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UK Presidential Reception Address 2022/2023
by President Ir Aaron BOK Kwok-ming
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Target Audience: UK Chapter committees, members and the sister institutions

Introduction

Distinguished guests, fellow members, ladies and gentlemen. Good evening.

I feel greatly honoured to deliver this address as the President of the Hong Kong Institution of Engineers (HKIE) in the presence of so many distinguished professionals in this occasion.

I would like to start by sharing with you my second passion after engineering, which is mountain-biking. Actually, apart from biking in Hong Kong, I like traveling around the world by biking. In my view, that is the most wonderful way in sightseeing the spectacular views of famous cities and the panoramic mountains and scenery. For instance, biking along the River Thames. If you think about it, engineering and mountain-biking have a lot in common. Like engineering, mountain-biking requires a precise mix of technology, precision and know-how. And like mountain biking, getting over difficult obstacles in our work depends on the willpower of engineers. That's why you may see in my upcoming speech, elements of mountain biking appear everywhere.

Hong Kong Roadmap

History

Like engineers in the UK contributing a lot to build the Great Britain, Hong Kong engineers contribute a lot to build Hong Kong as a liveable, competitive and sustainable "Asia's World City". Over the decades, Hong Kong engineers build many Engineering wonders, such as the Hong Kong International Airport, our Mass Transit

Railway (MTR) system, as well as the cross-boundary "Hong Kong-Zhuhai-Macao Bridge" and the "Tsing Ma Bridge", etc, etc. But these projects are completed. Then, some people may ask "What's next? Are there any upcoming major development plan in Hong Kong?".

Hong Kong Roadmap Initiatives

I can firmly tell my fellow colleagues here, Hong Kong now stands in times where we are going to build a much smarter, greener and happier city. To meet both opportunities and challenges ahead, Hong Kong has a strategic development plan to implement a new roadmap. A lot of initiatives have been set out by the HKSAR Government. On engineering related sides, these initiatives span over land, housing, transportation and innovation and technology developments. Among various initiatives, our new leadership shows particular determination in accelerating the launch of mega-projects like the Northern metropolis, the Harbour metropolis and new housing and land developments, together with supporting infrastructures.

Furthermore, re-industrialisation and innovation-driven manufacturing are seen as new drivers of growth as part of Hong Kong's new role as Technology & Innovations Hub. All these translate into a strong call from the community for a better and more timely delivery of professional services from the engineering profession.

Current Major Civil Works

To follow the Hong Kong development strategy, mega size infrastructure works are one of the first to commence forming the backbone of the regime. As shown in the map here, there are at least 11 major civil works[1] actively in progress in Hong Kong currently; such as the Hung Shui Kiu / Ha Tsuen, Kwu Tung North and Fanling North

[1] 1) Hung Shui Kiu / Ha Tsuen Development; 2) Kwu Tung North and Fanling North Development; 3) Lok Ma Chau Loop Development; 4) Shek Wu Hui Effluent Polishing Plant; 5) Relocation of Shatin Sewage Treatment Plant; 6) Trunk Road T2 and Cha Kwo Ling Tunnel; 7) Tseung Kwan O - Lam Tin Tunnel; 8) Kai Tak Development; 9) Central Kowloon Route; 10) Tung Chung New Town Extension; 11) Airport Three Runway System

New Development Areas (or in short NDAs); Lok Ma Chau Loop Development; Relocation of Shatin Sewage Treatment Plant into Cavern; Trunk Road T2; Cross Bay Link and Tseung Kwan O - Lam Tin Tunnel (which are going to be open in the coming Sunday); Central Kowloon Route; Tung Chung New Town Extension; and the 3rd Airport Runway project.

Land Development Projects

Hong Kong has a hilly terrain and has been famous on our land hungry problems for decades. Most of our flatter land are engineers-made via site formation or reclamation. In Hong Kong, the total land area is 1,117 km^2 (= 111,700 hectares), but only 25.4% is urban or build-up land[2].

A list of possible solution spaces has now been suggested to respond to the land shortfall in Hong Kong. These solution spaces include the Tseung Kwan O Area 137 development, Northern Metropolis and Kau Yi Chau Artificial Islands; which are expected to contribute towards our major land supply in the medium to long term for housing, commercial, industrial, hospital or all types of developments.

This slide shows the solution space of Kau Yi Chau Artificial Islands which is sometime called the "Harbour Metropolis". For this reclamation development, the potential land supply is 1,000 hectares for up to 260,000 housing units. The plan is also to develop this area as the 3rd Central Business District (CBD) with 4Mm^2 commercial GFA to enhance Hong Kong's competitiveness as a financial, commercial and trade centre.

The Northern Metropolis project is the development strategy which proposes to expand the Northern Economic Belt in Hong Kong. The spatial layout of the Northern Metropolis will cover two district administration areas, viz. the North District and the Yuen Long District, which straddle an area of about 30,000 hectares.

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[2] https://www.pland.gov.hk/pland_en/info_serv/statistic/landu.html

The Northern Metropolis will encompass 2 mature new towns and several NDAs within the region. The Northern Metropolis is the most vibrant area where urban development and major population growth of Hong Kong in the next 20 years will take place.

With these multi-pronged approaches, the supply of additional developable land in Hong Kong will reach 3,280 hectares in the future 10 years and show an upward trend. In 2022-23, the supply of land will be 110 hectares and increase to 480 hectares in 2032-33.

Housing Development

Solving the housing problem sits atop the agenda of the current-term Government. To deal with the problem of inadequate accommodation, Hong Kong targets to increase the total housing supply in 10 years' time to 430,000 units, including 301,000 public housing units and 129,000 private housing units.

Hong Kong will enhance quantity, speed, efficiency and quality in various aspects to vigorously compress the time required to build infrastructures, especially on land and housing supply. To demonstrate this commitment, our new Chief Executive proposed to build additional 30,000 units of new Light Public Housing (LPH), by mainly using Modular Integrated Construction (MiC) method, in the coming five years; thus boost the overall public housing production substantially by about 50% in the first five years period. On private housing side, we will provide no less than 72,000 residential units in the next five years.

Transportation Development

For transport infrastructures, it is recommended to take forward three major road projects, which are indicated by BLUE arrows, such as the Shatin Bypass and Northern Metropolis highway; and three railway projects, which are indicated by RED arrows, such as Central Rail Link and the HK-Shenzhen Western Rail Link, to meet the

transport needs of the Northern Metropolis Development Strategy and other long-term developments in Hong Kong.

Apart from the above said 6 major projects, other railway and road network projects are also under development. These include the Route 11, Tuen Mun Western Bypass, Northern Rail Link and Railway serving the Kau Yi Chau island linking North West New Territories to Hong Kong Island.

All the above Hong Kong developments translates to this graph showing the mid-term to long-term construction expenditure forecast for public and private sectors. Coving all these initiatives, the annual construction expenditure is expected to increase from today's GBP 26 billion to more than GBP 36.5 billion in 10 years' time; which is almost a 40% increase.

Hong Kong Innovation and Technology Development Blueprint

To chart Hong Kong in moving full steam towards its vision of an international innovation and technology (I&T) centre, the Government is going to promulgate the Hong Kong I&T Development Blueprint within this year. The Government will set out major policies and develop relevant infrastructure to achieve 4 broad development directions, including:

1. Enhance the I&T ecosystem and achieve re-industrialisation in Hong Kong
2. Enlarge the I&T talent pool to create strong impetus for growth
3. Develop Hong Kong into a smart city to improve the quality of life of our people
4. Proactively integrate into the overall development of the country and consolidate Hong Kong's advantages as an international city.

To strengthen infrastructure and facilities to achieve the goal, the Government will move ahead with the construction of the Hong Kong-Shenzhen Innovation and Technology Park (HSITP) and expedite the development of San Tin Technopole in the Northern Metropolis. The expansion works of the Science Park and Cyberport will be

completed in phases from 2025 onward, providing 100,000 square metres of additional floor area. The Government is also planning the Science Park/Pak Shek Kok Station of the East Rail Line for commissioning by 2033.

With Mega projects like Harbour Metropolis and the Northern Metropolis ready to go, as per our estimates, construction expenditures may increase by 40% from their regular levels for the next 20 years. Meanwhile, Hong Kong's integration with the Greater Bay Area and the I & T Hub policy will offer new opportunities across all engineering disciplines, from manufacturing and automotive to aviation and Artificial Intelligence. What could be better than this golden age for becoming an engineer? While we should remain humble, there is no reason for us not to be proud.

Get Ready to Meet the Opportunities and Challenges

BUT, are we ready to meet the opportunities and challenges ahead Hong Kong?

As I mentioned earlier, there are a lot of opportunities arising from the Hong Kong infrastructures & developments for our engineers.

To borrow our Chief Executive's slogan of "Enhance quantity, speed, efficiency and quality" in his policy address this year, I would suggest our engineers must be prepared to work smarter to achieve the aims of expediting development, improving efficiency, increasing quantity and raising quality in order to fulfil the missions vested upon us by the community.

Time to Change Roadmap

Engineers need to be prepared; so does the HKIE. I am honour to be elected as the President at this right moment to lead the Institution to meet these amazing opportunities and demanding challenges ahead. In last year, our Immediate Past President, Ir Edwin CHUNG, spearheaded the development of a Time to Change Roadmap which has provided directions to guide the HKIE for years to come.

Launching the HKIE into a new era, the Time to Change Roadmap is an ambitious rejuvenation programme that will ensure the Institution is ready to embrace the future challenge. The roadmap features 45 initiatives to be implemented over five years across five key areas: viz. Pursuing Digitalisation; Enhancing Services to Members; Facilitating Innovation; Boosting Professionalism; and Undertaking Governance Review. We expect that through this important exercise, the HKIE will always remain on par with its peers and be ready to tackle any challenges that may lie ahead.

Work for implementation of the Roadmap began last year in Session 2021/2022. Digitalisation projects and solutions have been initiated in stages for the purpose of aligning various institutional undertakings with the contemporary digital landscape and trends, as well as bringing improvements to efficiency. The digitalisation work is still ongoing. To continue this journey, I have identified my focus area in this Session as Boosting Professionalism.

My theme chosen for this year is

HKIE - Time to Change
Commitment to Change - Boosting Professionalism
香港工程師學會 - 專業維新
WE ARE PROUD TO BE ENGINEERS
以工程師為傲

The above slogan reflects my conviction that pride in our profession is the foundation of the theme of this Session. In my view, this begins with enhancing the visibility of the Institution and improving the image of the profession.

Since August, I have been asking my fellow members to help build the HKIE Spirit Bomb, the 元氣彈. Do you know what Spirit Bomb is? Spirit Bomb is the most powerful weapon of the main character Son Goku at the Japanese Dragon Ball Anime. Spirit Bomb is an attack gathered by absorbing the energy of anything living, and

willing to contribute energy. Our fellow members are just the most appropriate ambassadors to contribute a bit energy each by pitching in and help boost our image. But they may only be willing to help out if they are proud of being engineers and feel respected. It is thus the Institution's mission to give engineers the tools they need to grow as professionals and hence they can in return help our profession's growth and succession. Alongside the slogan, I advocate 3 mottos:

While we are Proud to be Engineers! We will:-

- Deliver our Services to the Community Professionally with Heart and Diligence;
- Tell Good Engineering Stories; and
- Nurture Talented Successors

To begin with, we must Strive for Excellence 自強不息. I urge all engineers to deliver their services professionally with heart and diligence. I have insisted we engineers must always refresh and reiterate our fundamental role and responsibilities and uphold our professional ethics regardless of the difficulties we are facing when performing our services. This earns our respect from the community and hence our image and status.

Year Plan

The next comes my ideas about telling good engineering stories and nurturing successors.

First, we must stop shying away from being proud of our profession. Let's never forget that whether it's going to space or building bridges, engineering is the expression of humanity's ability to make dreams come true. What we do is right at the heart of society's advancement. Who could ever be ashamed of that?

As an organisation of 33,000 members, HKIE is indeed responsible to remind the public about the importance of engineering in our daily life and explain them "Why it is a good career!".

Meanwhile, to improve our image, we are stepping up our efforts to make sure that the public gets the facts instead of misleading headlines. As a multidisciplinary Institution, we will continue to produce impactful research that can inform public policies while arousing the younger generation' interest in engineering. We will launch a task group dedicated to look into suggested initiatives or policies that can foster the re-industrialisation of the city, as this is an issue the HKIE is well positioned to lead. We will also invite Divisions and Committees to produce videos and write articles to showcase how engineers contribute to society, while using our YouTube channel to engage directly with the public.

Most importantly, we will host the "Hong Kong Engineers Week 2023" from 3 to 11 March next year to foster the visibility of the engineering profession and the diversity and significance of the work engineers do. May I appeal you all to come to Hong Kong to join our activities next year when the games are rolled out.

Our second task is to make our voice heard in the public square; but our voice must be based on scientific and professional views. We are considering ways to step up our engagement with the media and present our side of the story before those non-professional "experts" capture the spotlight.

In addition to being more pro-active in increasing their public exposure, our Officers and some specialists from Divisions will receive media training to be ready to respond to incidents within hours.

As mentioned above, we have been urging the government to review its procurement policy to ensure that more reasonable bids get accepted. I am glad that the government has accepted some of the measures we have recommended in March and to see some signs of improvement recently. Besides ensuring that experienced engineers receive fairer packages and achieve a better work-life balance - both factors that will make the

profession more attractive to the younger generation - this will also motivate engineers to be more creative, thereby improving productivity and reducing overall total cost. We shall also lobby the government to streamline the submission and approval process. On this front, we have submitted a report "Streamlining Building Works and Infrastructure Development Processes" [3] to the government in September containing recommendations about various aspects related to the design and construction stages of projects. It's important that the relevant authorities should be able to fulfil their regulatory duties while at the same time acting as facilitators when it comes to helping deliver projects at a faster pace. All that's needed is for this facilitation to be Fair and Open to all parties. A more efficient process in the supply of land and housing would in fact directly benefit the community at large.

This slide shows how we made our voices heard.

Last but not least, we must address education. As shown in the report on "Research on Engineer Manpower Forecast[4]" that we submitted to government in April, Hong Kong may soon face a significant shortage of engineers. Given the increased complexity of the profession and the huge growth ahead, we need to attract the best and the brightest that Hong Kong has to offer. Too many talented secondary students who should have a natural affinity for our profession - such as those good in maths or interested in STEM - choose to stay away from engineering. Factors like bad publicity, peer pressure and the lack of exposure to engineering at school make other careers look trendier. That's why we must engage with parents, teachers and students to let them know about the exciting career opportunities that engineering offers.

In addition to expanding our School Ambassador Programme, we will introduce a "One School One Engineer" programme. I'm glad that the Education Bureau accepted it

[3] https://www.hkie.org.hk/docs/HKIE_streamline_processes.pdf

[4] Research on Augmenting Engineer Manpower to Cope with the Foreseeable Surge in Demand. https://www.hkie.org.hk/docs/HKIE_Research_on_Manpower.pdf

and termed it as “Engineers on Campus” to help promote STEAM activities. We are going to engaging directly with teachers or school sponsoring bodies on a “train the trainers” concept while thinking of ways to support them with guidance about careers in engineering.

This slide shows our engagement with teachers, students to let them know about the exciting engineering opportunities.

Final Remarks

It’s obvious that we, HKIE, will have a lot of work to do. What unfortunate is that the COVID-19 has disrupted the HKIE’s regular calendar, and I will be the President for a shorter period than usual. But never mind.

As mountain-biking Olympic champion Julia Furtado said “the secret to mountain biking is pretty simple: The slower you go, the more likely it is that you will crash”. This time, we can’t afford to just cruise forward to “keep balanced” as Albert Einstein said hundred years ago; we have to go faster. And I am happy to embrace and enjoy the challenge of doing more faster, because I know that I can count on the collaboration of passionate engineers of the HKIE to form the most powerful Spirit Bomb 元氣彈 in Hong Kong. At the same time, may I extend our invitation to the professional engineers in UK to consider coming to Hong Kong to join our mission of charting this wonderful engineering journey in the next 10 to 20 years. Together, we can help Hong Kong ride to the brightest future it deserves.

Thank you!

Ir Aaron BOK Kwok-ming
President
The HKIE