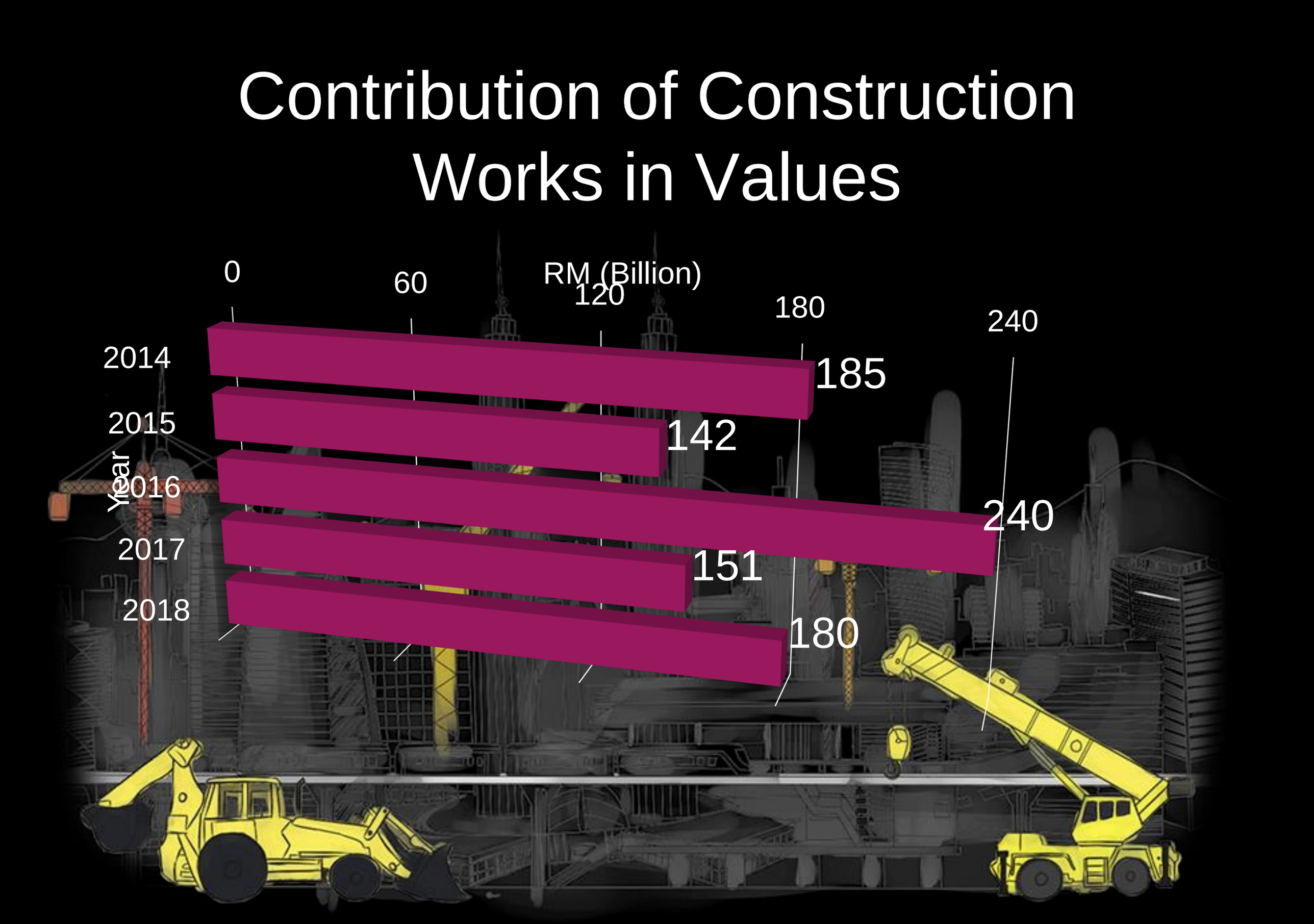
The Way Forward for The Construction Industry in Malaysia : Issues and Challenges.

OVERVIEW OF THE CONSTRUCTION INDUSTRY

Construction Growth

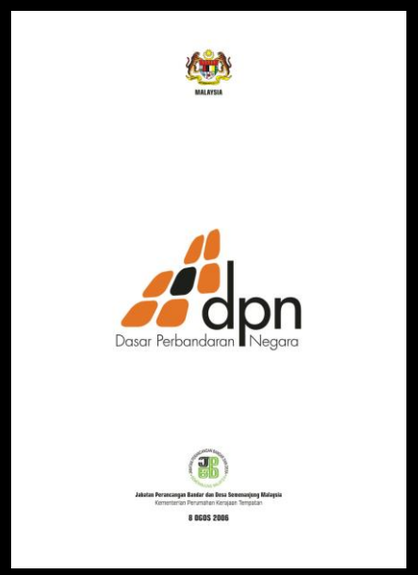
SECTOR	2016	2017	2018*
Agriculture	-5.1	1.5	2.4
Mining	2.2	0.5	0.9
Manufacturing	4.4	5.5	5.3
Construction	**7.4**	**7.6**	**7.5**
Services	5.6	5.9	5.8
GDP Growth	4.2	5.9	5.5

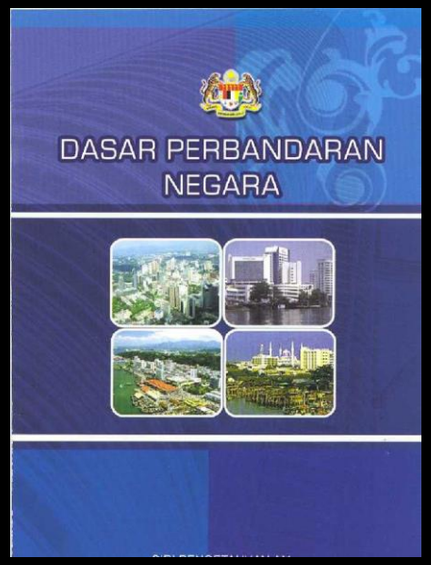
Contribution of Construction Works in Values



CURRENT POLICIES

Government Policies



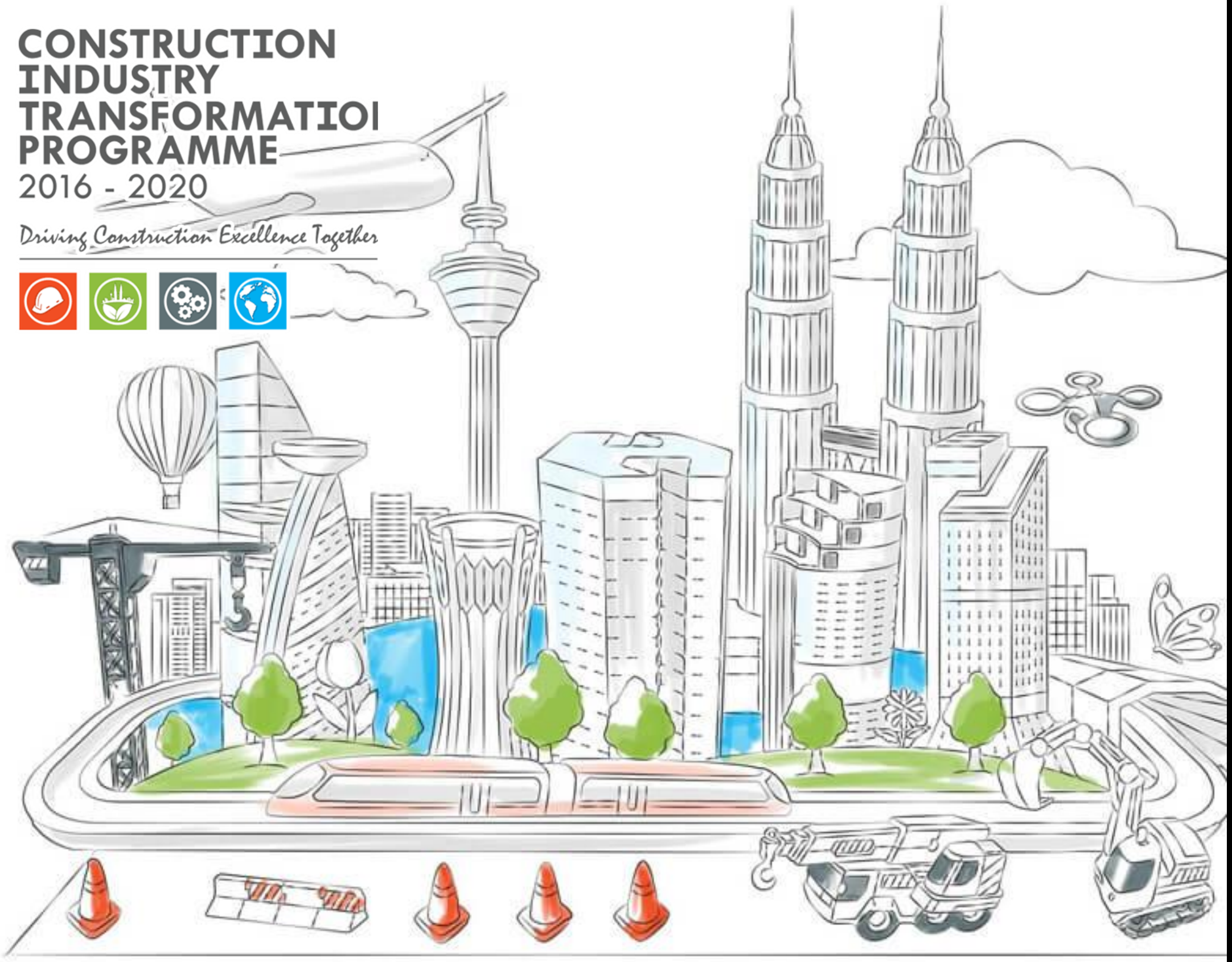


CONSTRUCTION INDUSTRY TRANSFORMATION PROGRAMME

CONSTRUCTION INDUSTRY TRANSFORMATIOI PROGRAMME

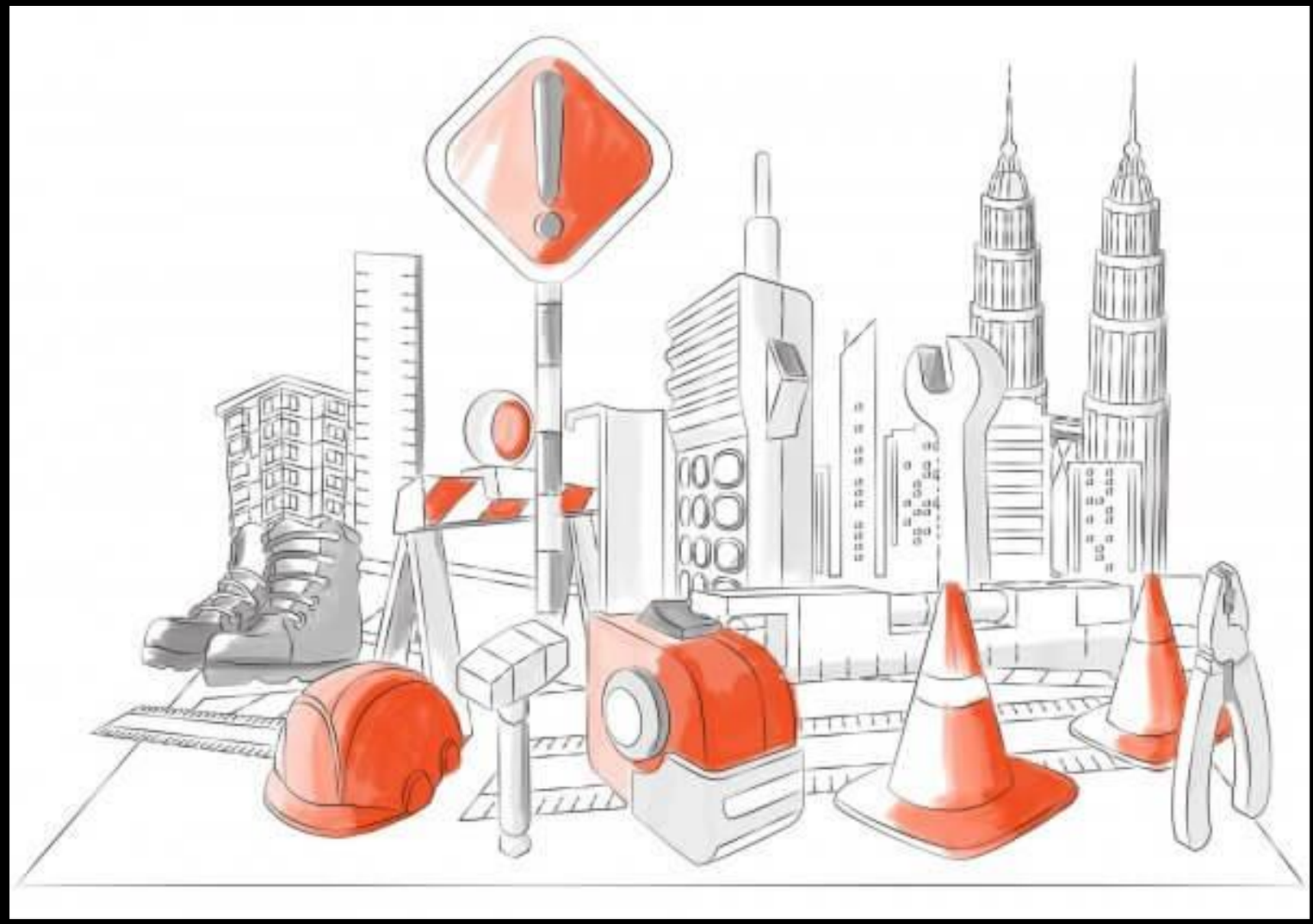
2016 - 2020

Driving Construction Excellence Together



Quality, Safety & Professionalism

Quality, safety and professionalism are primary prerequisites towards transforming our national construction into a responsible, developed industry. These fundamentals are to be ingrained into everyday practices, creating high quality construction products and safe & healthy environment at construction sites. Professionally addressing regulatory constraints will result in improved ease of doing business through enhanced procedures, reduced cost and lesser time for registering as contractors as well as for securing construction permits.

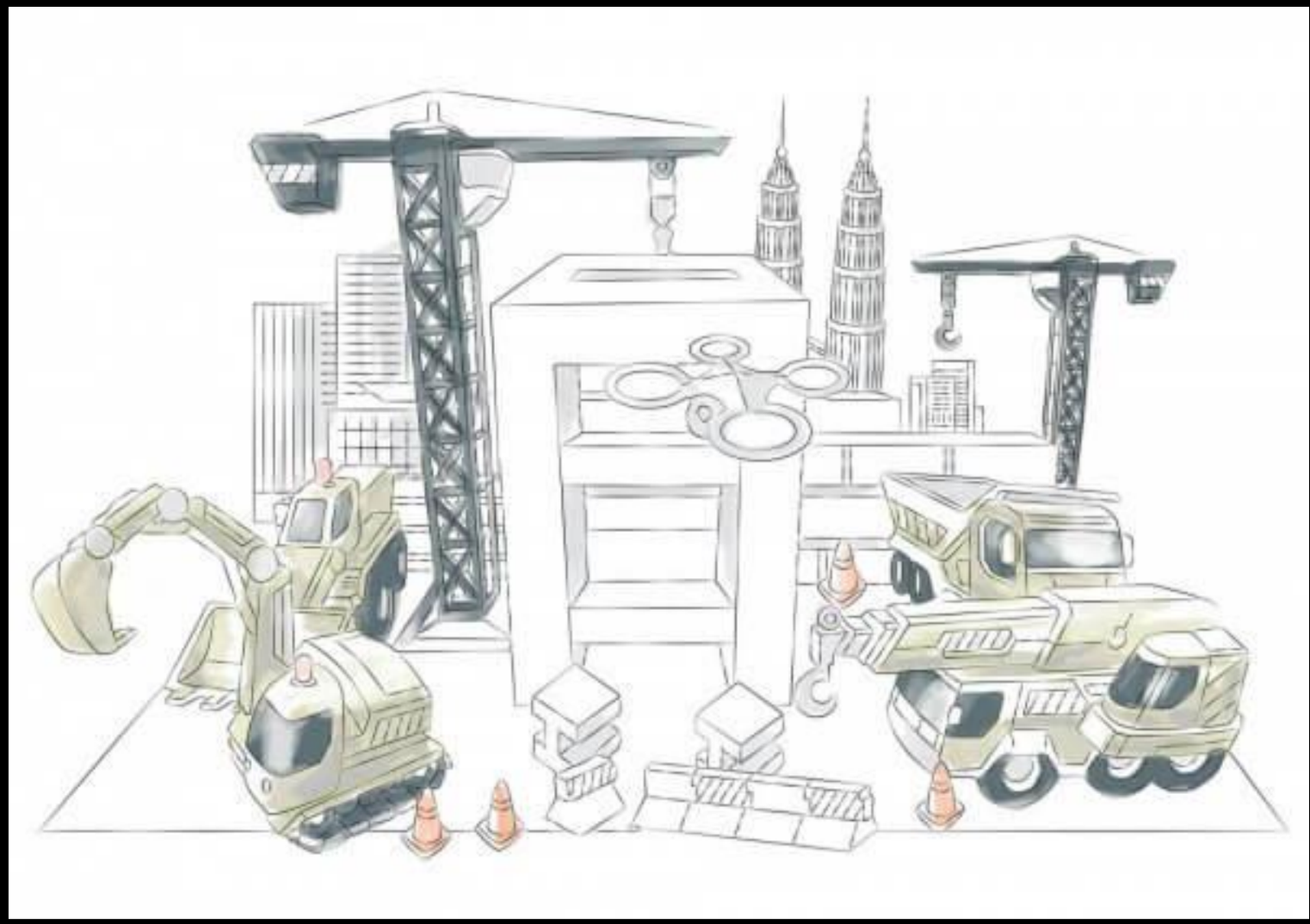


Environmental Sustainability

Environmental sustainability agenda in the construction industry will be robustly developed and rolled out as a model to the emerging world. High compliance to the environmental sustainability ratings and practices will make Malaysia a low carbon, sustainable building and infrastructure hub. Efficient waste management will propel Malaysia’s infrastructure to be more resilient and sustainable, while aiding environmental protection and ensuring the people’s living standards are of high quality.

Productivity

Productivity is the primary engine of growth towards Malaysia's high-income target. As a vital sector to the nation's advancement, the construction industry will lead with high productivity levels through efficient adoption of new technologies and modern practices coupled with high-skilled, highly paid workforce.



Productivity

Internationalisation will drive the Malaysian construction players to gain prominence as global players on the international platform as well as significantly elevate its position on the domestic front. Its highly skilled and professional workforce is envisaged to capture the growth beyond domestic market and adapts to the changing environment quickly to be able to compete in the world arena.

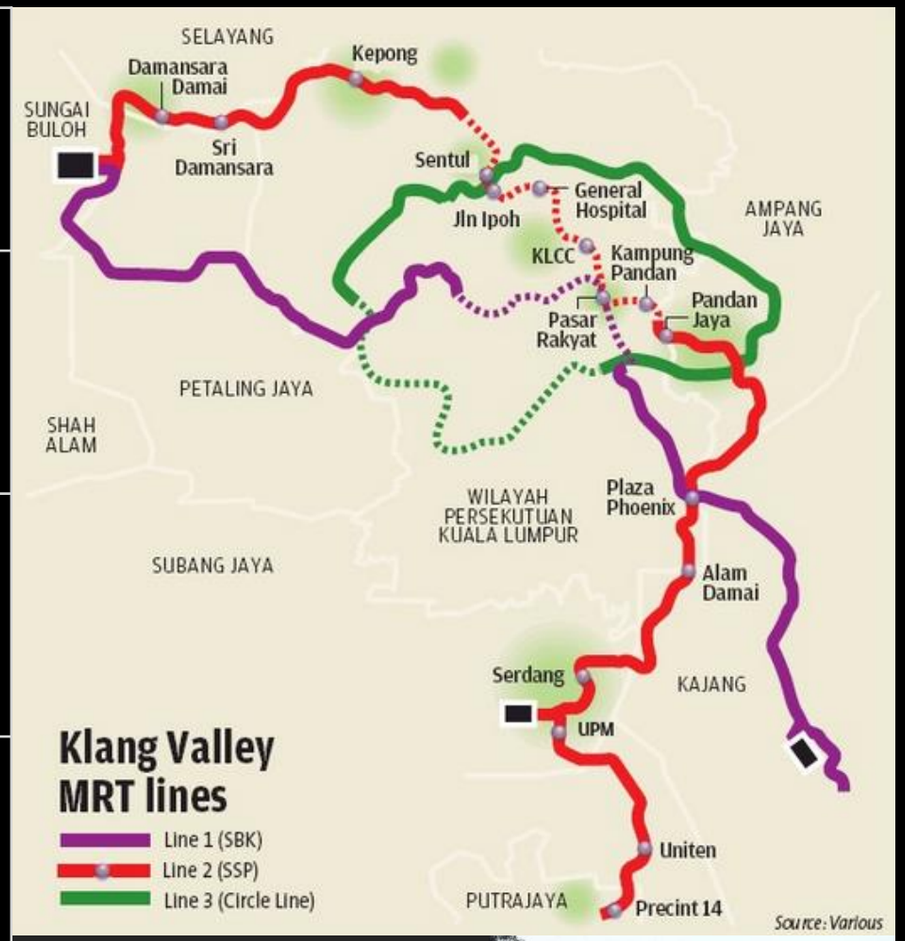
MEGA PROJECTS

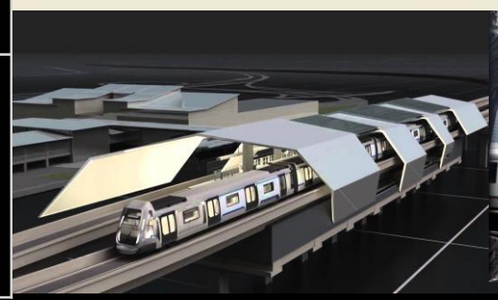
Light Rail Transit 3

Developments Cost	RM9 billion
Completion	Q3 2020
Length	37 km
Integrated Stations	5
Station	26

Mass Rapid Transit 2

Developments Cost	RM4 billion
Completion	Q2 2022
Length	52.2 km
Underground	13.5 km
Stations	37





Pan Borneo Highway

Developments Cost	RM29 billion
Completion	2022
Length	2,300 km
Sarawak Section	1,090 km
Sabah Section	1,210 km

Pan-Borneo Highway

West Cost Expressway (WCE)

Developments Cost	RM6 billion
Completion	Q3 2019
Length	233 km

High Speed Rail (HSR)

Estimated Project Cost	RM40-45 billion
Operation Starts	2026
Length	350 km
Transit Location	6
Journey Time	90 minutes

East Coast Rail Line (ECRL)

Laluan Kereta Api Pantai Timur

Malaysia dan China menandatangani perjanjian rangka kerja pembiayaan dan kontrak, kejuruteraan, pemerolehan dan pembinaan

Bernilai
RM55 Bilion

Bermula 2017
Dijangka Siap 2022

Tempoh bayaran balik pembiayaan
20 Tahun

2 Fasa

Fasa Pertama:
Pelabuhan Klang-Gombak-Dungun

Fasa Kedua:
Dungun ke Tumpat

Projek akan:

- Mengurangkan kos pengangkutan antara Pantai Barat dan Pantai Timur Semenanjung
- Memendekkan masa perjalanan
- Mewujudkan lebih banyak peluang pekerjaan dan perniagaan
- Mengurangkan harga barangan di Pantai Timur dan merangsang pertumbuhan bandar-bandar kecil

Infografik Bernama

Malaysia Vision Valley NS

Initial Investment forecast	RM5 billion
Gross Development value	RM640 billion
Land Area	108,000 ha

Cyberjaya City Centre

Initial Investment forecast	RM5 billion
Gross Development value	RM8-10 billion
Land Area	53 ha

Bandar Malaysia

Development	20-25 years
Affordable Home	5000 unit

Melaka Gateway

Launched	2014
Complete	2025
Land Area	609 acres

FUTURE SCENARIO

Internationalisation

Internationalisation will drive the Malaysia construction players to gain prominence as global players on the international platforms as well as significantly elevate its position on the domestic front. Its highly skilled and professional workforce is envisaged to capture the growth beyond domestic market and adapts to the changing environment quickly to be able to compete in the world arena.

CURRENT SCENARIO

Ageing World

By 2050, the global population of older person is projected more than double its sized in 2015, nearly 2.1 billion.

Life expectancy of Malaysian in 2050 will be 84 years old. 24% of the population will be aged 65 years or older.

Women Empowerment

If women participated in the economy at level identical to that of men, it would add up to USD 28 trillion or 26% of annual gross domestic product (GDP) in 2025, assuming a business as usual scenario.

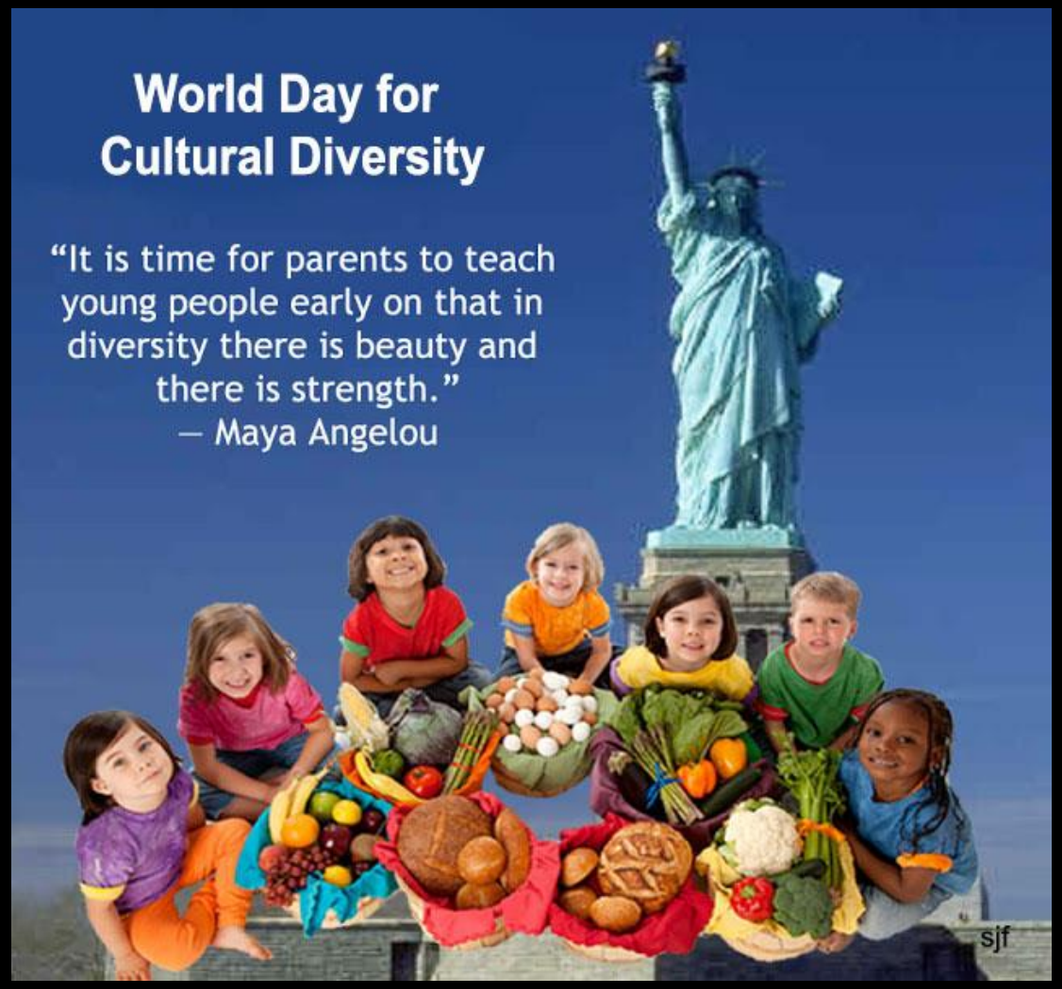
In Malaysia, women makes up 30% of the working population an increase of 27% since 2007. 70% is employed in service sector. More than 1 million are professionals or in management.

Digital Natives

By 2025, 75% of the global workforce will be comprised of millennials.

Millennials are powerful generation in making, being born during the time of digital revolution, growing up with perks, such as broadband, smartphones and social networks.

Migration and Cultural Diversity



Over 1 million people in the world are migrants, or more than 1 in 7 people globally.

Malaysia immigrants are from over 200 countries of origin. More than 30,000 choose to make Malaysia their second home in the last 10 years.

Urbanisation

75% Malaysian are living in urban areas. Malaysia urbanisation rate is about 4%. Amongst the fastest in East Asia.

By 2030, two-third of the world's population will reside in cities. The numbers of megacities with more than 10 million people is expected to grow over 40.

Blurring Boundaries of Traditional Sector

Industries and sectors have been converging, reducing the clear lines of demarcation originally defined and codified almost 80 years ago.

Hyper Connectivity

“There will be 34 billion devices connected to the internet by 2020, up from 10 billion in 2015.”

Malaysia is ranked 31 as the most technology ready country with approximately 150% mobile phone penetration.

Globalization and Decentralisation

Decentralized economic system defined by collaboration between individuals and the sharing of Resouces.

Rise of the Robots

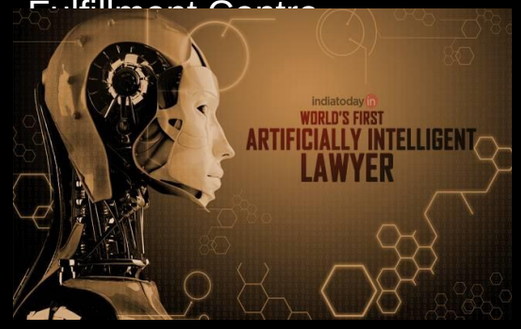
UK to start self-driving semi truck trial on public road in 2018

Uber parking lot patrolled by security robot.

A Kiva robot carries a rack of merchandise across a storage area at the Amazon Fulfillment Centre

The grant brick laying robot can build entire house in just two days.

Money is a robotic chef that can prepare over 100 meals at your home.



AI lawyer “Ross” hired by its First Law Firm

Robot perform skull surgery

Boston Dynamics is teaching its robot dog to fight back against humans

Automation to take 1 in 3 jobs in UK’s northern centers.

Green and Sustainability

“Smart” is the new “Green”. Mega trend of the past decade, green products will be replaced by smart products and services.

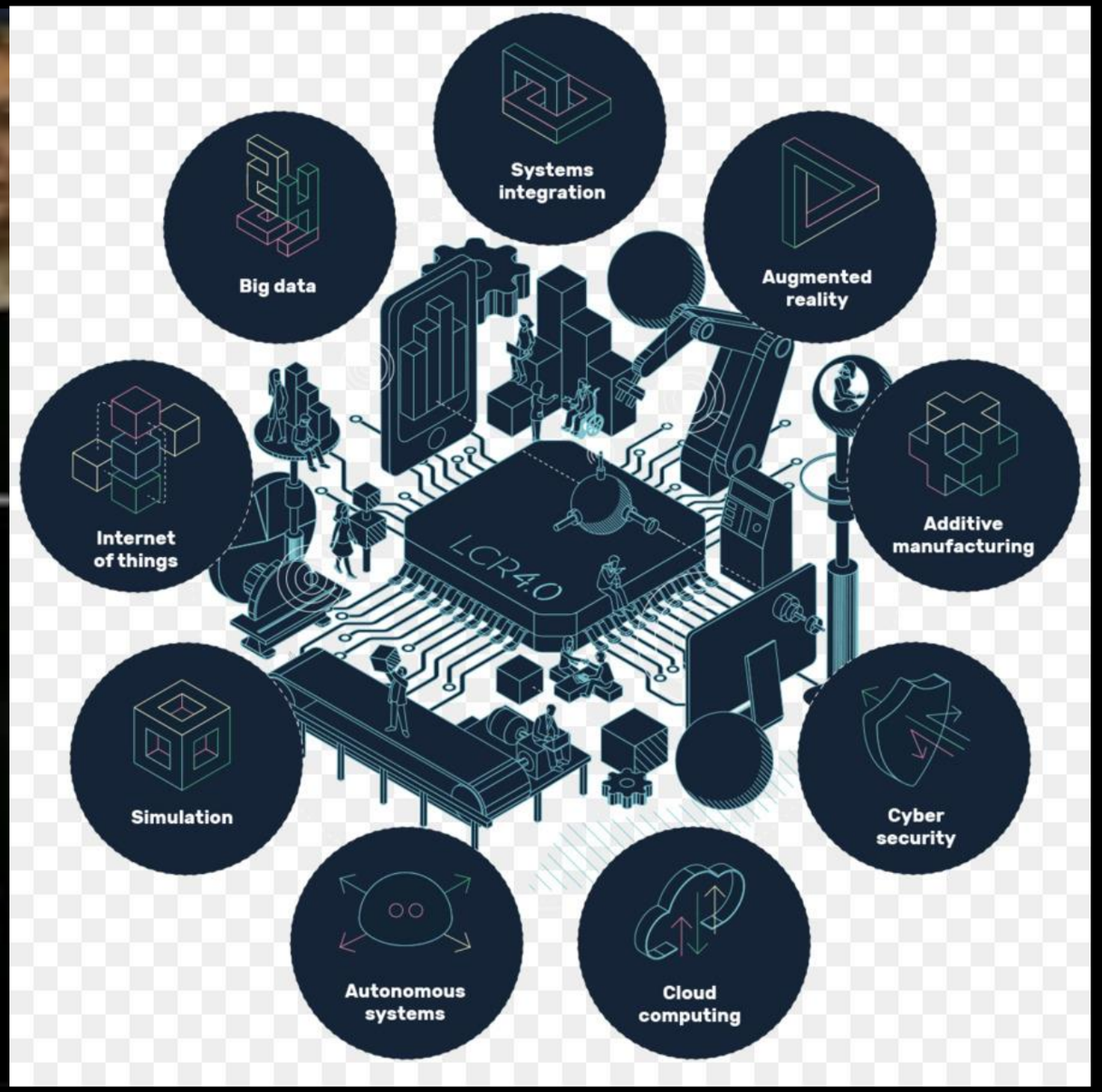
Smart Building

Smart buildings are sometimes referred to as “automated building”, “intelligent building” or building that incorporate smart technologies. However, it is a fairly ambiguous term that at it most basic level has been used to describe buildings that include technologies such as automated system; energy efficiency measures; intelligent building management system; wireless technologies; digital infrastructure; adaptive energy system; networked appliances; data gathering devices; information and communications networks; assistive technologies; and remote monitoring.

Smart City

It has been projected by 2025, we will have at least 88 smart cities in the world.

Fourth Industrial Revolution



“One of the features of this Fourth Industrial Revolution is that it doesn’t change what we are doing but it change us”.

Klaus Schwab
Founder and Executive Chairman, World Economic Forum.

TECHNOLOGY AND INNOVATION

3D Printed House

Winsun claims to have printed 10 houses in a single day.

3D Printed Bridge

Joris Laarman Lab in Amsterdam had develop a system called multiaxis 3D printing to creat a 3D printed bridge.

Glow in the Dark Road Marking

Drivers on a road in Netherlands are now being guided by glow in the dark road marking.

Hyperloop Technology

Hyperloop brings airplane speeds to ground level, safely. Passenger and cargo capsules will hover through a network of low pressure tubes between cities and transforming travel time from hours to minutes. The journey from Dubai to Abu Dhabi could soon take just 12 minutes.

Flying Taxis

Self-Piloted flying taxis are being tested in New Zealand as part of a project backed by Google co-founder Larry Page.

Self-healed Concrete

Concrete that repairs itself could save maintenance costs, increase safety and help the environment.

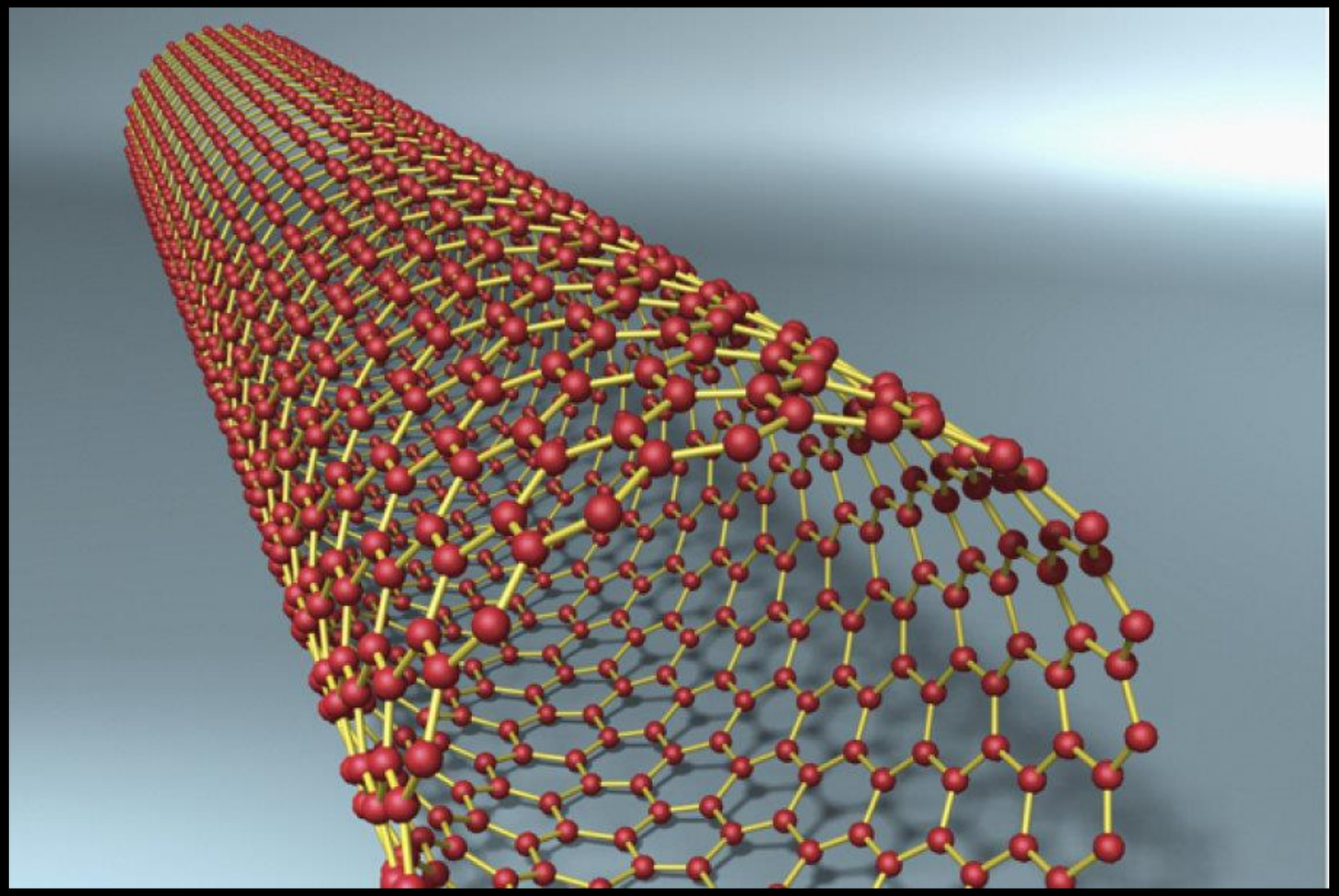
Gravity Light

Gravity Light is an innovative device that generates light from the lift of a weight.

Transparent Aluminum

The advantage is it’s so much tougher, stronger, harder than glass.

Carbon Nanotubes

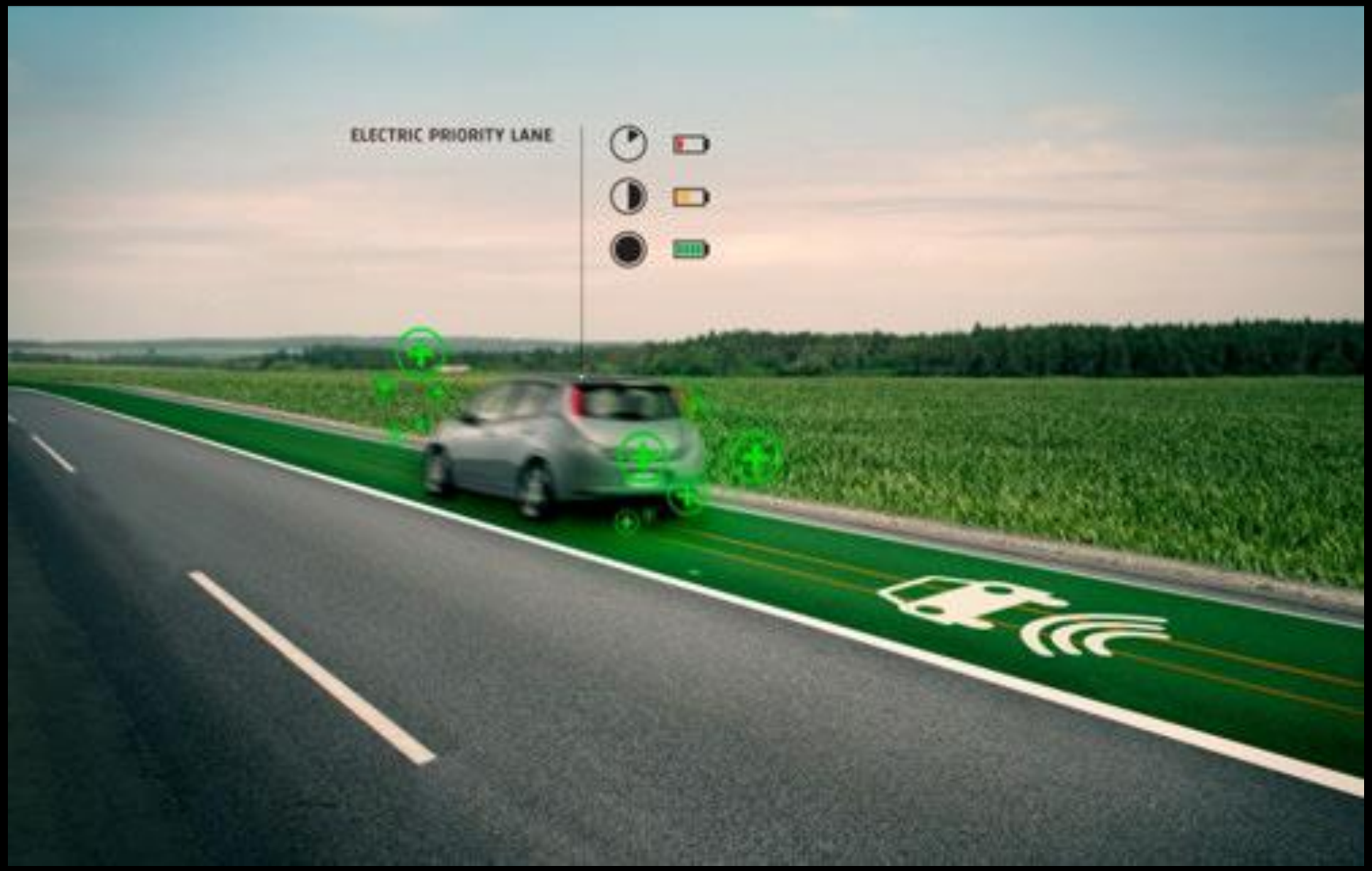


These carbon nanotubes have the highest strength-to-weight ratio of any material on Earth and can be stretched a million times longer than their thickness. Carbon nanotubes are so light and strong that they can be embedded into other building materials like metals, concrete, wood and glass to add density and tensile strength. Engineers are even experimenting with nanoscale sensors that can monitor stresses inside building materials and identify potential fractures or cracks before they occur.

Robot Laying Brick

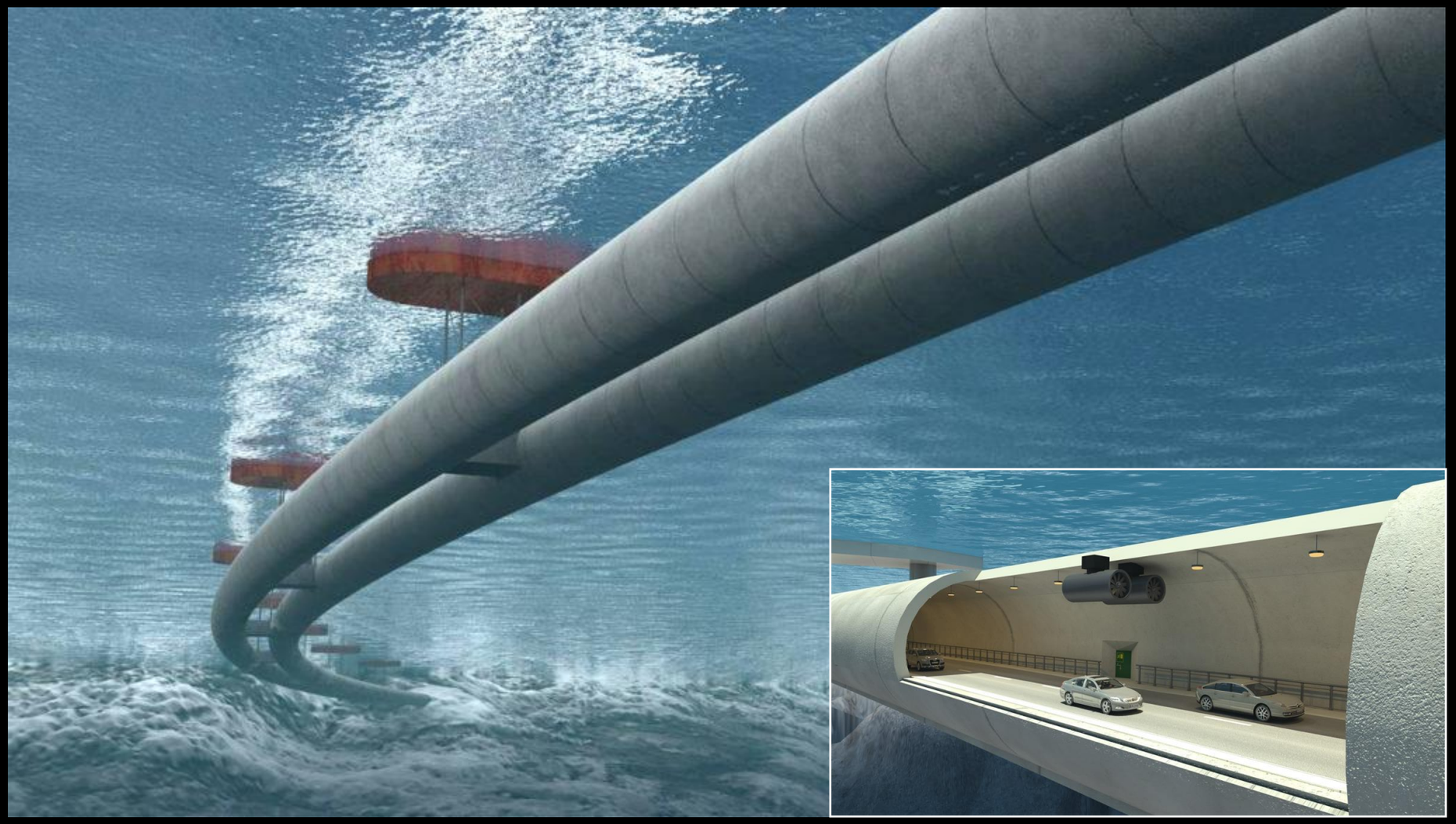
As robots get smarter, cheaper and more versatile, there’re taking more challenges including bricklaying. Working about 20 times faster than human bricklayer.

Smart Roads



Solar Roadway : Solar-powered tech charge electric cars while on the road.

Submerged Floating Tunnel



Norway to creat world’s first floating underwater tunnel system about 30 meter underwater. The project is planned to be completed by 2035.

BIM+RFID+IBS+IoT

RFID-Enabled BIM platform for prefabrication housing production in Hong Kong

ISSUES AND CHALLENGES

Project Delivery

Creating certainty to deliver on time and on budget, and improving the productivity of the construction sector.

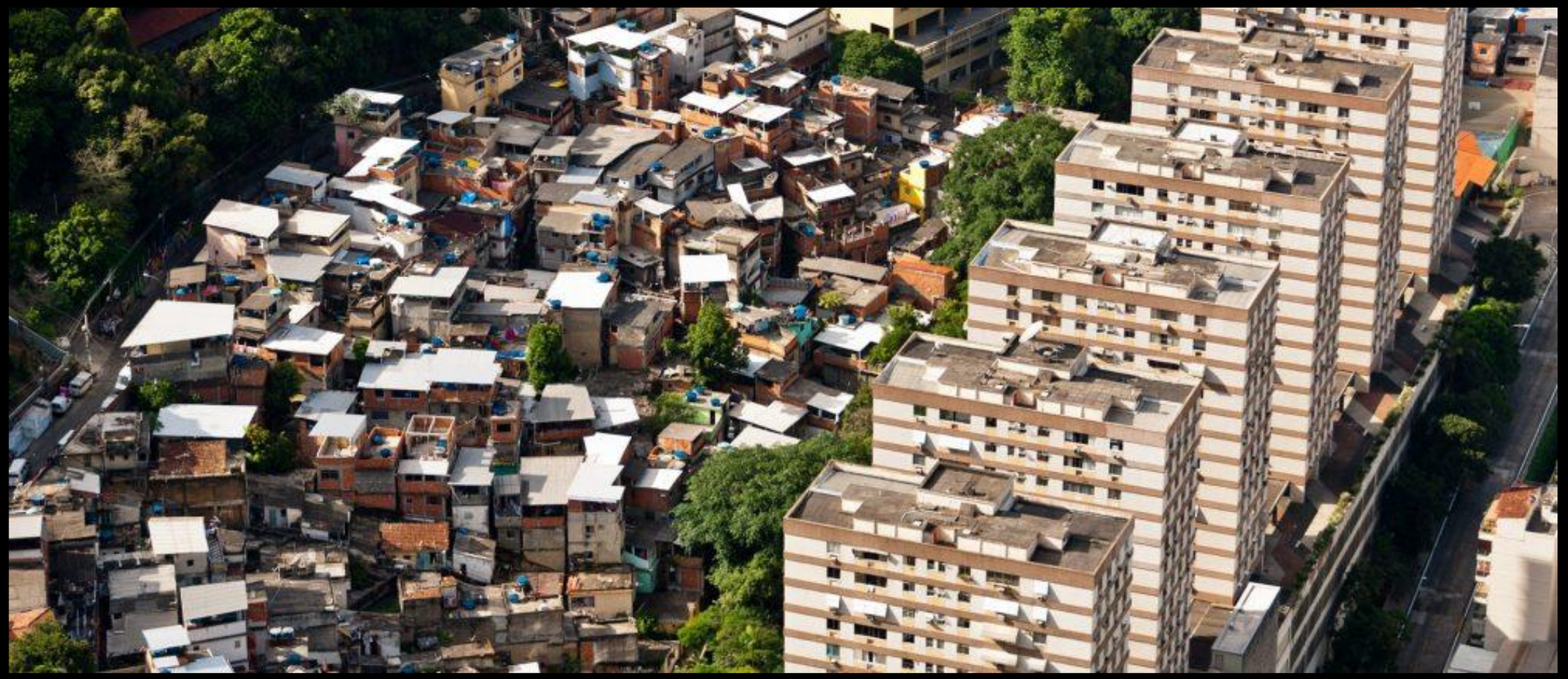
Lifecycle Performance

Reducing the lifecycle costs of assets and designing for re-use.

Sustainability

Achieving carbon neutral assets and reducing waste during construction.

Affordability



Creating high-quality, affordable infrastructure and buildings.

Disaster Resilience

Making infrastructure and buildings resilient against change and natural disasters.

Flexibility/Liveability/ Well-being

Creating infrastructure and buildings that improve the well-being of end users.

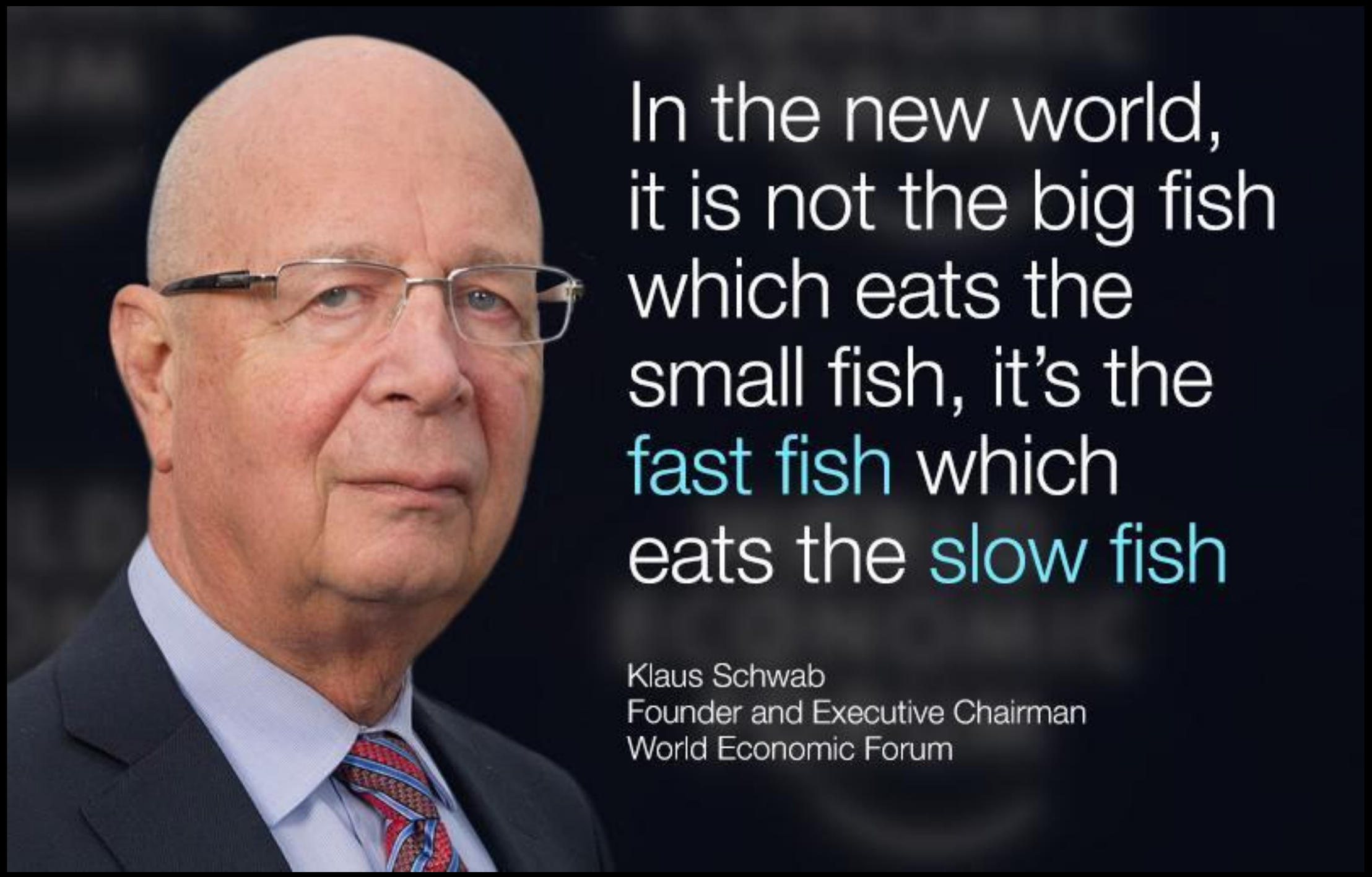
WAY FORWARD

Way Forward

- Technology and standard reference document.
- 4IR Technology High Impact Programs (HIP).
- Programs to flourish Researcher, Scientist and Engineers (RSE).
- Identification and development of cross cutting, versatile and reusable technology, 4IR and beyond.

- Enhance the industry productivity and efficiency.
- Contribution to GDP.
- Sustain country competitiveness.
- Grow local ecosystem
- New Technology.
- New opportunities.
- New business creation.
- New sources of growth.

- Mainstreaming Innovation.
- Wealth creation and economic growth.
- Societal integration and well being.
- Sustainability and quality of life.
- Global competitiveness.


In the new world,
it is not the big fish
which eats the
small fish, it's the
fast fish which
eats the slow fish
Klaus Schwab
Founder and Executive Chairman
World Economic Forum

THANK YOU