Environment Industry Transformation Map (BE ITM) announced in September 2022 aims to help the sector collaborate more effectively across the value chain.

Under the refreshed BE ITM, the government is working to increase use of digital technology to optimise construction programmes. It is expected that the adoption rate of Integrated Digital Delivery (IDD) by Gross Floor Area (GFA) for new developments will increase to 70 percent by 2025. The BE ITM also aims to stimulate Singapore's construction sector to undergo a mindset shift in ways of working, encouraging businesses to work collaboratively towards shared project goals.

Collaborative contracting, which we spotlight on page 10 of this report, is a key element of this step change, whereby contracting parties establish shared goals from the very outset of a project. This approach is already starting to be adopted in Singapore, where there are ten upcoming projects within the Government Procuring Agencies seeking to pilot collaborative contracting.

A proactive and unified approach to driving programme efficiencies will help the sector withstand today's pressures and continue its recovery.

Economic overview

In light of current headwinds being felt across all industries, optimism about Singapore's growth has declined slightly, with the GDP growth forecast being narrowed to around 3.5 percent in 2022 from 3-4 percent.

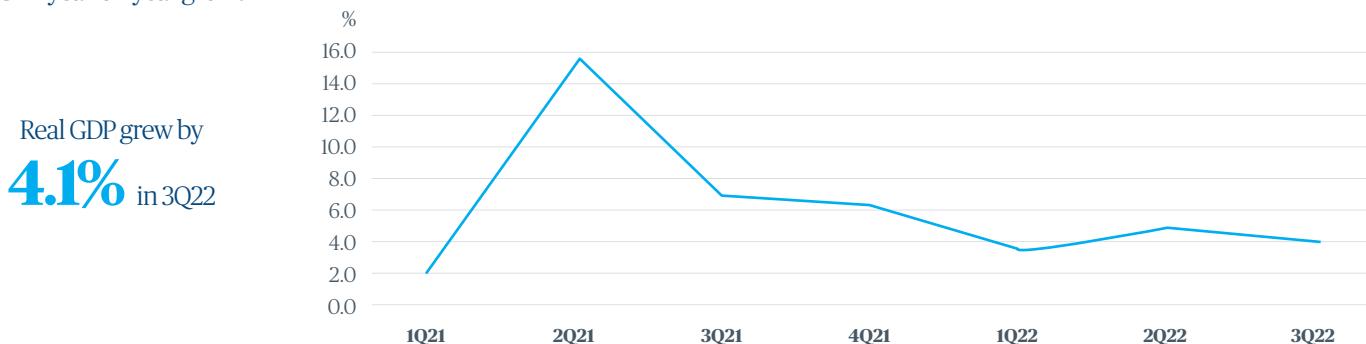
The economy grew by 4.1 percent in the third quarter of 2022 on a year-on-year basis, a marginal drop from the 4.5 percent in the second quarter. The top three sectors contributing to GDP growth in the third quarter were wholesale trade, 'other service industries' and professional services.

The construction sector grew by 7.8 percent in the third quarter of 2022, improved from the 4.8 percent and 3.2 percent expansion in the second and first

quarter respectively. The growth was largely driven by the higher construction output (certified progress payments) in both the private and public sectors.

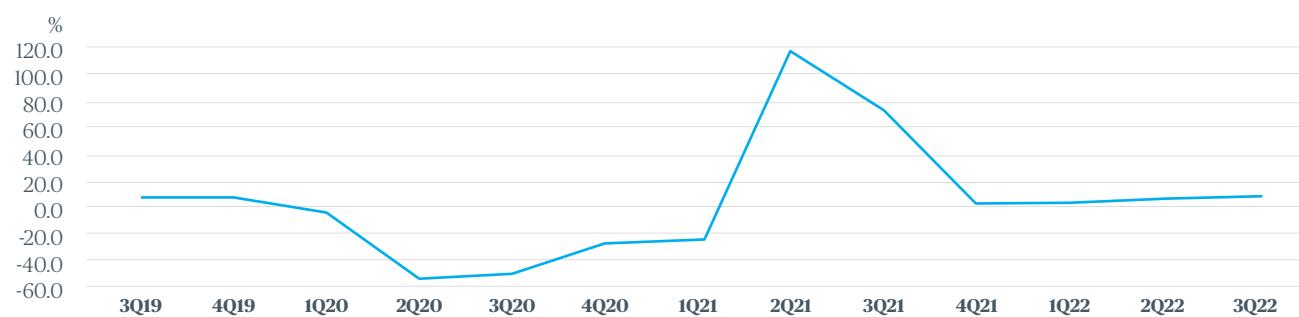
Nevertheless, cost pressures, rising interest rates and global inflationary concerns have resulted in many decision makers adopting a 'wait-and-see' approach to rolling out new construction tenders where more decisive action may have been taken previously.

Figure 1:
Real GDP year-on-year growth



Source: Ministry of Trade and Industry Singapore

Figure 2:
Construction real growth



Source: Ministry of Trade and Industry Singapore

Globally, expanding inflationary pressures and resultant tightening of monetary policy are expected to limit growth in major advanced economies including the US and Eurozone economies. Meanwhile, China faces a deepening property market downturn and recurring domestic COVID-19 outbreaks. Global market disruption is expected to persist for the foreseeable future.

It is anticipated that Singapore's fiscal policy will continue to normalise in the short term, targeting support to sectors still hurt by the pandemic. Policy direction has shifted towards creating a digital, more inclusive, and greener economy through digital adoption and innovation – all while aiming to preserve current financial stability.

Construction demand outlook

\$21 billion of construction contracts were awarded between the first and third quarter of 2022, reaching approximately 60 to 80 percent of Singapore's total construction demand forecast for 2022.

Construction demand, as shown in Figure 3 and 4, refers to the total value of construction contracts awarded in the reference year.

Despite positive indications of a gradual recovery in early 2022, this recovery is now faced with rising construction costs, high inflation and interest rates. This means that programme timescales are feeling the impact of long lead times for key construction materials and equipment.

Demand for some of the sector's key trade skills is traditionally met by Chinese migrant workers, however there is a reluctance from workers to cross borders due to restrictions on their movement as a result of COVID-19 policy. To further improve the living standards and help better contain outbreaks in the future, the government has expanded the Foreign Employee Dormitories Act to regulate the 1,600 migrant worker dormitories under a single law from 1 April 2023. Inevitably, the upcoming changes may affect the availability of worker facilities during

the transition period, and some of the additional costs incurred may be passed on and translate into higher initial construction costs.

Professionals, Managers, Executives and Technicians (PMET) are also in high demand but short supply, creating further cost pressures across the entire value chain. The sector can make itself increasingly attractive to future talent by creating opportunities in digital and sustainability, in some cases luring skilled workers from other sectors who can bring a fresh impetus to the construction industry.

Moving forward, the construction sector should take the opportunity and tap into the various industry transformation support measures from the government to adopt technology, build capability and upgrade their workforce. By better utilising technology and digitalisation between teams and organisations, the industry can also develop more resilient and efficient supply chains equipped to cope with disruption to key materials and equipment.

Figure 3:
Construction sector performance (Q1 to Q3 2022)



Source: Building and Construction Authority

Figure 4:
Singapore construction demand by sector (Q1 to Q3 2022)



Source: Building and Construction Authority

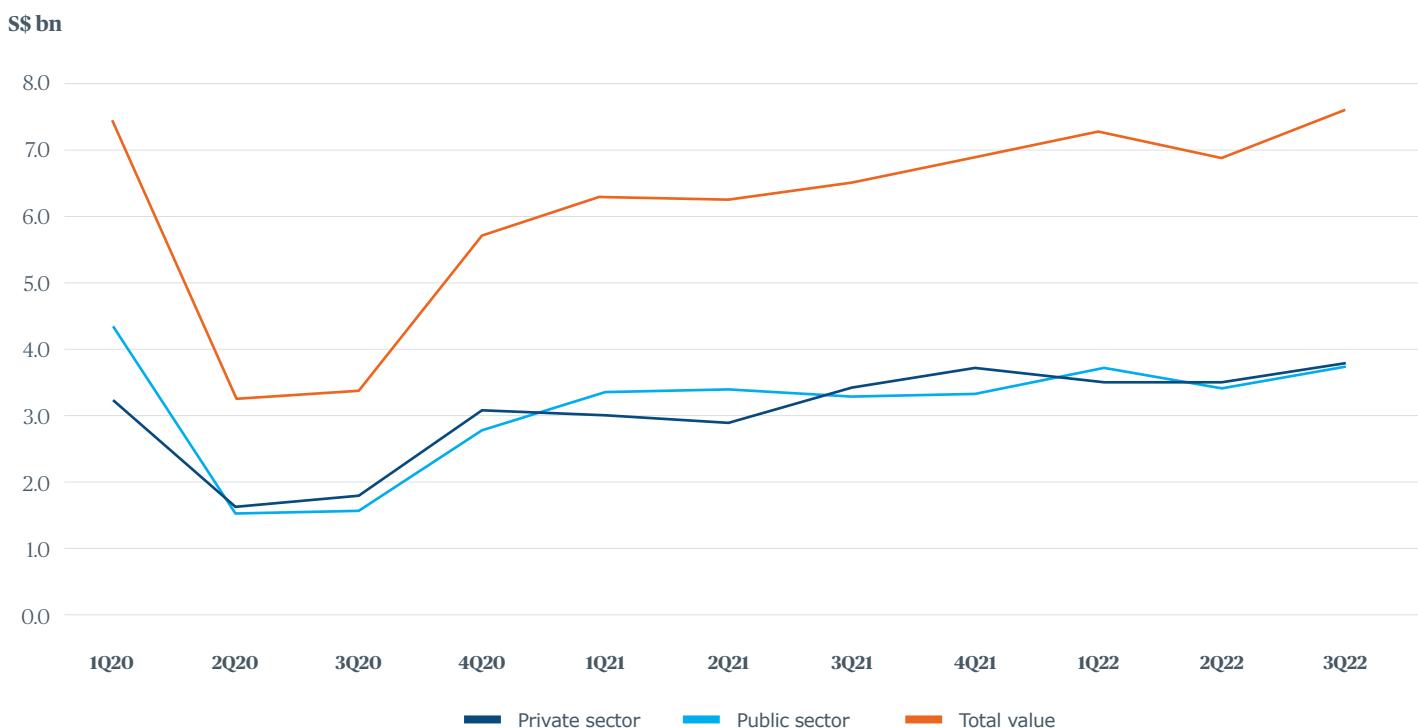
Construction output

Construction output (certified progress payment) remained stable between the first and third quarter of 2022, and at a comparable level to previous quarters. An increasing number of projects that were previously backlogged or delayed are now progressing and back on track for delivery.

The construction output figures are formed by measuring the volume of construction on-site. Construction output, displayed in Figure 5, refers to the total value of certified progress payments, including the work done of ongoing projects awarded in the reference year, as well as those awarded preceding the reference year.

Construction output is now approaching pre-pandemic level. However, looking ahead, it is worth noting that as tender prices have increased significantly, the number of actual projects in the market may be fewer than we have seen in the past.

Figure 5:
Total construction output



Tender price escalation forecast

Tender pricing in the first three quarters of 2022 remained volatile, and continues to increase – albeit at a slower rate than seen in 2021. Positive signs have emerged of renewed efforts to address rising inflation, supply chain disruption and skills shortages.

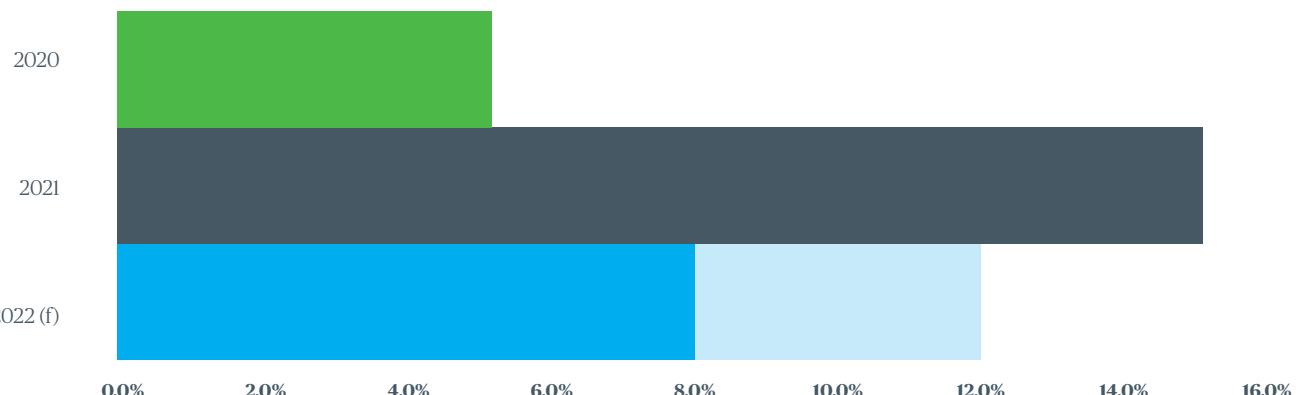
Key construction material prices increased at a slower and steadier pace in the first three quarters of 2022, including steel bars, aggregate and concreting sand. Supply chains have been universally impacted by huge backlogs in shipping ports around the world, however recent freight rates have somewhat softened.

While there has been some easing in global supply chain disruptions, the market remains volatile. Recent tenders continue to be at a relatively high pricing level, reflecting that contractors are still adopting a cautious tendering approach. Organisations should continue to factor in the long lead times required to

procure major equipment, and recognise the impact on project schedules and potentially higher costs.

Taking all headwinds into consideration, tender price escalation for 2022 is anticipated to exceed the upper bound of the earlier forecast range, potentially in the range of 8 to 12 percent. For some projects, tender pricing higher than the forecast cost escalation range may be seen as the risk assessments by contracting companies vary and are difficult to ascertain. Any sudden upswing in construction demand could disrupt the supply chain once again and cause tender prices to escalate further.

Figure 6:
Tender price escalation forecast



Other factors affecting construction cost

Labour

In 2022 the labour pool has been bolstered by an increase in the number of migrant workers coming to Singapore, primarily from India, Pakistan and Bangladesh. The government's easing of border controls has enabled the migration of approved workers via contractors.

While the costs of onboarding these new workers have somewhat softened, they remain high due to COVID-19 precautions on entry and the cost of shared accommodation.

The government's drive to implement a standardised skills framework is a welcome step that will help organisations plot their roadmap to the talent pool they need to deliver programmes.

Fluctuating exchange rates

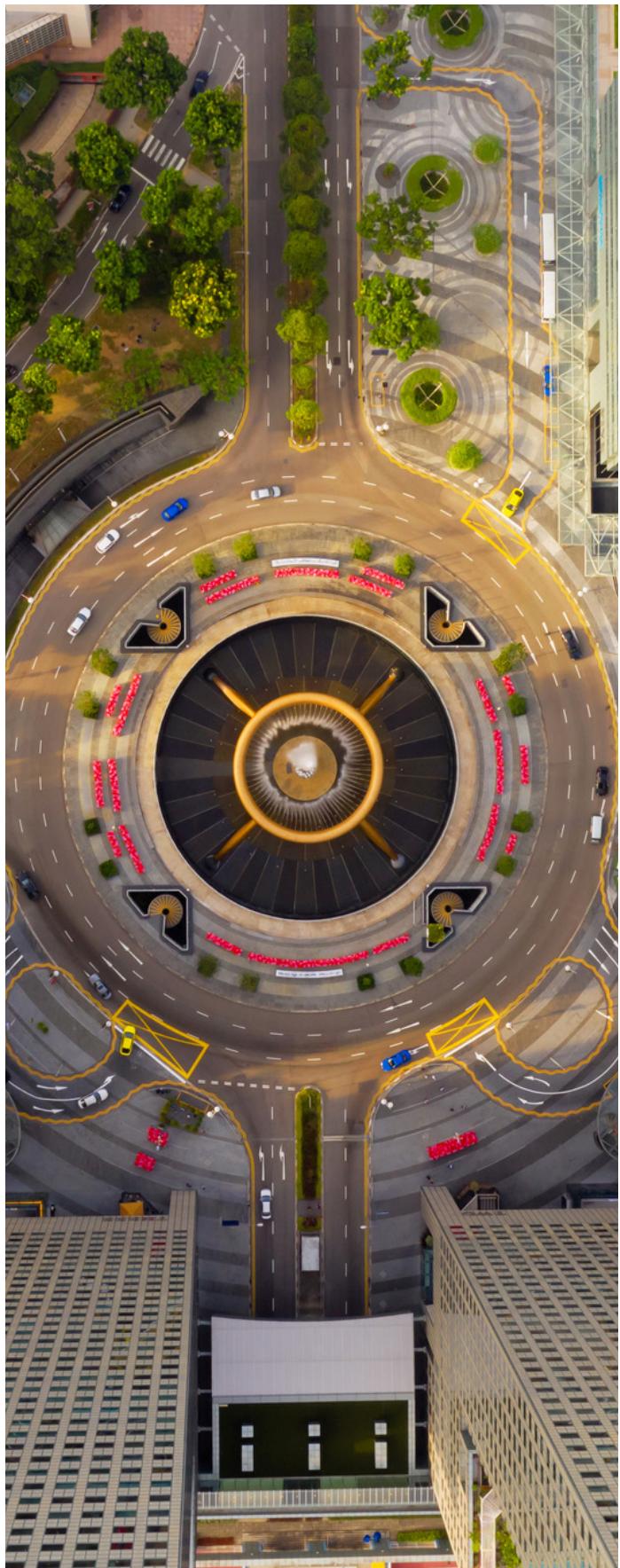
Current fluctuations in exchange rates are causing turmoil in the procurement of key materials and equipment.

It has become more expensive to purchase construction items and equipment that are transacted in US Dollars (USD) due to the strengthening of the USD currency.

Key construction material market prices

Cement and ready-mixed concrete, which are among the most commonly used construction materials in Singapore, have both seen significant cost increases over the past three quarters. Prices of these materials, predominantly imported from Japan and Malaysia, are projected to continue increasing further.

Prices remain high across the board, although further imports led by Malaysia including aggregate and concreting sand have seen more modest increases in 2022, while the cost for steel reinforcement bars has declined marginally compared to end of last year.



Key construction material market prices

Materials	Dec 2021	Sep 2022	% change
 Steel bars (\$/tonne)	1,105.50	1,072.60	-3.0%
 Cement (\$/tonne)	97.50	118.60	+21.6%
 Aggregate (\$/tonne)	20.10	20.80	+3.5%
 Concreting sand (\$/tonne)	23.00	22.50	-2.2%
 Ready-mixed concrete (\$/m³)	104.20	118.60	+14.0%

Source: Building and Construction Authority

Spotlight on

Collaborative contracting

Approaches to collaborative contracting focus on creating value through enhanced project management and collaborative practices - a model which can help re-energise and drive innovation in Singapore's construction sector. Adopting collaborative contracting is not just a question of new contract models, but also requires a shift in mindset, behaviours and touchpoints between all parties involved.

Adoption of collaborative contracting to date

Singapore has seen some positive progress in adopting collaborative contracting. The Building and Construction Authority (BCA) of Singapore recently developed an Option Module for Collaborative Contracting for the Public Sector Standard Conditions of Contract (PSSCOC). The Option Module is being trialled at JTC's ongoing Punggol Digital District project and will be implemented in 10 upcoming public sector projects.

The PSSCOC Optional Module's key features include:

- collaborative working relationships
- proactive project management
- early warning mechanism
- partnering workshops
- dispute settlement through dispute board (optional)
- key performance incentives (optional)

These features are a critical foundation both for contractual requirements and the behaviours which drive collaboration.

Taking collaborative contracting to the next level

Singapore's Built Environment Industry Transformation Map (BE ITM) seeks to improve project planning and execution through better collaboration between clients and the supply chain, recognising the need for greater collaboration across various stages of the design and development process.

- Integrated Planning and Design (IPD), creating shared design considerations and goals across a building's entire life cycle
- Advanced Manufacturing and Assembly (AMA), increasing automation and streamlining Design for Manufacturing & Assembly (DfMA) – contributing to a higher quality work environment that will attract and retain talent
- Sustainable Urban Systems (SUS) to accelerate decarbonisation efforts – in line with the Singapore Green Building Masterplan – through efficient building management, using Integrated, Aggregated and Smart facilities management

For firms in the Built Environment sector this will mean identifying new ways of working and technological innovation that can shift the needle on accelerating and optimising programme delivery.

“Collaboration is fundamental to a productive and resilient Built Environment sector. We witnessed this first-hand during the pandemic, where progressive developers and main contractors leaned forward to support each other and their networks during trying times. This must be the way forward in a post-pandemic world that continues to be fraught with uncertainties.

I encourage all firms to strengthen their contract, project and risk management practices, and consider adopting contract provisions that deliver projects in the true spirit of collaboration. I am heartened that Turner & Townsend is leading the industry on this front and look forward to working with Sze Boon and his team to drive this change.”

Kelvin Wong
CEO, Building and Construction Authority of Singapore

Selecting the right contract model to enable collaboration

Commitment and support at a senior level – from clients and developers, to consultants and contractors all project stakeholders are key to driving a collaborative culture. This will be enabled by establishing a partnering workshop at the onset to align all key stakeholders, and similar workshops at key project milestones in order to realign, to discuss and resolve key issues. This should be underpinned by an appropriate Form of Contract.

Collaborative contracting is still a relatively unfamiliar approach for many in the Singapore construction industry, and will take time to disperse throughout the industry. The chosen Form of Contract will depend on organisations' appetite for risk sharing and cooperation. Like the PSSCOC, the industry could consider creating an Option Module with selected collaborative contracting provisions on existing standard Forms of Contract (such as SIA or REDAS D&B) as an initial step to build familiarity with a collaborative contracting approach.

As more firms become familiar with the principles of collaborative contracting, this could pave the way for

even more progressive forms of collaborative contracting to be adopted in Singapore.

For firms that wish to adopt collaborative contracting in its true spirit, there are several of such Forms of Contract available including the NEC4 contract, which is commonly adopted in the United Kingdom (UK) and Hong Kong, as well as JCT in the UK. This Form may be considered on more complex projects once Singapore's construction industry has developed the required competencies and capabilities.

Typically, collaborative models utilise outcome-based contracts, with profit achieved through outcomes rather than as a function of cost. Risk is apportioned according to capability to manage it, and savings through improved execution are shared between the client and the supply chain to incentivise investment in performance and innovation.

Singapore can also draw inspiration from the various contracting models that have been developed by other countries seeking to improve relationships between clients and contractors. These have been particularly extensive in the United Kingdom, where complex programmes focus on achieving shared objectives through improved behaviours and better sharing of risk and reward.

Delivering change - a UK perspective

Moving from traditional transactional relationships to a more collaborative environment focused on outcomes requires active management.

The British Standards Institute's (BSI) standard ISO 44001 "Collaborative Business Relationship Management Framework" proposes the following contract features for successful collaboration:

- Clear contract terms which encourage appropriate behaviour and identify the potential impacts on or conflict with the aims of collaborative working
- Clear performance requirements and measurement methods
- Clear risk and reward models, issues management, sustainability expectations, knowledge sharing, and exit mechanisms

The ISO 44001 framework requires an assessment of collaborative capabilities through key aspects of a business relationship, identifying capabilities, weaknesses, and risks.

Both the ISO 44001 Framework and the Institute of Consulting Engineers' Project 13 model allow organisations to assess their organisational maturity, from which a transformation plan can be developed. This approach has been successfully adopted in the UK by a range of organisations including the Ministry of Defence, EDF, Network Rail and Scottish Water, and contractors such as Atkins, Jacobs, and Siemens.

Parties are required to put in place a management plan against each element of the framework, to facilitate continuous improvement and build trust to support a collaborative relationship.



Embedding the culture and behaviours to support collaborative contracting

Contract models provide the structural framework to support a new approach, but this is only half the battle. Behaviours and culture are often overlooked in the early stages of project planning or procurement but, if incorporated into the strategy and set-up of projects, they create a strong foundation for collaboration. Key steps on the journey should include:

- Defining and understanding where responsibilities sit across the lifecycle and what the respective cultures and behaviours are to enable alignment
- Adopting behavioural assessment centres for management staff to ensure cultural fit
- Having a clear purpose and establishing key roles to lead in the development of integrated teams
- Establishing systems and tools to support the creation of an environment which encourages aligned behaviours to deliver desired outcomes

The future of collaborative contracting in Singapore

Succeeding at collaborative contracting requires a level of capability to be developed in both client and contracting organisations – the most fundamental being the right culture and behaviours focused on collective commitment.

Drawing from the UK's successes in this area, those organisations which can build and invest in a collaborative approach will unlock transformational efficiencies and new levels of innovation. Singapore has a golden opportunity to accelerate its own journey by applying some of these tools to its own environment and directing stakeholders towards shared goals.

Charting the journey ahead

Moving the Singapore construction sector's recovery to the next level will require a sustained focus on skills, collaboration and progressive procurement models.

The current construction environment is seeing rising construction costs, high inflation and high interest rates. In addition, programme timescales are being impacted by long lead times for key construction materials and equipment. Collectively, these trends are becoming the norm which is challenging the industry.

While Singapore's recovery can be expected to remain resilient overall and outperform similar

economies, uncertainties remain around further potential supply chain disruptions, even higher commodity prices, and fluctuations in exchange rates – as currently seen with the outperformance of the US Dollar against the Euro.

Construction organisations can shift the dial on adopting collaborative contracting by instilling collaborative programme management principles that are driven from the very top.

“ The Singapore construction sector faces many challenges, including skills shortages, rising construction costs, high inflation and interest rates and supply chain challenges.

Collaborative working and contracting models offer the opportunity to tackle these challenges, by bringing clients and the supply chain together to deliver shared and agreed outcomes.

At the same time progressive procurement strategies should be deployed not only to tackle current cost inflation and delays, but also to build resilience to future macroeconomic events.

Couple this with a relentless focus on creating an attractive employment proposition to attract the talent for the future, and organisations can transform the way they work to ensure sustained success.”

Khoo Sze Boon
Managing Director, Singapore and Vietnam



About Turner & Townsend

Through the commitment, capability and care our team brings we build trust between clients, suppliers, governments and society. Delivering better outcomes that have a positive impact on the world around us.

We work smarter to face the challenges of the future; bringing the clarity that helps teams to realise their full potential across the real estate, infrastructure and natural resources sectors.

It's how we've made the difference for 75 years.

Transforming performance for a green, inclusive and productive world.

Our team



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