



MEGATRENDS
FOR URBANISATION OF
Greater Bangkok



FutureTales LAB™

BY

MODC
FOR ALL WELL-BEING

ARUP



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FutureTales Lab

MQDC founded FutureTales Lab (FTL) in 2020 as a research centre to develop future living solutions for Thailand and the world.

In line with the corporate ethos, FTL believes that every living being on Earth deserves a good quality of life.

www.futuretaleslab.com

Arup

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About the cover

A kaleidoscopic treatment has been applied to the imagery throughout the document, reflecting the multitude of possibilities for the future of Greater Bangkok.

Introduction

This report describes megatrends shaping the future of urbanisation in Greater Bangkok, and forms part of a research collaboration between FutureTales Lab and Arup Foresight and Innovation. Collaboration between the two organisations emerged from a shared mission to support the transition to ecologically sustainable, liveable and resilient cities in Thailand and Southeast Asia.

50%

urbanised

10.5m

bustling megacity

Over the past few decades, Thailand has shifted from mostly rural (under 30% urbanised) to over 50% urbanised today.¹ During this time, Bangkok's population has doubled to become a bustling megacity of over 10.5m people.² Rapid urbanisation like this tends to be haphazard, causing social and environmental costs and vulnerabilities.

COVID-19 provides a stark reminder of how vulnerable cities and their citizens can be. This crisis comes at a time of great global transformation. Climate change and biodiversity loss are pressing concerns.

Technologies of the Fourth Industrial Revolution are booming. Energy systems are transitioning to renewables and transportation is electrifying. Social media is opening new horizons for social connection and manipulation, while online platform businesses are bringing customers and service providers closer together.



The present research aims to explore drivers of change and different visions for how Bangkok and nearby towns and cities could evolve to support important environmental, social and economic objectives.

This research defines Greater Bangkok as the Bangkok Metropolitan Region and adjacent urban and economic development areas within daily commuting distance (100-150km) of central Bangkok, such as the Eastern Economic Corridor.

Beyond the examination of megatrends, the research will develop future scenarios for Greater Bangkok. Scenarios are evidence-based stories about the future used by leading governments and corporations to inform decision-making and strategy.

How might the future of urbanisation look over the next 30 years?

How will science and technology be applied to deliver a robust, sustainable, intelligent, responsive and resilient quality of living?

How will the design of cities create a high quality of living and wellbeing for the people of Greater Bangkok?

The megatrends

Seven megatrends are shaping the future of urbanisation in Greater Bangkok.

Megatrends are powerful forces for change occurring at the intersection of high impact trends from across social, technological, environmental, economic and political domains. Trends like population growth and ageing are patterns of change that can be observed over time and verified with facts and data.

For this research project, the megatrends analysis also includes critical themes within the social domain relating to values, which highlights important cultural principles that will shape the Thai response to global change in the urban age.

Some cultural **values** will inevitably change with urban and economic development, while others may not.

VALUES

Social • Technological • Economical • Environmental • Political

Megatrends form out of the interplay of trends across domains to tell a 'big picture' story about how these forces might combine and trigger major shifts in urban planning and development. As such, some trends may factor into more than one megatrend.

What distinguishes each megatrend is the unique combination of trends, which is why these megatrends are depicted as overlapping petals on the opposite page.

The magnitude and patterns of megatrends offer clear signals for decision-makers in the short to medium term and clues about potential new risks and opportunities for the medium to longer term.

These vast narratives of change, built upon solid evidence, can help decision makers comprehend the emerging context for Greater Bangkok as it continues to expand and attract new people, investment and fresh visions for the future.

THE MEGATRENDS METHOD

Over 80 trends were identified through a horizon scanning process, and assessed in terms of supporting evidence and relevance to urbanisation.

Trends were then prioritised according to their impact on the future of urbanisation.

This process led to a short-list of 30 trends, five for each 'STEEP' category. These are described at the end of the report.

Megatrends were then developed from workshop discussions with project stakeholders regarding linkages and interactions across these 30 trends.

Key themes and impacts arising from this process informed the creation of the seven megatrends. Megatrend descriptions are structured around important outcome areas for urban planning and development.

Wellbeing for all

Wise nation

Data dominance

Waste to jobs

Village harmony

Platform transparency

Health holidays



OUTCOMES FROM URBAN PLANNING AND DEVELOPMENT

Each megatrend will shape our wellbeing and that of natural and built systems.



LIVE

Our lifestyle, where we live and any related issues that impact liveability



WORK

The types of jobs we perform, working conditions and new skills



PLAY

The ways we stay active in urban spaces and participate in recreation



LEARN

Lifelong learning as well as new ways of learning and education access



MOVE

People's ability to move through urban areas via active, public or private modes



SUSTAIN

The capability of an urban area to sustain people on individual and community levels



NATURE & BIODIVERSITY

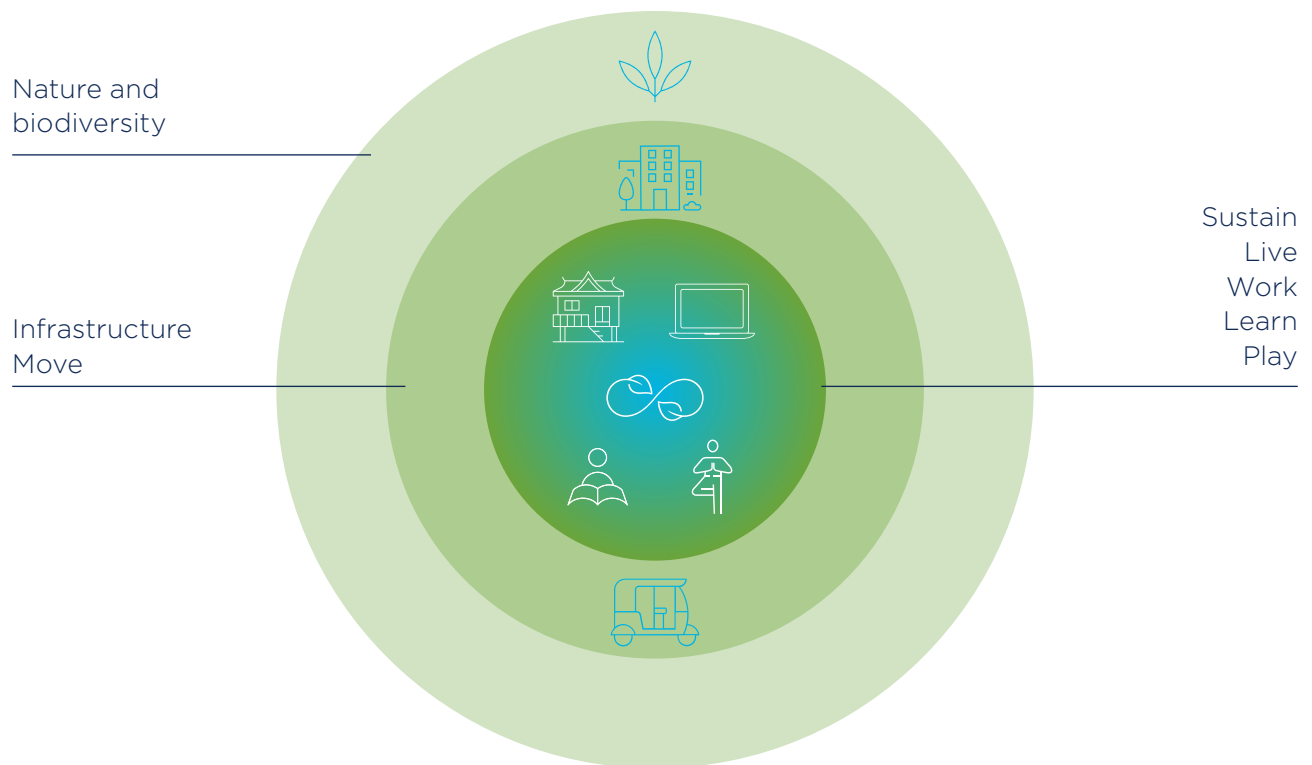
The health of ecosystems and how they relate to the built environment



INFRASTRUCTURE

All built structures and the resources that are used to create and support them

High levels of liveability are achieved when human, built and ecological systems work together harmoniously.



Urbanisation

Transforming new and existing urban areas to attract people and meet the future needs of communities and the environment.





MEGATRENDS

Wellbeing for all

Growing environmental and human health problems of the rapidly growing city are weighing heavily on Bangkok citizens. Promotion of health and wellness by influencers and the Thai Government is prompting many Thais to re-evaluate what they desire from modern life. More are looking to rebalance and support the health of their family and community and of the surrounding environment.



COMPONENT TRENDS

See Trends section for more detail

Ageing population

SOCIAL

Left behind children

SOCIAL

Booming health-tech

TECHNOLOGICAL

Increased air pollution

ENVIRONMENTAL

Waste everywhere

ENVIRONMENTAL

Biodiversity loss

ENVIRONMENTAL

Focus on health and wellbeing

VALUES

Valuing ecosystems

VALUES

Family values

VALUES

Collectivism

VALUES



CHALLENGE

Linked human and environmental health problems in big cities

Known avoidable environmental risks, including air pollution, cause roughly one quarter of all deaths and disease burden worldwide, accounting for at least 13 million deaths per annum.³

OPPORTUNITY

Pro-environmental and human health values are converging

A global survey of over 15,000 consumers revealed that environmental and health-related issues were ranked number 1 and 2 concerns respectively. And these are seen as linked with three in five believing that their health is already being impacted by environmental problems.⁴

This sentiment was echoed in a recent Thai survey of over 1,000 undergraduate students, 92% of whom believed that all life is precious and worth preserving.⁵



There is demand for residential development that allows Thai people to live with multiple generations in close proximity so that they can enjoy the benefits of family. People want to work from, or close to, home and prioritise work-life balance. Mental and physical wellbeing for all is of utmost importance and compromises such as low air quality or separation from family are not accepted.



Nature and biodiversity are invited into developments with urban greening and biodiversity corridors. Developments embrace green roofs and walls, bioswales, permeable pavements and community food producing gardens. Collectively, people in the community tend gardens and forests to make sure they are maintained and vibrant. Environmental degradation is remediated through regenerative design.



In line with their goals for health and wellbeing, Thai people demand sustainable living. They live within their means by producing much of their food onsite in local community gardens and use power from locally owned community solar farms. Waste is reduced by applying circular economy principles such as the sharing economy and bans on single use products.

MEGATRENDS

Wise nation

Thais are living longer and enjoying more enriched lives. Lifelong learning and a high value on health and wellbeing are boosting quality of life outcomes. Older generations are choosing to remain in the workforce and share their knowledge and experiences with the young. Traditional philosophy about mind-body-spirit balance is central to Thai society.



COMPONENT TRENDS

See Trends section for more detail

Ageing population

SOCIAL

Lifelong learning

SOCIAL

Smart machines are coming

TECHNOLOGICAL

Renaissance of mass transit

TECHNOLOGICAL

Booming health-tech

TECHNOLOGICAL

Advancing knowledge economy

ECONOMIC

Family values

VALUES

Focus on health and wellbeing

VALUES



CHALLENGE

High economic costs of an ageing population

The impact of ageing could reduce average growth rates for some Asian countries. Thailand's average annual GDP growth could potentially drag down 0.75% over the next 3 decades.⁶

Thailand's healthcare expenditure for the elderly is projected to increase fourfold between 2019 and 2022.⁷

OPPORTUNITY

Older workers can help lift team work and pass on their experience to the young

Over half of the Thai population is projected to be over the age of 60 by 2050. Life expectancy is projected to continue to increase to 72.6 (male) and 78.1 (female) by 2025.⁸

Research shows that older workers outperform younger workers on soft skills (eg social and management skills, loyalty etc.) and that experience, expertise, practical and tacit knowledge improve with age.⁹



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High speed internet supports smart services and healthcare in Thailand allowing them to be at the forefront of many high tech and knowledge industries.

Robotic assistants and exosuits help older people continue their careers without injuries.



Lifelong learning brings communities together. Traditional wisdom is elevated with new technologies and data making Thailand a smart and culturally rich and diverse society. Cross generational learning has been enabled through developments that allow generations to live together and combine state of the art community facilities for all to share and learn.



Intelligent mobility has played an important role in connecting communities. Suitable low emissions transport options have been made available for all ages and abilities. These are connected to allow for all people to feel comfortable travelling with these modes. Active mobility is encouraged and embraced for exercise.

MEGATRENDS

Data dominance

The internet of things has brought more and more urban systems under the control of large tech companies. Too often these companies wield strong data network effects and closed ecosystems that shut out new entrants and local start-ups. Increasingly interconnected people and things pose new privacy and security risks.



COMPONENT TRENDS

See Trends section for more detail

Adaptive design

TECHNOLOGICAL

Smart machines are coming

TECHNOLOGICAL

Smart cities

TECHNOLOGICAL

Cybersecurity risk

TECHNOLOGICAL

Centralisation and inequity

ECONOMIC

Global digital economy

ECONOMIC

Protest movements

POLITICAL

Big urban data

POLITICAL

Regional tensions

POLITICAL

CHALLENGE

A few 'tech giants' controlling more data and physical resources.

Seven of the top 10 companies globally by market cap are tech companies.¹⁰ Seven of the top 10 R&D spenders are tech companies too, and the tech sector spends more on R&D than any other sector.¹¹

Tech companies are pushing into city-related infrastructure and services. Apple and Alphabet (which owns Google) aspire to be mobility companies. Alphabet also launched Sidewalk Labs in 2015 as an urban innovation organisation to develop data driven cities.

Leveraging expansive datasets, Sidewalk uses its digital tools to design spaces tailored to those who reside within them. Privacy groups protested a Sidewalk Labs project planned for Toronto, believing that its data-gathering methods would create a surveillance state.¹²

OPPORTUNITY

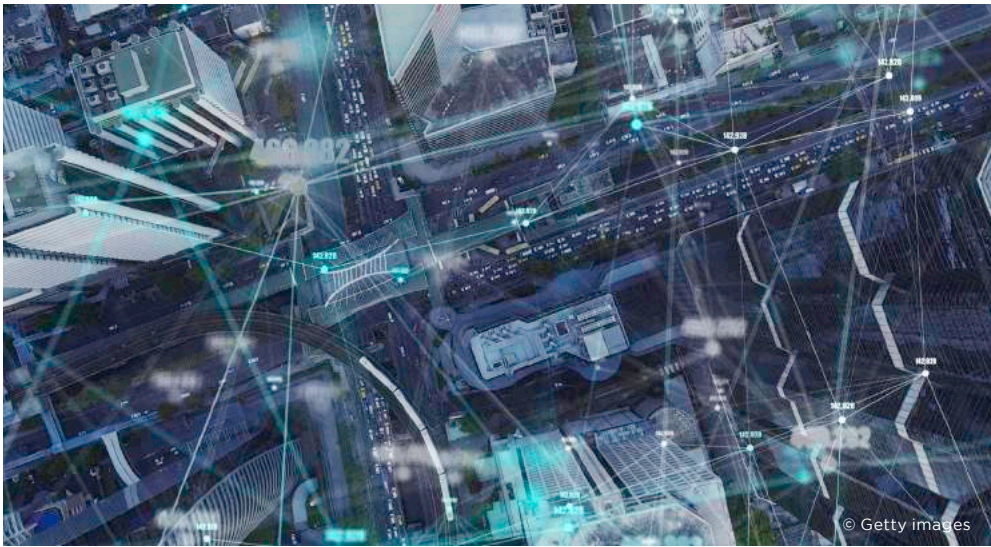
Data smart cities can enhance quality of life outcomes.

Global consultancy McKinsey and Co¹³ estimates smart city applications in Southeast Asia can:

- Cut 260-270 Kilotons of emissions
- Avoid 5,000 premature deaths
- Create 1.2-1.5m new jobs
- Deliver \$9-16b in cost of living savings
- Save 6-8m years of commute time

\$9-16b

cost of living savings



The ways in which Thai people live are monitored by larger corporations that have monopolised the collection of personal data. Personal privacy and defence from identity theft are very real concerns for individuals and families. The public are well informed that many aspects of their lives are being quantified and those with concerns must take careful steps to protect their personal information.



There is a large gap between skilled and unskilled workers with strong income inequality between regional and urban areas. Thai people are presented with few options other than to work for larger corporations. Data analytics skills are in high demand as the knowledge economy takes off leaving many workers behind who won't or can't upskill.



Urban data is now integral to the city of Bangkok's operations. The energy, water and waste nexus is data driven to optimise inputs and minimise resource use across all essential services. Shared residential spaces ensure all Thai people can access shelter, but not necessarily thrive.

MEGATRENDS

Platform transparency

Citizens increasingly demand more accountability for city planning and development decisions. Government and community groups have established open data platforms to share insights about city performance. Abundance of data and strong values around social inclusion are driving high expectations for planning outcomes. Tech-enabled citizens scrutinise every decision.



COMPONENT TRENDS

See Trends section for more detail

Adaptive design

TECHNOLOGICAL

Lifelong learning

SOCIAL

Smart machines are coming

TECHNOLOGICAL

Smart cities

TECHNOLOGICAL

Advancing knowledge economy

ECONOMIC

Big urban data

POLITICAL

Government transparency

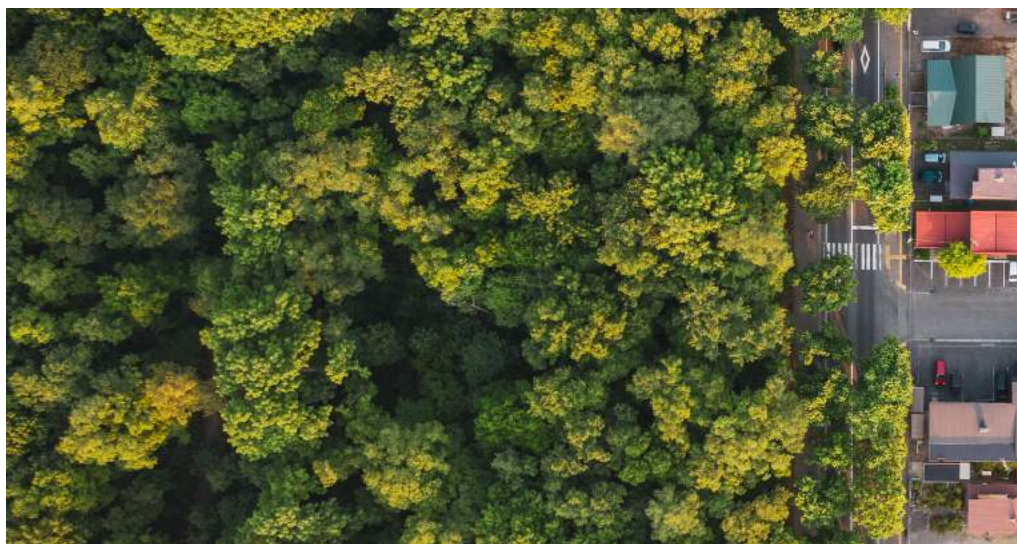
POLITICAL

Inclusive design

VALUES

Collectivism

VALUES



CHALLENGE

Online revelations of ineffective governance and corruption is fuelling protests and civil unrest

Social unrest and civil protests are on the rise globally – mass protests rose by an average of 11.5% pa between 2009 and 2019. While local context differs, there’s a common theme of ineffective governance and corruption.¹⁴

OPPORTUNITY

Digital infrastructure can promote public education and engagement

Thailand’s ranking on the Network Readiness Index has been steadily rising over the past few years – to 56 in 2019, up from 67 in 2015. Penetration of fixed broadband subscriptions, high tech exports and use of social media platforms are key strengths^{15,16}

The number of internet users in Thailand increased by 1 million (+2%) between 2019 and 2020. The number of social media users increased by 2.3 million (+4.7%) in the same period.¹⁷



Those residing in Greater Bangkok are well informed citizens. Many community groups and advocates will speak up for the masses to ensure policy and planning are tailored to the needs of people. Thai people are willing to protest in large numbers if their voice are not heard. This has resulted in a focus on urban development for liveability and broader accessibility.



Thai people are becoming better equipped to contribute to the new economy. Upskilling is common across all sectors as the data services industry grows along with education and specialised services. Abundant data on urban planning and development has allowed communities to voice their opinions on how planning decisions are made and policy is developed.



There is elevated accountability for how infrastructure is planned. Stakeholders play an integral role in determining planning outcomes and contribute to all stages of the process. A philosophy of 'design for all' is applied in how infrastructure is developed resulting in affordable housing and multi-use commercial spaces and public areas.

MEGATRENDS

Health holidays

Thailand has become one of the world's top destinations for retirees and health tourists seeking affordable cutting edge healthcare. Many foreign visitors are also attracted to Thailand's eco-wellbeing industry, which promotes natural health modalities and immersive nature-based experiences.



COMPONENT TRENDS

See Trends section for more detail

Ageing population

SOCIAL

Immigration

SOCIAL

Booming health-tech

TECHNOLOGICAL

Dependence on tourism

ECONOMIC

Focus on health and wellbeing

VALUES

Valuing ecosystems

VALUES



CHALLENGE

Heavy reliance on tourism during a time of global economic volatility

Thailand has previously been reliant on foreign direct investment (FDI). FDI rapidly increased between 1980 and 2012. However, it has been decreasing since 2013.¹⁸

The international tourism sector is a significant contributor to Thailand's GDP. The tourism sector alone contributed 21.6% of Thailand's GDP in 2018. This increased from under 11.8% in 1995.¹⁹

Overreliance on certain sectors of the Thai economy will lessen resilience to global shocks.

OPPORTUNITY

Development of higher paid jobs

Thailand is experiencing a trend of rising immigration for high skilled work. In 2014-17, the number of skilled worker migrants in Thailand increased from 127,928 to 136,542.²⁰

As the economy evolves further into the digital and information economies, there will be growing opportunities for higher skilled work and greater income for those with the right skillsets.



The tourism economy of Thailand has become one of its most differentiated and successful sectors. A focus on high-end tourism has seen Greater Bangkok become renowned for its healthcare offerings. Thai workers are upskilled in providing specialised care for retirees as well as high quality medical practitioners who can offer affordable treatments to tourists.



The Thailand Government identified the need for public spaces to solidify the country's identity as a leading health focused lifestyle provider.

Large open spaces with parks promote fitness activities and healthy lifestyles for all Bangkok citizens. Abandoned buildings have been re-purposed into 'vertical recreation zones' in densely populated areas. The tourism boom has seen an increase in leisure services and retreat destinations for those looking for an escape from the urban jungle.



Eco-tourism resorts and immersive nature experiences are some of the many specialised experiences offered by Thailand. Environmentally conscious tourists see Greater Bangkok and greater Thailand as a destination where they can experience nature in a way that is sustainable and contributes to the preservation of biodiversity.

MEGATRENDS

Waste to jobs

The growing waste problem has crippled ecosystems. Yet the crisis has presented opportunities for new circular economy jobs among the rural poor who have flooded Bangkok and surrounding cities. Tech automation has gripped many industries. Many seek new knowledge jobs in the big city but education gaps mean they can only access low paid work in waste clean up and handling.



COMPONENT TRENDS

See Trends section for more detail

Immigration

SOCIAL

Smart machines are coming

TECHNOLOGICAL

Smarter cities

TECHNOLOGICAL

Centralisation and inequality

ECONOMIC

Waste everywhere

ENVIRONMENTAL

CHALLENGE

High pollution damaging natural assets

By 2025, it is projected that Thailand will be responsible for 3.16% of the world's mismanaged plastics, ranking it as the 6th most plastic polluting nation.

East Asia, the Pacific and South Asia were responsible for 71% of mismanaged plastics in 2010.²¹

The issue of plastic pollution is likely to increase substantially as Thailand urbanises further. Circular design principles and maintaining materials high on the waste hierarchy will be critical when designing and developing the urban environment.

OPPORTUNITY

Create new circular economy and jobs

The focus of many Asian countries is on achieving adequate disposal, but a third of Asian countries legislatively encourage job creation through the application of measures that are higher up the waste management hierarchy.²²

The Economic Research Institute for ASEAN and East Asia found that the adoption of circular economy principles could lead to economic growth of US\$324b and create over 1.5 million jobs in Asian cities by 2042.²³

The opportunities of the circular economy for jobs and innovation are significant for Thailand. Plastic reuse and recycling could shift the environmental degradation currently being experienced in Thailand.



A significant portion of Thailand's population live on the fringes of Bangkok and other urban areas in impoverished shanty towns. The Thai government saw the opportunity to provide work for these citizens as waste collectors and sorters.



Unemployment is at an all time low of 0.2%. The Thai government has invested into circular economy jobs and start-ups where all waste is sorted and prioritised for reuse and then recycling into long life products. Labourers and farmers have been the worst hit by automation, with many forced to take up positions as waste sorters.



Thai people are living more sustainably due to efficient use of resources and advancements in the circular economy. Thailand imports waste materials from nearby countries to provide more work to those employed by the government in the circular economy.

Village harmony

Ageing Thais are struggling with rising living and healthcare costs, and becoming more concerned about 'big city' problems. Affordable high speed rail and aerial transport have made it easy for people to resettle outside the city while maintaining access to jobs in booming services industries. More and more Thais are seeking the peaceful village life, putting a higher value on their health and environmental restoration.



COMPONENT TRENDS

See Trends section for more detail

Ageing population

SOCIAL

Renaissance in mass transit

TECHNOLOGICAL

Advancing knowledge economy

ECONOMIC

Centralisation and inequality

ECONOMIC

Stronger local economy

ECONOMIC

Air pollution

ENVIRONMENTAL

Climate change

ENVIRONMENTAL

Rising tides

ENVIRONMENTAL

Desire for decentralisation

POLITICAL

Focus on health and wellbeing

VALUES

Valuing ecosystems

VALUES

Collectivism

VALUES

CHALLENGE

Poor liveability outcomes associated with megacities

The Economist Intelligence Unit ranked three Australian cities in the top seven most liveable cities in 2016 (Melbourne, Adelaide and Perth). According to its analysis, this is partially due their smaller size and low density.

Their relatively low population densities and high proportions of green space make these cities highly liveable. The study also found that smaller cities have a greater perception of safety and lower fears of terrorism and crime threats.²⁴

Excessive concentration and rapid urban development accentuate health problems. Air pollution increases with density. This is most evident in Asia, which accounts for half the world's most air polluted cities.²⁵

The way large cities such as Bangkok are urbanised will need to be carefully considered. The detrimental impact of megacities on health and wellbeing is significant if not managed appropriately by urban planners.

OPPORTUNITY

More spatially distributed urban and economic development that delivers higher quality of life

A recent study of the relationship between economic and urban development show two distinct phases with very different wellbeing prospects for rural vs. urban populations.

During phase A (lower levels of economic development) urban areas provide their populations with a greater sense of wellbeing, while those in rural areas experience less wellbeing. As economies develop and enter phase B, the wellbeing of urban residents decreases while it increases for those living in rural areas.²⁶

Advancements in urban to rural long distance transport will allow for distributed economic development that can provide greater wellbeing with less congestion.



Communities are strongly connected socially. The greater access to space in these suburban areas allows the community to keep active. Families will often gather together visiting each other's villages and sharing meals.



To address the transport needs of urban sprawl and suburban living, cheap rail and aerial transport provide access to work in the city of Bangkok. Public transport and other shared mobility solutions thrive within these satellite communities.



High value is placed on individual health and environmental restoration by these suburban communities. Thai people are seeking a return to more traditional village life. Communities work together to minimise waste and efficiently use resources. Off-grid power solutions are often shared between families and can sustain more remote communities.

“FutureTales Lab by MQDC originated from this aim to serve three core objectives: Exchange knowledge and data; Build cooperation, networks and community participation through engagement; Interpret changing human behaviour and attitudes to prepare for the future.”

Mr Malaisirirat, CEO, MQDC



Implications

Great challenges demand greatness.
Get ready to ride the urban innovation wave!

Industry and government players in the urban planning and development system are uniquely placed to experiment with new ways to respond to these megatrends.

Global change and disruption require a radical re-think of the urbanisation process.

A wave of urban experimentation and innovation is building globally. These initiatives go by various names, but each aims to apply new designs, tools, technologies, services, professional practices and business and governance models to new or re-developed urban spaces and assets.

Some experiments are small-scale and short-term adaptations, referred to as **tactical urbanism**,²⁷ such as freeing up streets for pedestrians, cyclists and more green space, creating community gardens on empty plots or novel re-purposing of disused buildings for social housing and office spaces for start-ups.

These initiatives can happen anywhere, and often in response to acute challenges and opportunities like the present COVID-19 crisis.

At the other end of the spectrum are larger and longer duration experiments at the precinct, district or even city-scale, often labelled **eco-districts** and **eco-cities** (or **green cities**), which aim to accelerate progress towards sustainability objectives.

Neighbourhood-scale eco-districts have popped up all over Europe and North America, while city-scale counterparts are particularly popular in East Asia, especially China, where strong economic and population growth and rapid urbanisation have ignited construction of massive greenfield sites into entire new towns and cities.

With a growing need to address pressing environmental problems, governments across Asia are seeking new models of urbanisation that can reconcile social, economic and environmental objectives.

While Asian eco-cities have delivered mixed results, development at this scale presents opportunities for fundamentally new infrastructure and services to achieve ecologically sustainable objectives

Innovation capacity of these cities can also be boosted through stronger public-private sector partnerships and more investment in urban research and development.^{28,29,30}

Some urban innovation initiatives at the precinct or city scale are exploring ways to effectively manage the **innovation process** to evaluate impact and communicate lessons learnt to a wider audience.

Urban living labs have emerged globally to integrate more formal research and development practices into real-world urban environments. Living labs typically promote multi-sector collaborations and efforts to make research more participatory with end users, involving social learning and knowledge sharing.

Co-creation with communities is the mantra of urban living labs so that solutions to problems are addressed with the user, rather than just involving the end-user in testing.^{31,32}

What these initiatives show is that planners and developers can take a lead role in the innovation system. However, it will take visionary leaders to push through barriers and shape urban development projects into inspiring visions of thriving future cities that benefit people and planet.



Are you ready to deliver more rapid place-based innovation at scale?

What futures do you think we need to prepare for?

Whose future do we need to prepare for?

This urban century belongs to change agents across sectors who can forge new ways to address the challenges of our time, and establish 'pockets' of transformation towards a future where all people and life in all its diversity can thrive.

What now?

These megatrends shaping the future of urbanisation in Greater Bangkok are being used to inform important discussions with urban planners, developers and decision-makers.

These discussions aim to identify critical issues and uncertainties that will determine whether Bangkok and surrounding urban areas thrive over the coming decades. We live in a time of extraordinary change. The future is not fixed.

Now is the time to come together and shape the future we want.

For more information about getting involved, contact FutureTales Lab.

Trends



Social

AGEING POPULATION

The Thai population is rapidly ageing, driven by a combination of longer life spans, influx of retired migrants and lower birth rates. By 2040, 17 million Thais will be 65 years or older – more than a quarter of the population.³³

More accessible transportation systems and urban and building design will be needed to support freedom of movement and high quality of life for older Thais.

ADAPTIVE DESIGN

Typical roles and functions of a home are expanding to include space for work and recreational activities, particularly in response to the COVID-19 pandemic. Disused or under-utilised commercial buildings from the economic downturn can be re-purposed to meet affordable housing needs.

Adaptive design and the reuse of older structures and assets form an emerging trend for Thai architects. Sustainability and heritage values are becoming more recognised by developers.³⁴

Wide adoption of work-from-home practices by office workers and ongoing economic uncertainty are likely to drive strong demand for flexible living spaces and conversion of disused buildings into housing.

LIFELONG LEARNING

More adults globally are recognising the importance of lifelong learning. A global survey of over 7,000 people aged between 16 and 70 found 88% believed they needed to take more responsibility for learning and upskilling for their job.³⁵

Lifelong learners will boost skills, yet will require planners and developers to consider ways in which learning experiences can be supported, such as outdoor classrooms and home studies.

IMMIGRATION

Skilled and unskilled labour provides a country with more opportunity to progress and grow culturally and economically. Thailand has roughly 5 million migrant workers on record, many from neighbouring countries. Thailand relies heavily on these workers.

Stronger migration policies can help address the economic stagnation Thailand is experiencing.

Thailand alone accounts for half of all ASEAN migrants. These migrants have been critical in filling skills gaps particularly for the growing Thai knowledge economy.³⁶

As an attractive place to live, Thailand has an opportunity to import skilled labour to new urban areas.

LEFT BEHIND CHILDREN

Low availability of job opportunities outside of Bangkok and high real estate prices struggle to live well outside Bangkok force young parents to move to big cities for work, leaving their children behind. According to UNICEF, more than one in five Thai children (or over 3 million) are left in the care of a single parent or their grandparents.³⁷

If combined with good public transport, urban and economic development in different regions of Thailand will help promote more distributed employment and decrease the time workers spend away from families.



88%

of people across the globe believe they need to take more responsibility for learning and upskilling

50%

of all ASEAN migrants are accounted for by Thailand alone

20%

of Thai children are left in the care of a single parent or grandparents

Technological

RENAISSANCE IN MASS TRANSIT

Governments globally are investing heavily in public transport systems. Emerging innovations are part of the boom, with new mass transit systems under development, including Hyperloop and aerial transport concepts such as vertical take-off and landing.

The Bangkok Gold Line automated rail system is a first of its kind for Thailand and will connect other mass transit systems. This system opened in late 2020 with plans for a second phase opening in 2023.³⁸

More distributed urban development may be possible as cutting edge mass transit systems mature.

SMART MACHINES ARE COMING

Jobs at risk will increase over the next 15 years, with low skill workers most affected. Almost half of low skill jobs could be at risk by the mid-2030s. Cities are where most of the impacts of automation will be felt.

A survey of 270 Thailand companies found over one third will be increasing investment on robotics and automation by at least 5% to increase productivity and worker efficiency.

The automation market in Thailand is expected to be valued at US\$12 billion by 2023.³⁹

Urban development will need to couple with job attraction strategies, particularly in emerging high value service and tech sectors.

SMARTER CITIES

Digital tech and data are becoming more prominent in managing urban infrastructure and services.

Reduced cost, environmental impact and increased access are key benefits.

The 2017 Thailand 4.0 Government initiative is targeting 100 smart cities across Thailand within 20 years. This initiative is driven through a combination of lined ministries (not only Digital Economy Promotion Agency). The public sector has already dedicated US\$11m to begin building a digital economy facilitated by smart cities.⁴⁰

CYBERSECURITY RISK

The increasingly interconnected world of people and things brings new vulnerabilities. Geopolitics is an additional factor in ASEAN with tech giants from superpowers China and the US representing state interests.

More than 35% of businesses in Thailand have have a significant cyber breach costing US\$1m or more in damages. Investment in cybersecurity across Thailand has reached US\$63 million following the introduction of the Cybersecurity Act and Personal Data protection Act.⁴¹

Cybersecurity risks could determine the extent of smart city developments in the region.

BOOMING HEALTH-TECH

6G integration into healthcare will provide unprecedented communication and support the use of AI and robotics for remote service delivery.

Thailand's medical device market is forecast to grow by 8-10% by 2021. Thai medical trade has increased steadily since 2013, growing by over 20% in 2013-19. The country has more than 1,400 hospitals which bring in close to to US\$600m annually from international visitors, making Thailand the fifth largest medical tourism market.⁴²

Quality healthcare at-a-distance can reduce the need for Thais to travel to large cities like Bangkok for specialist care and procedures.



\$11m

already invested by
Thailand public sector
for the digital economy
US dollars

35%

of Thai businesses'
have experienced
a cyber breach
costing more than
US\$1m in damages

5th

largest medical
tourism market
globally

Economic

GLOBAL DIGITAL ECONOMY

More businesses are transitioning online and acquiring customers through P2P and social media platforms.

Cashless payments and cryptocurrencies are growing globally. These transformations help increase efficiency and keep pace with partners and/or competitors. Yet Thailand is still very much a “cash” society, where paper money is necessary in most of the country due to cultural resistance and insufficient infrastructure.

The Thai digital market has developed quickly with a focus on e-commerce and data centres. E-commerce spending rose 18.2% annually between 2016 and 2020.⁴³

Future urban development should prioritise digital infrastructure to enable new tech and services industries to flourish.

ADVANCING KNOWLEDGE ECONOMY

More technology and automation are opening up new horizons in knowledge intensive work. Businesses and governments must embrace the opportunity or risk being left behind.

High unemployment is a key risk.

The Thai Government has developed digital economy policy that aims to increase the knowledge economy to 50% of the nation’s GDP and focuses on local solutions for digital and information services.⁴⁴

The demand for higher skilled workers will grow as cities advance economically, growing new service sector industries and jobs.

CENTRALISATION AND INEQUALITY

Concentration of industries in one city or area provides little flexibility for workers looking to move. While this increases competition between companies, it stagnates the growth.

Many skilled workers have little option than to live in Bangkok, despite having a desire to live in their home province or somewhere else.

Progress that was made in reducing poverty in Thailand is backtracking as the economy slows. In 2015-18 poverty grew from 7.2% to 9.8%. The Thai economy has also been one of the slowest in SEA with only 2.7% growth in Q4 2019.⁴⁵

Urban development outside of Bangkok will require strong strategies to underpin high value industry and job creation.

STRONGER LOCAL ECONOMIES

Local economies in neighbourhoods or small suburbs in greater Bangkok are supported by a community desire for prosperity. Competing businesses often coexist peacefully due to a desire for mutual success.

Small-to-medium enterprises in Thailand contribute 42% of GDP and employ 78% of the working population. Entrepreneurs are shifting their focus to technology to grown and sustain their businesses.⁴⁶

DEPENDENCE ON TOURISM

Tourism has become Thailand’s biggest export.

In the 10 years to 2018, the contribution of tourism to Thailand’s GDP increased from 5.3% to 12.5%; visitor numbers grew from 14 million to 38 million, heavily driven by the Chinese market.⁴⁷

Strong tourism numbers promote city shaping infrastructure investments (airports, fast trains, hotels etc), but can also be vulnerable to economic cycles.



18.2%

annual increase on e-commerce spending between 2016 and 2020

50%

of the nation's GDP aims to come from the knowledge economy

78%

of the working population are employed by SMEs and contribute to 42% of GDP

Environmental

AIR POLLUTION

Air pollution is the leading cause of respiratory diseases in Southeast Asian children; additionally, about one-third of heart disease, strokes and lung cancer are caused by air pollution.

Some 92% of people in Southeast Asia are exposed to levels of air pollution that are considered a serious health risk. It is projected that population-weighted exposure to air pollution in Southeast Asia will grow by 30% by 2030.⁴⁸

Serious human health impacts are likely to drive greater public concern about pollution. Future urban policy agendas are likely to reflect these concerns with higher air quality standards.

WASTE EVERYWHERE

The trends of increasing consumption and convenience lifestyles are resulting in a growing waste stream in Thailand.

Thailand generates more than two million tonnes of plastic waste annually. Thailand is ranked the 6th most plastic polluting country in the world. With Thailand having many coastal zones, much plastic waste is lost into the ocean.⁴⁹

Urban developments can embrace the circular economy by re-using existing infrastructure and buildings, designing to enable the sharing economy or developing large-scale waste collection and processing facilities.

BIODIVERSITY LOSS

Maintaining biodiversity is important for the future of Bangkok and broader Thailand as their natural environment provides ecosystem services and attracts international tourism and trade.

UNESCO Bangkok has launched an event to take action in restoring mangrove ecosystems that play a critical role in preserving biodiversity and sustaining other ecosystems. The mangrove systems are important not just for biodiversity but also the protection of people and urban areas from flooding.⁵⁰

Embracing biodiversity and developing urban areas alongside ecosystems will be essential to maintain Thailand's natural environment.

CLIMATE CHANGE

Climate change is driving up the frequency and intensity of natural disasters and damage

losses. Resilience is emerging as a core competency for cities.

The number of disasters caused by heatwaves is projected to double across all nations between 2014 and 2050. This is then anticipated to more than triple between 2050 and 2100.⁵¹

Extreme weather will require cities to develop resilient infrastructure, raise building standards and develop spatial planning policies to mitigate future losses.

RISING TIDES

A growing number of people live in or near vulnerable coastal, river and delta regions, increasing flood risk due to climate change and sea-level rise.

Based on the projected sea-level rise for 2050, land that accommodates over 300 million people will fall below the elevation of an average annual flood event. Thailand is one of the top six nations that will have the most people impacted by this flooding.⁵²

Urban planning and governance processes will increasingly factor in vulnerability and make hard decisions about retreat and resettlement.



92%

of people in Southeast Asia are exposed to significant air pollution

6th

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x2

Heatwaves are expected to double across all nations between 2014 and 2050

Political

PROTEST MOVEMENTS

Citizens are demanding greater accountability and transparency from their governments.

The Asia Pacific region, including Thailand, has struggled to make progress on corruption over the past few years.

Recent protests in Thailand have seen tens of thousands gather to push for a reform of the monarchy. The Thai monarchy is a sensitive topic – it's a criminal offence to criticise the monarchy.⁵³

As the region grapples with 21st century global change on multiple fronts cities will provide important gathering spaces for public events including protest.

BIG URBAN DATA

Digital data mapping can be used to visualise movement data within cities. One example is a route planning app that is visualising transport data in multiple cities globally to observe behavioural change resulting from COVID-19-related movement policies.

It is projected that there will be more than 75 billion Internet of things (IoT) devices globally by 2025.

Several Thai government initiatives such as Thailand 4.0 and Smart City and Industry 4.0 have a focus on increasing the number of IoT devices.⁵⁴

Mobility data incorporates some level of tracking, which can help cities manage transport infrastructure more efficiently and address public health crises such as COVID-19.

However, such initiatives can risk becoming intrusive surveillance if not governed effectively and transparently.

REGIONAL TENSIONS

Political relationships across Southeast Asia and with other nations affect Thailand.

Its central location in the region creates a relationship between international infrastructure development and international politics, among Southeast Asian countries.

Recent territorial and maritime disputes have increased uncertainty and will likely slow economic co-operation for the next five years. A continuous simmering tension between China and the USA may call SEA nations to take sides.⁵⁵

Such regional tensions may undermine important infrastructure development needed to link emerging urban areas.

GOVERNMENT TRANSPARENCY

Real estate transparency covers a range of factors from governance and regulation to sustainability transparency. Thailand has been progressively improving in transparency due to regulatory changes.

The Thai people have recently pushed for increased government transparency as the government announced a US\$61 billion COVID-19 fund to support impacted industries.⁵⁶

Legislative requirements and social demand will continue to drive more transparency about urban developments.

DESIRE FOR DECENTRALISATION

Thailand's trend towards further decentralisation is driven by internal and external factors. The internal democratisation of Thailand is the main driver, while geopolitics is having an external influence through economic impacts such as the Asian currency crisis.⁵⁷

The ways different levels of government contribute to policy and planning will influence the Thai urban landscape. Decentralisation policies will reduce inequalities between regions and support sustainable urban growth.



>75b

Internet of things (IoT)
devices expected
globally by 2025

next 5 yrs

economic co-operation
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between Southeast
Asian countries

\$61b

COVID-19 fund to support
impacted industries
US dollars

Values

FOCUS ON HEALTH AND WELLBEING

There is growing interest in integrating ancient knowledge systems to address problems with modernity.

Thai people's growing awareness of health behaviours is driving a shift in personal and collective wellbeing. Increasing urbanisation is providing Thai people with greater access to more health and lifestyle products and services.⁵⁸

Human health problems in cities can stem from loneliness, too much lifestyle stress, pollution, poor sanitation and lack of exposure to nature.

Future urban planning and design will need to explore strategies for decreasing the negative health impacts of hectic urban living.

VALUING ECOSYSTEMS

Ecosystems provide many essential services to cities, such as temperature regulation, resilience to environmental shocks, biodiversity, recreation and pollution reduction.

Ecosystems services are being increasingly valued by Thai people and developers

as preferences move from 'grey infrastructure' to 'green infrastructure' solutions for rainfall and flood management. Further benefits of ecosystems are now being considered in urban planning such as the impact on property value, carbon sequestration, water filtration and recreation.⁵⁹

Urban areas need to incorporate and support surrounding ecosystems to maintain their critical services and avoid long-term costs to human health and physical infrastructure.

COLLECTIVISM

According to recent surveys, Thailand has a strong collectivist orientation, which means that individuals prioritise commitment to family or wider social group rather than looking after themselves.

Hofstede Insights identified Thailand as highly collectivist. This manifests in the Thai people's tendency to maintain strong and close relationships with their extended family. Thai society fosters relationships where everyone takes responsibility for each other.⁶⁰

Collectivist values shape the structure of households and impact housing design.

INCLUSIVE DESIGN

Designing with people as the focus is a growing trend in global urban development. It is being embraced by Thailand as its population ages and is further amplified by its family orientation and respect for elders.

The elderly population in Thailand will exceed 20 million by 2050. Urban development will need to cater to those with a disability and diminished mobility to ensure critical infrastructure can be accessed in the future.⁶¹

FAMILY VALUES

The importance of family and respect for elders are strong values for Thai people. These values have been maintained even as younger generations migrate towards urban environments. However, household size is shrinking, the fertility rate is falling and the population is ageing.

The proportion of one-person households increased from 6% to 14% between 1987 and 2013. This predominantly occurred in urban areas.⁶²

Smaller households and rural-urban migration may weaken family ties.



green > grey

Ecosystems services are being increasingly valued by Thai people and developers

>20m

elderly population in Thailand expected by 2050

14%

of households became one-person only by 2013

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ACKNOWLEDGEMENTS

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Karndee Leopairote
Pannin Sumanasrethakul
Wipattra Totemchokchaikarn
Deunchalerm Khiewpun

DESIGN

Kathie Wallace

SPECIAL THANKS

Arup

Magnolia Quality Development Corporation Limited

DTGO Corporation Limited

Innovation Foresight Institute

Innovation Foresight Institute

National Innovation Agency

Digital Economy Promotion Agency

Future Innovative Thailand Institute

Bangkok Metropolitan Administration

Former BMA Governor

Faculty of Architecture, Chulalongkorn University

Faculty of Architecture, Thammasat University

Faculty of Architecture, Bangkok University

Creative Economy Agency (Public Organisation)

Geo-Informatics and Space Technology Development Agency (GISTDA)





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