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7. 2023

PROJECT STRATEGY & GOVERNANCE OFFICE
項目策略及管控處

The construction industry – A new era with boundless opportunities
建造業 — 無盡機遇新時代

Project Strategy and Governance Office

項目策略及管控處

The government has continued to invest in capital works to improve the living quality and maintain long term competitiveness of Hong Kong. Meanwhile, we are faced with the challenges of high construction cost and an ageing construction workforce. The general public also has an increasing aspiration for better performance of capital works projects.

In June 2016, the Project Cost Management Office (PCMO) was established to implement cost management initiatives for the delivery of capital works projects in a timely and cost-effective manner. In April 2019, PCMO was upgraded and renamed as the Project Strategy and Governance Office (PSGO) for implementing strategic initiatives and enhancing capabilities in cost surveillance and project governance. PSGO adopts a holistic approach to improve the performance of capital works projects and strengthen cost management through the following initiatives:

政府一直投資於基本工程項目，以改善市民的生活環境和維持本港長遠的競爭力。與此同時，我們要面對建造成本高昂及勞動力高齡化的挑戰。市民大眾對基本工程項目的表現也抱有越來越高的期望。

2016年6月，我們成立項目成本管理辦事處，推行成本管理措施，使基本工程項目如期完成，又符合成本效益。到了2019年4月，我們進一步把項目成本管理辦事處升格為項目策略及管控處，推行策略性措施，加強成本監察和項目管控的能力，並採取全面綜合的方式，從以下各方面提升基本工程項目表現和成本管理：

Strategy
推展策略措施

Implement "Construction 2.0" with initiatives such as High Productivity Construction, digitalisation and applied R&D to uplift productivity

推行「建造業2.0」，包括推動高效建築技術、數碼化及應用研發等措施提升生產力

Governance
加強項目管控

Strengthen cost management and control from project inception to completion

由項目立項至竣工各個階段加強成本監察和管控

Capability
提升專業能力

Train up major project leaders and mid-tier managers with innovative mindsets and world-class leadership skills

培訓工程領導人員及中層主管，培養創新思維及世界級領導技能

Collaboration
增進夥伴協作

Enhance collaboration with local industry and international stakeholders

加強與本地業界及國際持份者合作

Construction Outlook

建造業展望

The material and labour costs recorded by the Census and Statistics Department were generally stable in the past year. On the other hand, a general upward trend is observed for both Civil Engineering Works Tender Price Index (CEWTPI) and Building Works Tender Price Index (BWTPI). Global inflation, supply of local construction labour and the Ukraine War will continue to be the main factors affecting future construction costs.

The government will put forward various large-scale infrastructure projects, including the development of the Northern Metropolis and the Kau Yi Chau Artificial Islands, to drive economic growth. The Government's annual expenditure on capital works will gradually increase from about $80 billion to an estimated amount exceeding $100 billion in the next few years. When these projects are combined with others to be implemented in both public and private sectors, the total annual construction volume in Hong Kong is expected to reach $300 billion.

Overall, it appears that the construction industry has been able to quickly recover from the pandemic, and it is anticipated that the performance of the industry will remain steady with good prospects ahead for the rest of 2023.

根據政府統計處的數據，整體材料和工資成本在過往一年大致穩定。另一方面，土木工程和建築工程的投標價格指數均呈上升趨勢。全球通脹、建造業人手供應以及烏克蘭戰爭的發展將仍是影響未來建築成本的主要因素。

為推動經濟增長，政府正準備推出各種大型基建項目，包括北部都會區和交椅洲人工島。未來數年，政府的基本工程開支會由現時每年約800億元逐漸增加至預計每年超過1,000億元，而計及其他私人和公營項目，整體香港建造業的工程總值將會增加至每年約3,000億元。

總體而言，建造業已迅速從疫情中恢復並持續增長，預計行業的整體表現在2023年下半年將表現穩定，前景良好。

Market Movement | 市場動向

Construction Cost Ranking 建造成本排名：

No.8 (Global 環球) **No.1** (Asia 亞洲)

Building Works Tender Price Index (BWTPI) (1Q 2023)
建築工程投標價格指數 (2023年第一季)

⬆5.2% YoY 按年

Civil Engineering Works Tender Price Index (CEWTPI) (4Q 2022)
土木工程投標價格指數 (2022年第四季)

⬆2.3% YoY 按年

Highways Department Construction Cost Index (March 2023)
路政署建造成本指數 (2023年3月)

Labour Index 工資指數
⬆2.2% YoY 按年

Material Index 材料指數
⬇5.4% YoY 按年

Approved capital works projects by Finance Committee of LegCo in 2023 (Up to June)
2023年立法會財委會通過基本工程項目 (直至6月)

Number / 數目：**28**

Value / 金額：**$86.8B / 868億元**

Capital works contracts awarded in 2023 (Up to March)
2023年已批出基本工程合約 (直至3月)

Number / 數目：**13**

Value / 金額：**$4.7B / 47億元**

Exchanges on infrastructure project delivery

交流推展基建項目經驗

The challenges we face in the implementation of infrastructure projects are not unique to Hong Kong. We have been liaising with different authorities on how to formulate effective measures to tackle the challenges. To foster collaboration, we have signed Memoranda of Understanding (MOU) with various countries to leverage joint government effort to uplift project delivery capability. PSGO will draw on relevant practices and experience when devising policies for Hong Kong in improving the performance of infrastructure projects.

推展基建項目所面對的挑戰，並非香港獨有。我們與各地政府進行聯繫，瞭解它們為應對挑戰所作出的各種有效措施。為了促進相互協作，我們與各地政府簽訂了合作諒解備忘錄，加強項目的推展能力。項目策略及管控處將借鑑相關做法和經驗，為香港設計合適的政策，以提升基建項目的表現。

1.12.2022

The Memorandum of Understanding signed with the Ministry of Finance, Singapore

與新加坡財政部簽署合作諒解備忘錄

22.2.2023

The Memorandum of Understanding signed with the Infrastructure and Projects Authority, the United Kingdom

與英國基礎設施和項目管理局簽署合作諒解備忘錄

Collaboration in exchanging expertise and experience on the following aspects:

雙方就以下方面作出專業知識和經驗交流：

- **Improve productivity** 提升建造業生產力
- **Financial and cost management** 加強成本管理
- **Digitalisation** 數碼化
- **Innovative construction methods** 創新建造方法
- **Enhance project delivery capability** 改善項目推展能力

2023-24 Budget

2023-24年度 財政預算案

To further strengthen the competitiveness of our construction industry, the government will promote the extensive application of advanced technologies in the construction industry to improve construction methods and materials:

政府將推動建造業大量應用先進科技，以進一步加強建造業的優勢：

1 Earmarked $15 million for studying and putting in place measures to strengthen the Modular Integrated Construction (MiC) Supply Chain.

預留1,500萬元，研究及落實加強「組裝合成」組件供應鏈的措施。

$15 million

2 Earmarked $30 million for conducting a study on the construction of the first Advanced Construction Industry Building.

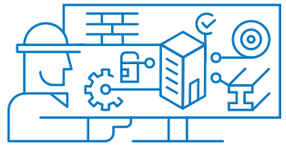
預留3,000萬元，研究興建首座先進建造業產業大樓。

$30 million

3 Earmarked $30 million for conducting a study on establishing the Building Testing and Research Institute.

預留3,000萬元，研究成立建築研發及測試中心。

$30 million



High Productivity Construction – MiC and MiMEP

高效建築 –「組裝合成」和「機電裝備合成」

PSGO is actively supporting High Productivity Construction (HPC) methods such as Modular Integrated Construction (MiC) and Multi-trade Integrated MEP (MiMEP) to tackle the challenges faced by the construction industry. HPC enables labour intensive construction activities to be transferred to the factory, so as to reduce on-site labour, thus uplifting the on-site productivity and enhancing performance on works quality, site safety and environmental sustainability.

Following the 2022 Policy Address, a cross-departmental steering committee was established by DEVB for co-ordinating the development of High Productivity Construction methods and the streamlining of related approval processes to remove barriers for the industry. The steering committee is formulating measures to strengthen the MiC supply chain and fostering collaboration with the GBA. In addition to expediting housing supply, these measures will strengthen the leading regional position of Hong Kong's construction industry in the adoption of MiC.

The government has also set up a dedicated team as a one-stop platform to provide technical support to the industry and strengthen the communication and collaboration with relevant departments in facilitating project approvals, and to further promote the adoption of high productivity construction such as MiC and MiMEP in both public and private sectors to expedite housing supply.

PSGO一直積極推動「組裝合成」(MiC)和「機電裝備合成」(MiMEP)等高效建築技術，以應對建造業面臨的挑戰。高效建築將建築工序轉移至廠房進行，降低對工地人手的需求，從而提高工地生產力、提升工程質素、改善工地安全及減少對周邊環境的影響。

根據2022年施政報告，發展局已成立跨部門督導委員會，專責統籌高效建築的發展及精簡相關的審批，為業界拆牆鬆綁。委員會正制訂加強組件供應鏈的措施，並促進與大灣區的協作，加快房屋供應之餘，亦加強香港建造業在區內採用「組裝合成」的領導地位。

政府亦已設立專責團隊作為一站式平台，為業界提供技術支援，加強與有關部門溝通及協作，便利項目審批，進一步推動公私營界別採用MiC和MiMEP等高效建築技術，加快樓宇供應。

Three major principles of High Productivity Construction
高效建築三大理念

Off-site prefabrication
場外預製

Multi-trade integration and module maximization
多工合成與組件最大化

Plug and play
隨插即用

Joint Practice Note No. 8 by Buildings Department, Lands Department and Planning Department

屋宇署、地政總署及規劃署聯合作業備考第八號

This Joint Practice Note promulgates enhanced facilitation measures for promoting wider adoption of MiC in new buildings by granting of gross floor area (GFA) and site coverage (SC) concessions and supporting applications for minor relaxation of building height (BH) restriction.

此聯合作業備考進一步鼓勵新建築物更廣泛採用「組裝合成」建築法，包括為相關項目提供額外樓面面積和上蓋面積的寬免，並支持適度放寬樓層的高度限制。

10%

Gross Floor Area
樓面面積

10% MiC floor area be disregarded
「組裝合成」建築法樓面面積豁免達10%

10%

Site Coverage
上蓋面積

10% MiC floor area not be counted
「組裝合成」建築法上蓋面積寬免達10%

4%

Building Height
樓層高度

Increase of building height up to 4% of total storey height of MiC floors
「組裝合成」建築法放寬樓層的高度限制至4%

Applied R&D in Construction

建造業應用研發

Applied Research and Development (R&D) in public works projects is crucial for supporting innovation in the construction industry at large. To take forward the applied R&D policy, a Task Force on Applied R&D in Public Works Projects was established by DEVB in 2021 for steering applied R&D. The 2022-23 Budget also earmarked $30 million to promote applied R&D and the pilot adoption of new materials and innovative construction technologies in public works, with a view to enhancing the overall productivity and performance of the construction industry.

Under the coordination of the Task Force, works departments have identified over 140 nos. of Applied R&D items. Among them, several high-impact items which can bring considerable cost, time and productivity benefits, as well as having wide applicability in other projects were identified:

- S690 high strength steel
- Vibration-resistant concrete lining
- Concrete sensors
- Self-compacting backfill materials
- Study of uplifting pile bearing capacities

Task Force shall take lead to steer pilot application of these high-impact applied items in public works and coordinate the establishment of relevant requirements and acceptance standards by relevant authorities.

工務工程的應用研發對支持建造業的創新非常重要。發展局於2021年成立工務工程應用研發專責小組推動應用研發的發展。政府在2022-23年度財政預算案亦已預留3,000萬，通過工務工程應用創新建築技術和新物料，提升建造業的整體生產力和表現水平。

在工作小組的統籌下，各部門已確立了超過140項應用研發項目。工作小組在當中選取了一些能顯著減低建造成本、縮短建造時間、提升生產力，以及能廣泛應用於不同工程類別的項目：

- S690高強度鋼材
- 抗震混凝土內壁
- 混凝土傳感器
- 自壓實回填材料
- 提升樁柱承載壓力研究

工作小組將推動於工務工程率先試用這些具高影響力的應用研發項目，並統籌監管部門制定相關規範及接納標準。

Applied R&D Initiative – Uplifting pile bearing capacity

應用研發項目 – 提升樁柱承載壓力

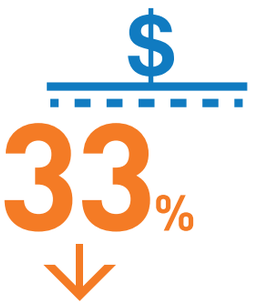
Over the years, the Geotechnical Engineering Office (GEO) has made use of geotechnical data in many large scale projects (e.g. Airport Express, West Rail, the West Kowloon District Development, etc.) for optimizing the foundation design in Hong Kong. With the steering from the Task Force on Applied R&D in Public Works Projects led by DEVB and with concerted effort from the Works Departments, GEO has issued a Technical Guidance Note No. 53 (TGN 53) to increase the allowable bearing pressure of slightly to moderately decomposed granite and volcanic rocks (i.e. the common founding rocks for bored piles) from 5 MPa to 7.5 MPa. This will lead to substantial cost savings in foundation cost and construction time.

多年來，土力工程處利用從多個大型項目（例如機場鐵路、西鐵、西九發展區等）收集到的岩土數據來優化本地的地基設計。在發展局領導的工務工程應用研發專責小組和各工務部門的共同努力下，土力工程處發佈了第53號技術指引(TGN53)，將輕度至中度風化花崗岩和火山岩層（即鑽孔樁的常用基石）的樁柱承載壓力由5 MPa提升到7.5 MPa。這將大大節省地基成本和施工時間。

50%

Pile bearing capacity

樁柱承載壓力



33%

Piling costs

地基成本

Digitalisation for capital works projects

基本工程項目數碼化

Digitalisation is the key to drive innovation and to improve efficiency, uplift productivity, enhance safety and sustainability for the construction industry. DEVB has introduced the Digital Works Supervision System (DWSS) since 2020 to enhance standard and efficiency of works supervision during construction, and the response from the industry is very positive. To date, there are more than 150 works contracts adopting DWSS with total contract value of around $190 billion, and over 9,300 users. To promote the wider adoption of DWSS, we have issued the new Development Bureau Technical Circular (Works) no. 2/2023 in February this year and DWSS will be adopted for all capital works contracts with estimated cost exceeding $30 million.

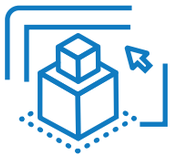
We are also driving the digitalisation throughout the project life cycle, covering the planning and design stage as well as the operation and maintenance (O&M) stage. This includes the development of Digital Planning and Design System (DPDS) in the planning and design stage, and coordination with the works departments on their Asset Management Systems (AMS) to facilitate O&M of government assets. Furthermore, we are developing in phases the Integrated Capital Works Platform (iCWP) to collect and consolidate data from these digital systems for continuous monitoring and data analysis such that the delivery of capital works projects and the management of infrastructure facilities could be further enhanced.

數碼化是推動建造業創新和提升工程效率、生產力、安全表現及可持續性的關鍵。自2020年起，發展局開始推行數碼工程監督系統（DWSS）以提升工程建造階段的監管水平和效率，業界的反應非常積極。到目前為止，已有超過150個工程合約採用DWSS，合約總價值約為1,900億元，用戶超過9,300人。為了推動基本工程更廣泛應用DWSS，我們於今年2月頒佈了新的發展局工務技術通告編號2/2023，要求所有3,000萬元以上的基本工程合約必須採用DWSS。

我們同時在推動整個工程項目生命週期的數碼化，以涵蓋規劃和設計以及營運和保養階段。當中包括開發數碼規劃和設計系統（DPDS），以及與工務部門協作發展資產管理系統（AMS）。另外，我們正分階段開發綜合基本工程平台（iCWP）收集和整合這些數碼系統的數據，透過持續的性能監控和數據分析，更有效推展基本工程項目和管理基建設施。

Digitalisation throughout Project Life Cycle
工程項目生命週期數碼化

Planning & Design
規劃及設計



Digital Planning and Design System (DPDS)
數碼規劃和設計系統

Construction
建造

Digital Works Supervision System (DWSS)
數碼工程監督系統

Operation & Maintenance
運作及保養

Asset Management System (AMS)
資產管理系統

Integrated Capital Works Platform (iCWP)
綜合基本工程平台

DWSS / 數碼工程監督系統

Introduction in 2020
年起推行

>150 works contracts
工程合約

~$190B
約1,900億元

Strengthening cost management and governance

加強成本管控

Tasked with formulating and overseeing the implementation of policies aimed to strengthen cost management and control throughout the delivery of capital works projects, PSGO capitalises on all cost-saving opportunities and fosters budget and expenditure control to prevent cost overrun and programme delay. We also track the development of projects from their inception to completion, including detailed design and funding application stages, by starting the project vetting process from the outset and conducting regular reviews and follow-up actions.

We leverage the principles of "fitness for purpose" and "no frills" to conduct project vetting, with a view to enhancing cost-effectiveness of the construction works. We developed a cost benchmarking system for various types of works to have a better understanding of the project cost level. If the estimated project cost exceeds the relevant benchmark, we will examine the major components of the project and optimize the design without compromising functionality and quality.

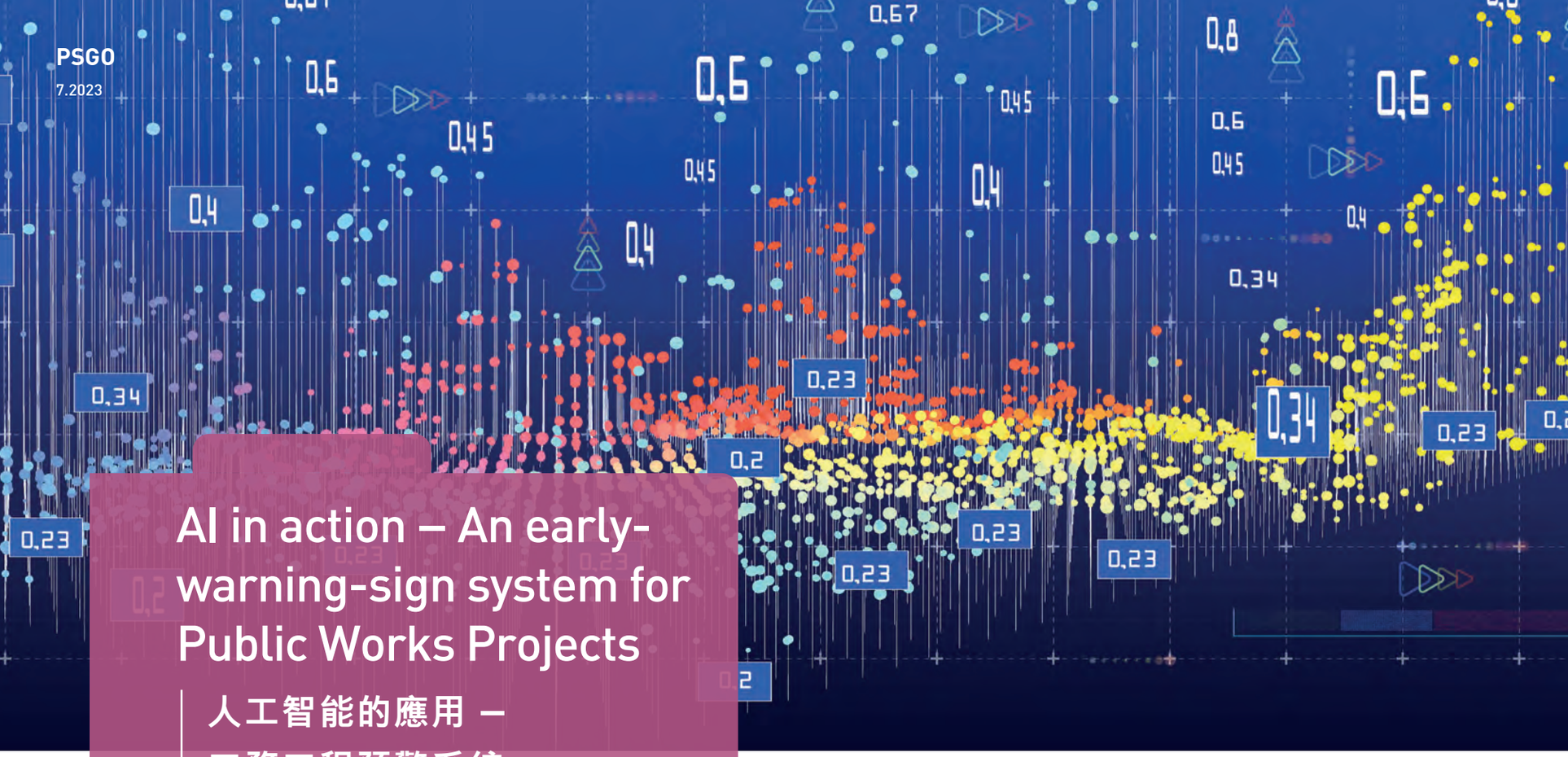
為了實施更嚴格的成本控制及管理，項目策略及管控處制定了各種合適政策，並監督政策的執行，務求在基本工程項目的推展過程中，把握所有減省成本的機會，同時加緊控制項目預算及開支，以防止出現超支及工程延誤。此外，由項目立項開始，我們便會進行審核程序，並作定期檢討和跟進，以監察項目的發展，包括詳細設計過程、申請撥款，直至竣工的各個階段。

我們在審視工程項目時，會以「目的為本、實而不華」為原則，冀能節約工程成本並提升效益。我們為不同類型項目訂定估算造價基準。如發現擬推展項目造價偏高，便會檢視該項目內各主要組成部份，並在不影響項目功能和質量的前提下，提出設計優化建議。

480
Capital works projects scrutinised (since 2016)
已檢視基本工程項目（2016年至今）

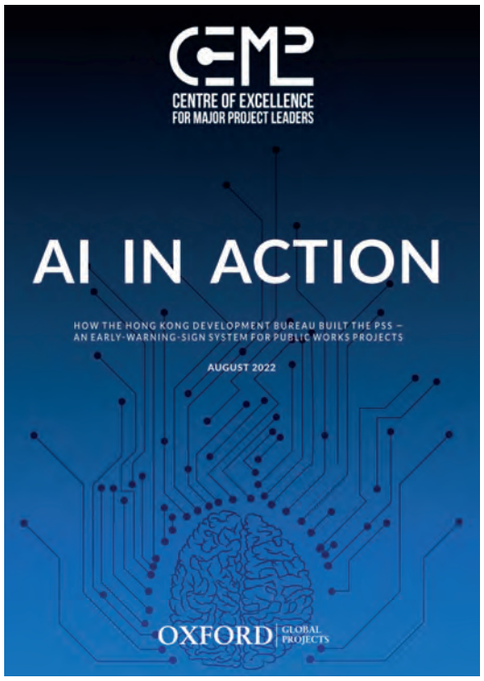
$980B / 9,800億元
Original total project estimates
原預算總值

Cost saving 節省建造成本 16.3%
$160B / 1,600億元



AI in action – An early-warning-sign system for Public Works Projects

人工智能的應用 – 工務工程預警系統



Full Report
報告全文

To improve project performance, PSGO and Oxford Global Projects jointly developed an AI-enabled Project Surveillance System, which examined the database of over 600 projects in Hong Kong and analyzed typical and atypical cost and schedule performance. It then identified the most important early warning signs that a project is likely to underperform, and give senior management attention for timely action, leading to better cost and schedule outcomes. We believe that this pioneering approach will inform future international efforts to improve the performance of construction projects.

為提升項目表現，項目策略及管控處與Oxford Global Projects協作研發擁有人工智能的項目監察系統。該系統整合本港超過600項工程的項目數據，並分析項目成本與進度表現。系統能提供重要預警信號，預視項目可能出現的挑戰，並通知高層領導人員及時制定相應措施，從而令項目有更好的成本及進度表現。我們相信這種創新的方式能改善工程項目的表現，並在未來於國際上有更廣泛的運用。

Centre of Excellence for Major Project Leaders

主要項目精英學院

The Centre of Excellence for Major Project Leaders (CoE) was established in July 2019 following the announcement in the 2018 Policy Address. As the first of its kind in Asia, the CoE offers a high-level project management and leadership development programme to senior government officials and major project leaders. The aim is to equip them with a more innovative mindset and world-class leadership skills to uplift their project delivery capability and improve project performance as a whole.

The development programme for the CoE currently includes the Major Projects Leadership Programme (MPLP) delivered by the Saïd Business School of the University of Oxford and the Project Delivery Capability Programme (PDCP) delivered by the Institute of Advanced Executive Education of the Hong Kong Polytechnic University, and both programmes are currently conducted for the second year. Following the Financial Secretary's announcement in his 2022-23 Budget, the training of the CoE this year shall be extended to the stakeholders outside the government with a view to jointly taking forward the long-term major development plans of Hong Kong.

主要項目精英學院由政府於2018年施政報告中提出，並於2019年7月正式成立。學院開創亞洲先河，為高級公職人員和主要項目領導人員提供高水平的項目管理及領導發展課程，以培養他們具備更創新的思維及世界級的領導技能，從而達到提高項目推展能力及改善項目整體表現的目標。

學院目前主要的培訓項目包括由英國牛津大學Saïd Business School籌辦的「主要項目領導計劃」，以及由香港理工大學高級管理深造學院籌辦的「項目推展能力計劃」，兩項課程均於今年踏入第二屆。根據2022-23年度財政預算案，學院的培訓對象於今年已擴展至政府以外的持份者，以期共同推動香港長遠的大型發展計劃。

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