

buildingsight

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to build infrastructure



financing the future

Delivering global infrastructure



editor's letter

We are proud to deliver the first edition of Building Sight.

Since our inception in 1988, JLT Construction has undergone transformative growth. We are now a global network of insurance specialists capable of meeting clients' needs in every continent of the world, across all construction and engineering disciplines. This new publication, with contributions from our global team, is evidence of our reach.

Within this, and each future edition, we will address a hot topic in the global construction industry.

The theme for the first edition is infrastructure, the development of which is critical to both the emerging and developed economies, underpinning all global growth and the heartbeat of the construction world. We hope that you find the articles stimulating and informative.

The intention of both Building Sight, as well as its sister publication Constructive Insight (a global online publication on insurance market trends in the construction industry), is to add value for our clients and the construction industry.

If you have any questions, would like additional information or have a topic suggestion, please contact your local JLT office.

We would like to wish you all an enjoyable festive season and a prosperous 2017.

PAUL KNOWLES
CEO of JLT Specialty

UPfront

RENEWABLE INNOVATIONS



Renewable investment verification launched

A major growth area for infrastructure investment is renewable energy. JLT has created an Investment Grade Verification methodology for renewables investors, in partnership with Modern Energy Management and law firm Watson Farley Williams. It has already been used for projects worth over \$2.6 billion throughout Asia, South America and Africa.

Poul Hansen, Head of Renewable Energy at JLT Specialty, says: "We work with investors to identify risks at all stages of project development, reduce capital and operational expenditure, and give more certainty to life-cycle costs.

"This enhances projects' credit worthiness, and creates long-term financial drivers for investors, particularly in high-risk emerging markets."

Another innovation from JLT is a product to protect wind turbine assets, which are costly to replace. Hansen explains: "Our product allows windfarm operators to reduce the load on their turbines – a process known as curtailment. We then insure them against the resulting fall in revenue."

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CONSTRUCTION ACADEMY

Sharing knowledge: JLT Asia Construction Academy

JLT Asia held its 5th Construction Academy on 7-8 December. The 25 delegates from around Asia were given the opportunity to gain further knowledge, skills and experience through collaborative learning.

Over the two days participants gained a greater understanding of classes of construction insurance. The content also covered areas such as contractual insurance requirements, the role insurance plays in project financing, political and credit risks in emerging markets and how to effectively manage claims to maximise indemnity.

Stephen Boddington, Regional Construction Managing Director of JLT Asia, says: "We are proud of our ability to share our knowledge and insights by delivering first-class training and development opportunities to our clients and prospects."

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BUSINESS SUCCESS

UK Projects team achieves HS2 success

Congratulations to our UK Projects team on being appointed risk and insurance adviser for Phase One of the High Speed Two (HS2) rail project. JLT will arrange and manage an owner-controlled insurance programme for the construction of the HS2 network, which will run from London to Birmingham.

Through a competitive tender process, the team highlighted JLT's experience of working with public sector entities, on international rail projects, and on major project placements.

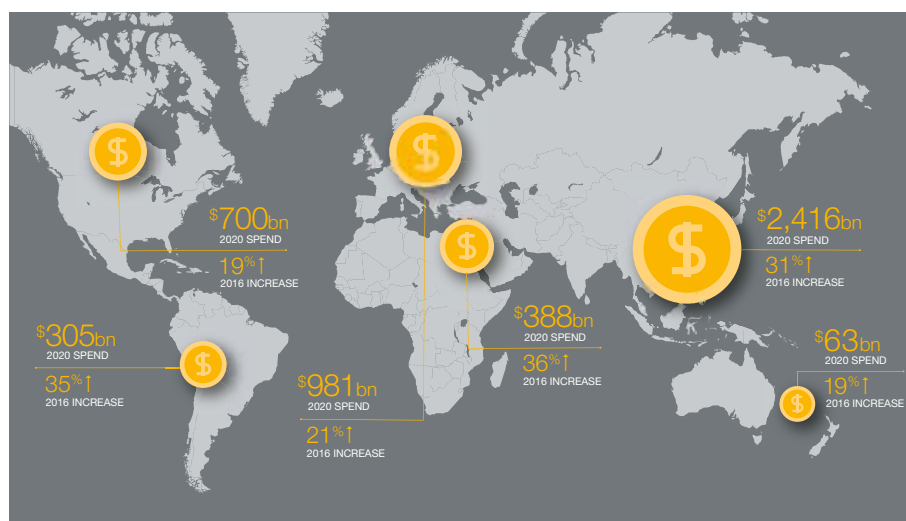
With an estimated £22 billion value, HS2 will be the largest civil infrastructure project in the UK for many years. JLT's appointment underlines our market-leading position in the construction sector.

For more information, email andrew_birt@jltgroup.com

FORECAST

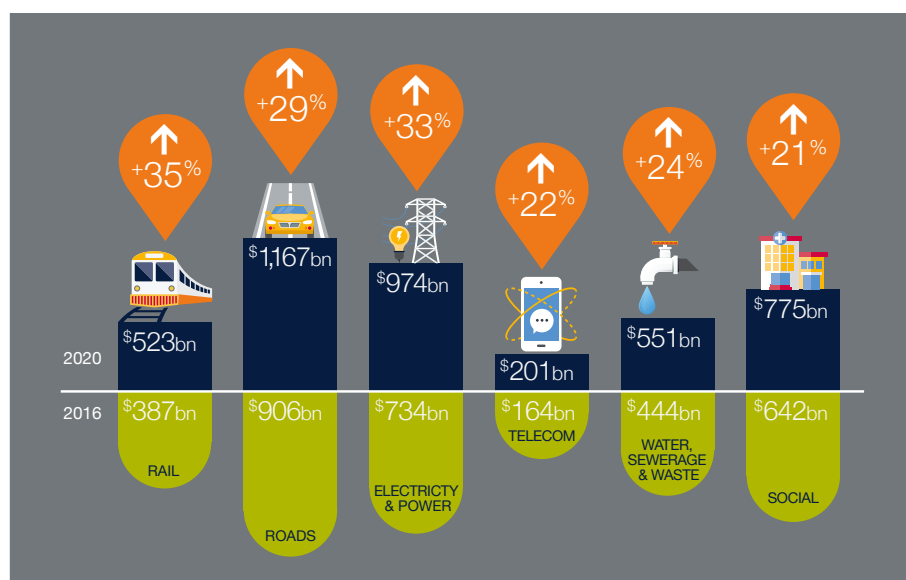
Global infrastructure investment forecast

Global infrastructure investment in 2016 is forecast to exceed \$3.81 trillion, with 50 per cent of the spend in Asia. By 2020, this is expected to rise by 28 per cent to \$4.85 trillion, with the Asian share maintaining its significant contribution. From a growth perspective, the largest percentage uplift is forecast in both the Middle East/Africa and Latin America where there will be an increase on the 2016 spend by more than a third.



▲ Source: Construction Intelligence Centre (CIC)

When considering the relevant sectors, spending patterns expected in 2016 are not forecast to change materially over the next four years, with road, electricity and power attracting over 50 per cent of the investment. Rail will see the greatest increase with a 35 per cent growth versus the 28 per cent average.



▲ Source: Construction Intelligence Centre (CIC)

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infocus



SPOTLIGHT

Managing project delays

Why prevention rather than cure is always the best approach to project delays

Stephen Boddington

Regional Construction Managing Director, JLT Asia

Late-running construction projects are an all too common occurrence. But how can contractors and clients minimise the risks of delays, and how can they manage them when they occur?

First, let's look at the three main reasons why projects fail to stay on time and on budget, as identified by a 2015 McKinsey report:

1. Over-optimism and over-complexity
2. Weakness in organisational design and capabilities
3. Poor execution.

Examples include Boston's 'Big Dig', where an over-optimistic initial assessment of the road tunnel's complexity led to a five-year delay and 190 per cent cost overrun. Similarly, Berlin's Brandenburg Airport has suffered from poor execution. With 150,000 defects discovered to date, it is seven years behind schedule.

The consequences of delays can be severe, depending on the type of project and funding arrangements.

The state-financed Seattle Alaskan Way Viaduct Replacement, a \$3.1 billion tunnel scheme, is currently two years late, with \$223 million of cost overruns – almost solely because of the breakdown of the

tunnel-boring machine (TBM) in 2013. The contractors have borne the brunt of the costs, with significant liquidated damages due to late delivery, even though the TBM was insured.

The Shard in London illustrates how privately funded projects can also fall victim to delays. A delay of 37 weeks on the fit-out of the five-star hotel led operator Shangri-La to sue its contractor for £57 million to cover defects, delayed opening, damages and financing costs.

So how can these costly delays be minimised? Deborah Hein, CEO at the International Centre for Complex Project Management, says: "Problems often begin with over-commitment to rough concepts in their early stages." Therefore, more detailed planning, including engineering and risk analysis before starting construction, is an obvious way of mitigating against risk of delay.

Additionally, strong project management abilities are essential. On Heathrow Airport's Terminal 5, client BAA asked contractors to sign up to one design model and programme, and a 'pain-gain share' mechanism: if they finished on time and on budget, they would all be rewarded with a share from the pot; if they were late, they missed out on bonuses. This was supported by an owner-controlled insurance programme (OCIP), rather than have contractors arrange separate insurances.

This collaborative approach has been more popular with large infrastructure projects where the continued availability of the asset/network is of vital importance to the owner. There are many examples of this in utilities markets, particularly in the UK and Australia. However, its application is likely to be limited for smaller, speculative projects, where price will remain the key consideration.

When delays occur, the scale of the project normally determines whether they can be clawed

back within the original schedule – and the bigger the job, the harder it is to turn around.

There should be three key management focuses in the event of a delay:

- Analyse and deal with delays as they occur
- Communicate with stakeholders, particularly where extensive liquidated damages or financial penalties are at stake
- Identify where time can be pulled back.

Samsung Engineering's contract for the world's largest gas separation plant in Thailand was plagued by delays, but the contractor made up time by sharing resources across contracts to improve efficiency and integrating construction workers with operational staff to accelerate the commissioning process. However, such examples are rare. ■

FORENSIC TIMELINE ANALYSIS

It is better to be safe than sorry with project delay claims – which is where forensic timeline analysis comes in.

This service, provided by Capital Consulting International (CCI), is commonly used to analyse business interruption and delay in start-up (DSU) claims. Forensic timeline analysis reconstructs an accurate picture of a construction project's progress, including causes of delays, extensions-of-time, identification of concurrent delays and their impact on the project's critical path. Delays are invariably caused by complex and interrelated issues. Forensic timeline analysis ensures an accurate, fact-based approach to the claims-handling process.

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PRODUCT UPDATE



Defying the weather

Parametric products can reduce the weather risk faced by construction companies

Iain Drennan

Construction Manager,
JLT Australia & New Zealand

We all know the delay weather can cause to projects – whether it is heavy rain, snow and ice, or temperature extremes that make working conditions dangerous. Construction companies normally manage the risk by building in contingency time or insuring against catastrophic business interruption scenarios. But there is an alternative.

As project owners are passing more weather risk to contractors – who are trying to stay competitive – we have seen the

emergence of parametric insurance solutions. The policy is triggered when a weather event causes a delay and subsequent financial loss for the contractor. The insurance market uses historic weather data to work out, for example, the likelihood of cranes being ‘winded off’ and this data determines the premium level.

In Australia, we are discussing parametric insurance with a contractor who is bidding for a Sydney high-rise residential scheme. The project uses prefabrication, such as bathroom pods, which accelerates the construction programme but requires more craneage and therefore means increased wind risk. We have proposed a parametric solution to insure against the cost of spending longer

on site and for liquidated damages resulting from project delays.

The wet weather in New Zealand only allows for a six-month window for earthworks, so rain events that reduce a contractor's productivity in that period would have a significant financial impact. To transfer the potential financial impact we proposed a parametric product to a contractor bidding for a motorway project north of Auckland. We worked with a specialist parametric insurer to quantify the exposure, which included idle standing costs of staff and hired plant, acceleration costs and liquidated damages. The price of the cover was set according to the size of the ‘trigger event’; so for 2 millimetres of rainfall in one day, the premium would be higher than for 4 millimetres. Furthermore the options presented with regards to limits and retentions meant our client could pick a premium with which it was comfortable. ■

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Q&A



Delay in start-up claims

Common issues and the best approach to managing them

Patrick Harrington

Head of Construction Claims, JLT Specialty

Which projects require delay in start-up (DSU) cover?

Projects where the owner would suffer a significant financial loss if completion was delayed. This could be either lost income or additional debt service costs.

What triggers a DSU claim?

Damage to the works, which are covered under the construction policy, that results in a delay to the project. There are also extensions available for losses at the premises of the insured's supply chain.

How is the DSU indemnity calculated?

The calculation is the number of days late multiplied by financial value per day. Both of

these elements can be difficult to calculate, especially when there are other uninsured causes of delay. Often the contractor and owner do not have a common understanding of the delay at the time of the incident – this often leads to conflict.

How is a delay assessed?

In addition to a loss adjuster, the insurer may appoint a delay analyst. This person will examine every detail of the project programme, why and how it has moved. The aim is to identify the precise progress of the project immediately prior to the loss so that its impact is properly understood.

How do concurrent delays affect DSU claims?

Concurrent delay issues usually arise from other causes of late completion. They ‘trump’

insured delays, meaning there can be limited or no DSU policy response. This leaves the owner and contractor to dispute who suffers those losses.

How do you manage the insurance market during a DSU claim?

We encourage our clients to work with insurers who understand the technical risks, both when underwriting and when dealing with DSU claims. JLT has an open dialogue during investigation, and a proactive approach to management and resolution.

What lessons can be learnt from DSU claims?

DSU claims highlight the benefits of project progress monitoring. The service, provided by companies like Capital Consulting International (CCI) provides robust progress verification for construction projects and a transparent process for sharing information. Effective delay monitoring and post-incident delay analysis can prevent lengthy disputes. ■

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financing the future

It is estimated that \$49 trillion of infrastructure investment will be required worldwide by 2030. How will this be financed?

In this cover story, we look at the various funding models and the associated risks.

Words by
Will Mann

Around the globe, demand for new and refurbished infrastructure is rocketing. But how will this be financed, and at what risk?

Governments need to fund \$49.1 trillion on new infrastructure over the next decade and a half, according to the McKinsey Global Institute. That's \$3.7 trillion a year. But there's a funding gap. The current annual shortfall in investment is \$1 trillion a year – or \$14 trillion between now and 2030 – estimates the World Economic Forum.

There are three broad categories of project around the globe, says Richard Gurney, CEO of Construction at JLT Specialty.

"In North America, and to a lesser extent Europe, there is the renewal of existing infrastructure: transport, utilities, power, telecomms. The American Society of Civil Engineers recently gave US infrastructure a D+ rating. Rebuilding these assets obviously means considerably more construction risk compared to greenfield projects.

"In Latin America and Asia, rapid economic development and population explosion has meant a surge in transport infrastructure demand – particularly airports, metro systems, rail and ports.

"Finally, in the developing world, chiefly Africa, infrastructure needs are more basic – power, water, sewage – but the political and business risks can be higher."

Financing models

Financing models vary from project to project. Sovereign wealth funds, chiefly from oil-producing countries, continue to grow and currently own around \$7 trillion of assets globally, according to the Sovereign Wealth Fund Institute.

\$49.1 tn

Needs to be funded by governments on new infrastructure over the next decade and a half

Then there is Chinese money. Besides its interest in emerging markets such as Africa, China has moved into developed economies such as Australia, where its investment grew almost a third to \$11.1 billion last year – notably in real estate (45 per cent) and renewable energy (20 per cent). China accounts for 54 per cent of Australia's mineral exports, despite a slump in domestic demand. The country has backed associated infrastructure projects such as the Darwin Port expansion, where Chinese firm Langridge Group agreed a 99-year leasing agreement with the Northern Territory government this year.

China has also put money and construction expertise into Turkey. This includes the country's first high-speed rail line between Ankara and Istanbul. The line has been built by the China Railway Construction Corporation, in partnership with two Turkish companies, for \$4.1 billion. Some \$750 million of this was a loan from China to Turkey, according to the *People's Daily*.

Western governments are also keen to foster institutional investment in infrastructure. "Infrastructure projects can offer a steady long-term return, targeting 4+ per cent over 20 years, which is ideal for pension funds," explains Paul Fenwick, Partner in the Construction Division at JLT Specialty.

"Historically, institutional investors have looked for assets that were already built, such as hospitals, schools or wind farms, where they took no risk from the construction phase. But because more and more funds want these projects, they're becoming quite expensive. So the next logical step is new build."

Five years ago, the UK government announced the Pensions Infrastructure Platform (PiP), to encourage long-term investment in infrastructure by pension schemes; PiP promotes itself as a mutual with much lower management fees than available from other fund managers.

To date, the PiP has secured £1 billion of the targeted £2 billion it hopes to draw into infrastructure, including £370 million for the Thames Tideway Tunnel and £130 million for the Aviva Investors PiP Solar Photovoltaics (PV)

Fund. After a period of incubation working with other funds, PiP has now made its first direct equity investment.

Public private partnership (PPP) remains an attractive option where public sector entities are unable to secure finance – over 100 countries are using it internationally, according to the World Bank. The LaGuardia airport expansion in New York demonstrates how the PPP model can be used to finance the upgrade of an existing asset [see box].

Although its popularity has dwindled in the UK, PPP continues to evolve as a financing model in the country. A hybrid version is being used on the Thames Tideway Tunnel. A group of funds – Allianz, Amber Infrastructure Group, DIF and Dalmore Capital (including PiP investors) – will finance around £2.8 billion of the project, with the remaining £1.4 billion coming from Thames Water. In addition, the UK government is reported to be considering the use of the new Private Finance 2 (PF2) model across multiple sectors with a pipeline of projects promised for early 2017.

At the front end, construction risk management has improved considerably, says Paul Knowles, CEO of JLT Specialty. “The loss record has come down by over half during the last ten years,” he says.

“At the front end, construction risk management has improved considerably.”

Paul Knowles, CEO of JLT Specialty

Tunnelling, for instance, was considered almost uninsurable after the Heathrow Express tunnel collapse in 1994, but increased demand has brought technical improvements, notes Knowles.

Risk management

“Contractors spend more time understanding the risks, such as utilities locations, so third-party liability losses have fallen. Clients also allocate the risk more appropriately,” he says.

“That’s made the insurance sector more prepared to work with construction companies to offer flexible solutions, which can make them more competitive. Parametric products, for weather-related losses, are an example [see page 5]. The number of insurers writing the class has increased threefold over the last

decade, and there’s now a surplus of capital wanting to be involved with projects.”

“At a geopolitical level, risks can be more of an issue although the political risk market has expanded its offering markedly in recent years, most notably in terms of the depth of market capacity and resultant competition, which is benefiting pricing, and availability of longer cover, which can go out to 15 years, sometimes beyond. In the past, PPP investors, for example, wouldn’t go into a country if there is not a stable political environment however the potential for support from insurers is changing this,” Knowles says.

“But, generally, government agencies want to promote trade. On the Ho Chi Minh metro in Vietnam, we’ve provided cover for the Japanese banks and contractors who are financing and building the system.”

As the infrastructure market grows, Knowles is encouraging clients and contractors to work with JLT to help manage their risks, develop bespoke insurance solutions and make their projects more cost-effective. ■

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Will Mann is a construction specialist journalist and former trade magazine editor.



LaGuardia Airport: A PPP exemplar

The \$4 billion LaGuardia Airport Terminal B project in New York reached financial close last summer. It’s the largest PPP in the USA to date, and a rare example of a major private investment in America’s creaking infrastructure.

“LaGuardia shows that the US PPP market has crossed the Rubicon when it comes to procuring large transportation projects,” says Pat Foye, Executive Director at The Port Authority of New York & New Jersey (The Port Authority), the client organisation.

A key concern of The Port Authority was that the existing airport’s operations would not be impacted by the construction programme. This was chiefly why LaGuardia Gateway Partners (LGP), a consortium including contractors Skanska and Walsh, was awarded the contract.

“LGP won the competitive procurement process because it had an approach that best addressed and mitigated those risks,” says Foye. JLT worked with LGP on its risk management approach, explains Naresh Dade, Partner in the Construction Division at JLT Specialty. “Given the extent of risk transfer from day one, it was obvious that an innovative solution would be required; and we quickly identified the need for a combined construction and operational programme.

We also had some serious considerations in respect of the terrorism risk, and successfully placed the longest, non-cancellable stand-alone terrorism placement in Lloyd’s history.

“On the construction side, risk was minimised by prefabricating as many construction elements as possible, and keeping airside works to a minimum. However, the logistics of the construction programming were complex, to ensure that airport operations could be maintained. In this respect, the client understood what LGP wanted to achieve.”

The programme was placed with a common panel of insurers, who were writing both the construction and operational risks.

“Normally, operational insurers don’t like writing construction, and vice versa,” explains Dade. “But it was necessary at LaGuardia, because, if one component of the construction programme moved, it would have a massive knock-on effect on operations.

“Additionally, we were able to push the insurance market to agree seven years of cover for material damage and operational insurance, compared to the usual one, two or even three at a push.” ■



PPP: where to next?

Despite operational concerns, public private partnership remains a common funding model for infrastructure projects



Naresh Dade
Partner, JLT Specialty

Public private partnerships (PPPs) remain popular around the world, with more than 100 countries using the model, according to the World Bank. PPPs provide immediate infrastructure investment, without public borrowing, and transfer risks to the private sector.

PPP has been more successful for new build projects, as opposed to refurbishment or extension of existing facilities. However, New York's LaGuardia Airport expansion demonstrates PPPs can work for a major upgrade of an existing asset, when construction risk is separated from live operations. The Port Authority, is now considering PPP for projects such as the Gateway Tunnel.

In America president-elect Donald Trump campaigned on a "trillion dollar infrastructure rebuilding plan". His economic adviser has proposed tax credits to encourage \$167 billion of private equity investment in projects, with the remaining \$833 billion coming from debt, also raised by the private sector. While this sounds like a PPP model, details are still sketchy and projects would need to be revenue-earning to provide payback for the private investors.

Once PPP's trailblazer, the UK currently has less appetite for the model. One of the most exciting opportunities in the UK PPP market is the Silvertown Tunnel project – developed to address the significant issue of traffic congestion and unreliability at the Blackwall Tunnel.

Globally PPP is evolving. Canadian pension fund CDPQ is pioneering a new PPP model for transport, which has been dubbed as a "public public partnership". This is where institutional investors take on all of the project risk, including demand and ridership. ■

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Turkey's growth plans

A \$200 billion pipeline means
Turkey's infrastructure sector is booming



Omer Askin
Executive Director, JLT Turkey

Turkey's plans to focus on infrastructure with a \$200 billion building programme through to 2023. Despite the recent political developments, the government has vowed to "push ahead rapidly".

Many projects will be delivered using the 'build-operate-transfer' (BOT) model (typical for revenue-generating projects such as toll roads and bridges). These include the planned Canakkale Suspension Bridge in the Gallipoli area, which at 3.6 kilometres will become one of the world's longest.

Under BOT, a private consortium borrows the money to build the project, and operates it for a period of 10 to 25 years before returning it to the state. Unlike traditional PPP, revenue risk is limited. On the third Bosphorus crossing, for example, the government guarantees a minimum level of toll income. Locally, pure PPP is being used mainly in healthcare; 34 new PPP hospital campuses will be completed by 2018 at a cost of nearly \$12 billion.

The state-financed 'engineer-procure-construct' (EPC) model – where there is no operating concession – is the government's preferred approach for projects such as water, sewage, hydro-electric power, non-toll roads and rail. EPC is likely to be used for Turkey's planned 10,000 kilometre high-speed rail network with the Ankara-Istanbul link completed and transferred to the state-owned rail operator.

However, there is plenty of appetite for private infrastructure investment; according to the World Bank, Turkey closed deals worth \$45 billion last year; 40 per cent of the global total. A growing share of this comes from within Turkey; the new \$5 billion third Istanbul airport, which will be the world's largest, is being financed by six Turkish banks. ■

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Managing Asia's demand for infrastructure

Transport and energy infrastructure will be a key determinant of Asian countries' ability to fulfil their economic potential – but can projects deliver?

“Some \$8 trillion will be committed to infrastructure projects this decade to remedy historical underinvestment and address demand.”

McKinsey & Company

Words by
Mark Smulian

As Asia grows rapidly, so does its demand for new and replacement infrastructure.

The region has one 'developed world' economy in Japan, rising economic superpowers in China, India and, behind them, Thailand, Malaysia, South Korea, Indonesia and other countries enjoying significant growth. As a result, governments face pressure to develop infrastructure to keep pace with burgeoning population growth, mobility and urbanisation.

The Asian Infrastructure Investment Bank notes that “infrastructure investment paves the way for long-term development. Inadequate infrastructure and limited connectivity have long been bottlenecks to growth in Asia.”

Some \$8 trillion will be committed to infrastructure projects this decade to remedy historical underinvestment and address demand, according to McKinsey, with more than 80 per cent of it in energy and transport. Indeed, the region is expected to have 4.8 billion inhabitants by 2050, with approximately 3.3 billion of them living in cities, according to the 2015 UN Development Programme's Asia Pacific Human Development report.

“This relentless expansion generates demand for more sustainable solutions that can transport large populations across a city many times larger than those in the US and Europe.”

Stephen Boddington, Regional Construction Managing Director at JLT Asia

4.8bn

Asia is expected to have 4.8 billion inhabitants by 2050

It is unwise to generalise about Asia, but demand for infrastructure is likely to be largely driven by urbanisation in developing markets, and infrastructure upgrades in more developed economies, says Stephen Boddington, Regional Construction Managing Director for JLT Asia.

“This relentless expansion generates demand for more sustainable solutions that can transport large populations across a city many times larger than those in the US and Europe,” Boddington says.

The world’s eight largest cities are all in Asia. China alone will have an estimated 221 cities of more than one million people by 2025, while India expects 150 such conglomerations. This creates demand not only for transport infrastructure, but also power and water. As Boddington says: “Population centres are growing in resource-poor regions, notably north China, Java and northern India.

“Infrastructure is therefore necessary to transport power and water to these resource-hungry cities. An example is the South-North Water Transfer Project in China.”

Opportunities

Many cities will follow China’s lead, massively increasing the scale of their metro systems, including light rail in situations where tunnelling is too costly.

Countries with many megacities need connections between them. This has led to

an expansion of high-speed rail projects in Asia, such as the Singapore to Kuala Lumpur line in Indonesia, many of which are financed by Chinese investors. Meanwhile, in the developed economies of Japan, Hong Kong and Singapore, governments are overhauling infrastructure from previous decades and filling in gaps, such as the bridge from Chek Lap Kok in Hong Kong to Macao.

Such major transport projects are relatively recent developments, however. The main focus for governments faced with urbanisation pressures is, first and foremost, population control and mobility, Boddington says.

“This has so far led to very inefficient and environmentally unfriendly city designs – key examples being Beijing, Jakarta and Karachi – with an over-reliance on private transportation solutions and highway building.”

Things are starting to change, with a huge increase in green energy opportunities and grid decentralisation. Infrastructure for resources is becoming increasingly important, as many areas have abundant untapped energy generation and water resource reserves, including the Mekong River and geothermal energy in the Pacific Ring.

“JLT has a renewable energy facility for wind, solar and hydro projects, which is attracting a good deal of interest,” says Boddington. The Philippines is a good example, he continues. “The country has an aim to increase its renewable energy capacity to an estimated 15,304 MW by the year 2030, almost triple the 2010 level.”

Asia’s opportunities attract strong interest from international contractors and developers, and should ensure pipelines of construction work for decades to come. ■

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Mark Smulian is a freelance journalist specialising in local government, transport, construction, planning and regeneration.



Hong Kong Airport

Hong Kong International Airport is among the world’s busiest, serving more than 68.5 million passengers and 4.38 million tonnes of cargo in 2015.

It needs a rapid expansion of its capacity to keep pace with growth as, by 2030, it is forecast to handle over 100 million passengers and 8.9 million tonnes of cargo.

To solve this, the airport has opted to expand into a three-runway system (3RS), in an eight-year construction project running from 2016–2024. The estimated cost will be HKD141.5 billion.

JLT has been appointed sole broker for the project. Kelly Outram, Director at JLT Asia, explains: “Given the scale and complexity of the project, local and international insurers were invited to tender for an owner-controlled insurance placement. This included material damage insurance for the works, third-party liability and workers’ compensation.

“To date, it is the largest construction insurance placement in Hong Kong, and pushes the boundary in terms of coverage and innovation.” The tender was managed in accordance with World Trade Organization Government Procurement guidelines.

The project sees the first major use in Hong Kong of the deep-cement mixing process, which is designed to improve the strength of the sub-seabed. This is being used because part of the site is situated on contaminated mud pits, which prohibits conventional dredging.

Works will include reclamation of approximately 650 hectares of land bounded by around 13.4 kilometres of seawall; the construction of a third runway; and a new concourse with 57 parking positions, connected to the existing Terminal 2. Terminal 2 will itself undergo extensive modification and expansion, including the introduction of an automated people mover and baggage handling system. ■



How Chinese investors are changing the landscape

While host nations balance the cost of selling a stake in their economies to Chinese investors in return for capital, local contractors must adapt to a long future in partnership with Chinese allies.

Words by

Antony Ireland

China is clearly the global leader when it comes to capital expenditure on infrastructure. It has spent more than \$1.3 trillion on outward global investment and construction since 2005, according to the American Enterprise Institute (AEI). China's outlay since 2005 includes nearly \$550 billion in energy projects, \$240 billion in transport and \$147 billion in metals.

"In the past 10 years, the biggest Chinese investments went to the US, Australia and Canada and while this investment will continue, more initiatives are in place to allow investment in developing countries in Latin America, the Middle East, Africa and in South-East and Southern Asia in countries such as Pakistan, Indonesia and Vietnam," says Philip Rong, CEO of JLT China.

Deal structure varies from market to market, though Chinese investors typically act as partners alongside host nation governments and other private backers. "The level of finance

“The level of finance the Chinese partner puts into the project often determines the amount of control they have over the direction of the project.”

Richard Gurney, CEO of Construction at JLT Specialty

the Chinese partner puts into the project often determines the amount of control they have over the direction of the project and the contractors chosen,” explains Richard Gurney, CEO of Construction at JLT Specialty.

“Many investors want to retain long-term revenue inflow, having delivered a project through the construction phase. While funding bodies such as pension funds don’t particularly like the construction risk, Chinese investors are prepared to be involved in the risk as well as the ongoing operational risk,” he adds.

While it is common for Chinese firms to set up fully fledged subsidiaries to run projects in developing economies, they tend to favour joint ventures or mergers with local players in more developed markets. Construction of the UK’s Hinkley Point C nuclear power station – one of the most expensive power stations in the world – is a prime example of this trend in action.

State-owned China General Nuclear Power Group (CGN) and Chinese National Nuclear Corporation (CNNC) are taking a 33.5 per cent stake in the project, funding the estimated £18 billion construction cost alongside French energy provider EDF and the UK government. In return, CGN and CNNC are expected to have a significant influence on the choice of construction partners and will enjoy a guaranteed return from the project for the next 35 years.

According to Ben Crabtree, Partner in JLT Specialty’s Mergers and Acquisition (M&A) Practice, the recent decline of sterling now makes the UK an even more attractive

investment destination than before, and contractors in both the UK and Europe should prepare for an uptick of M&A and project bids from Chinese companies over the next 12-18 months.

Balancing act

For developing countries high in mineral wealth but low on engineering capability, China’s influence has many advantages, bringing employment, technical expertise, new infrastructure development and access to new revenue streams. “In return, China gains direct access to natural resources and a portion of the revenue that flows from directly, and indirectly, mining and processing those resources,” says Gurney.

\$1.3tn

China has spent more than \$1.3 trillion on outward global investment and construction since 2005

Meanwhile, in spite of their need to overhaul the infrastructure and generate more homegrown power, debt-laden developed markets, such as the UK, lack available capital and are increasingly looking at Chinese funding to get the necessary mega-projects off the ground – even if it means submitting a certain level of control over their critical infrastructure to foreign interests.

“Over time we will see increasing Chinese involvement creating a new market dynamic for contractors, but with that Chinese investment comes the funding for essential infrastructure, so it is a balancing act,” says Gurney.

In return, Chinese contractors also gain valuable insights in regulation, project management, risk management and risk transfer from their global partners. “Chinese contractors are humble enough to learn from their counterparts in the UK and other mature markets,” says Rong.

However, it is the Chinese who hold most of the power, as well as a lucrative financial stake in the economies in which they invest.



De-risking M&A

With Chinese M&A interest continuing to intensify, Ben Crabtree, Partner in JLT Specialty’s M&A Practice, says sellers of businesses in the infrastructure sector are often offering to pay for buyers to acquire warranty and indemnity (W&I) insurance. W&I covers the buyer against breach of warranty and also ensures the seller a clean exit rather than signing a sale agreement and being liable for a portion of the purchase price if a warranty in the agreement is breached. “This is a huge trend right now,” Crabtree says.

While 96 per cent of JLT’s W&I business is policies for buyers, around half of those policies were introduced to the deal by the sellers, he notes. The insurance market considers infrastructure an attractive risk, meaning sellers can currently obtain good cover for their buyers with relatively low excesses and affordable premiums, Crabtree adds. ■

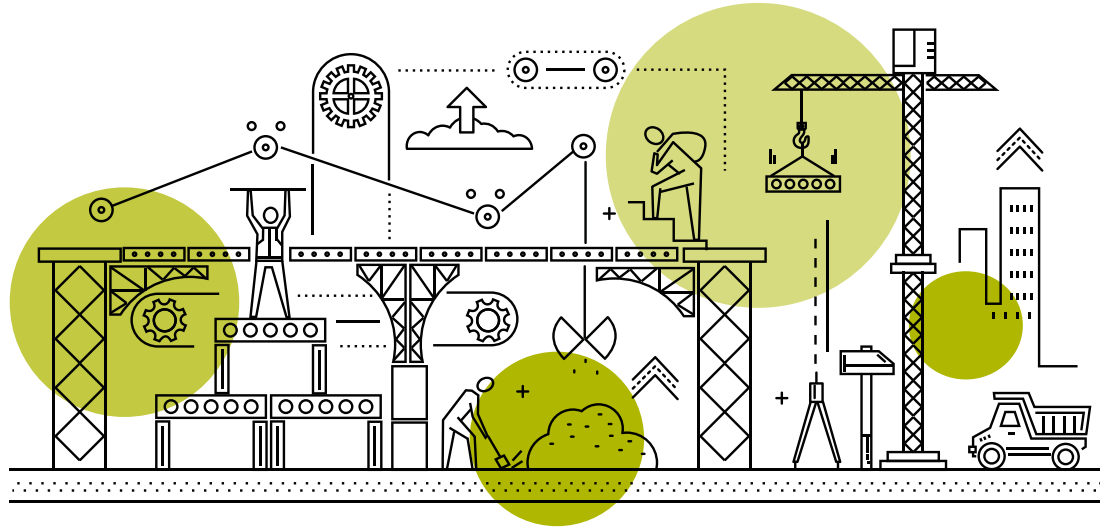
“Contractors in the UK and other countries are getting increasingly used to working with Chinese contractors either on a joint venture or sub contractor basis,” says Gurney, noting that local firms may have to adapt to new supply chains as well as a different business culture.

“Joint ventures are put together with the best of intentions but disputes arise, putting relationships under strain, especially when projects encounter difficulties,” says Gurney.

“Traditional contract dispute resolution mechanisms may not be commonly seen in China, so host nation contractors have to adapt to working with partners who may not seek to resolve disputes in that way,” Gurney says, adding that it is essential contractors invest in building and nurturing strong relationships with their Chinese counterparts. ■

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building the infrastructure to build infrastructure

Many developing countries' economic growth is hindered by failing or insufficient infrastructure. The scheduling of strategic infrastructure is crucial.

Words by
Mark Smulian

Infrastucture construction must be carefully planned, in the right order, to ensure it works optimally to promote economic growth.

There are many stories of badly planned developments: regeneration projects with inadequate transport links, or mines that are unable to move their material. Such failures are not limited to developing economies. The London Docklands redevelopment,

for example, started in the early 1980s, but underground trains that could cope with passenger numbers didn't arrive until 1999.

In growing economies, much of the infrastructure was built decades ago and either is failing or unable to cope with the demands of economic and population growth. These factors also drive demand for entirely new infrastructure in areas being 'opened up' to development.

Simply building whatever appears cheapest or easiest first usually leads to ill-planned infrastructure, which is missing the links needed to fulfil its function.

Phasing is therefore vital. But the phasing required will depend on the nature of the work, notes Stephen Leeming, Partner in the Construction Division at JLT Specialty.

Phased approach

Ports, for example, might be built for coal export, but you can also use them for imports by containerisation in the future; so you may need to plan for different infrastructure requirements from the outset.

"When creating infrastructure for raw materials, you need a road or rail network," says Leeming. "But to establish one in the first place, you need to get equipment and materials in, so you need the infrastructure to allow that."

"In many situations, it's a chicken-and-egg scenario. If you're building infrastructure, you need the ability to supply raw materials, so upfront costs may be high. But it can be cost-effective in the long term."

Examples of logical infrastructure planning can be found in many major developments in the Middle East – where government-directed central planning ensures that development comes off, says Leeming.

"Qatar is a good example of an organised development plan, where they plan for all risks," he points out. "Because of its peninsula location, access routes can become blocked."

JLT has been involved as insurance adviser on the development programme, and as the reinsurance broker for Qatar's new Hamad Port. The new port was needed because the old one was in the middle of the capital city, Doha, and could not effectively receive the volumes of large vessels required to import the resources required for wider infrastructure plans.

Everything in its right place

Established economies can also face difficulties with their order of construction. Turkey is a great example of a country that needs infrastructure to build its infrastructure, says Ömer Aşkın, Executive Director of Turkey's JLT Sigorta ve Reasürans Brokerliği AŞ.

"Railways, roads and ports are insufficient, and this directly affects the efficiency of contractors."

"Many huge construction projects have been going on in Istanbul, for example. But

because of the earthquake risk, and the hilly geographical structure of the city, most of them need very deep excavation works. This means transferring thousands of tonnes of soil from construction sites to outside of the city.

"As we have very heavy traffic problems in Istanbul, this causes serious delays transferring excavation waste, and therefore delays construction."

"If you're building infrastructure, you need the ability to supply raw materials, so upfront costs may be high."

Stephen Leeming, Partner in the Construction Division at JLT Specialty

New highway projects have begun, but many contractors' works have suffered badly due to the traffic in Istanbul, says Aşkın. "The government planned these new highways before allowing contractors to start all of the projects. But nobody had time to wait for the highways to be completed, as this rapidly developing country needs all of the investments urgently and simultaneously".

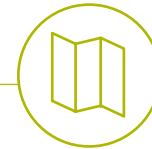
Many Asian countries are also grappling with a lack of infrastructure in the right places, says Stephen Boddington, Regional Construction Managing Director at JLT Asia.

"Urbanisation and the rise of megacities has led to a concentration of services in a single location. This results in pinch points in national infrastructure systems, which require new investments in energy and ports close to population centres, for example."

While outright 'white elephants' are thankfully rare, careful planning of the order of infrastructure construction is essential. ■

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A planned city from scratch

The Lusail Real Estate Development Company (LREDC) is creating the new city of Lusail, 15 kilometres north of Qatar's capital Doha, on a site of some 38 square kilometres.

Lusail will be a planned city of residential, commercial, retail, hospital and leisure facilities, built as part of a strategy to help Qatar diversify its economy away from dependence on oil.

The Qatar National Vision 2030 is the country's roadmap for its future. It aims to transform Qatar into an advanced country by 2030, capable of sustaining its own development, and providing for a high standard of living for its people. The plan seeks to develop a competitive and diversified economy that can meet the needs of Qatar's people, while balancing economic growth, social development and environmental protection.

The Lusail project includes 21.5 kilometres of highways and 39.5 kilometres of water pipes. When complete, it will feature 25,000 homes in 19 planned districts, with a light rail link to the new Doha rail network.

Lusail will likely be best known outside of Qatar for its status as a sports city – it hosted the 2015 World Men's Handball Championship final. The city will boast the new Lusail National Stadium, which will host World Cup matches in 2022. JLT is advising the Supreme Committee for Delivery and Legacy on this facility, and on other World Cup-hosting infrastructure.

Eng. Essa Mohammed Ali Kaldari, LREDC's Chief Executive Officer, has been quoted as saying: "Lusail City is a meticulously planned urban development unlike anything seen before. It will bring to life a comprehensive and vibrant city, master-planned around mixed-use developments that will create diversity, integration and sustainability." ■



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