

ITEM FOR FINANCE COMMITTEE

CAPITAL WORKS RESERVE FUND

HEAD 710 – COMPUTERISATION

Judiciary

New Subhead “Provision of Information Technology Infrastructure in the New District Court Building at Caroline Hill Road and Upgrading of Information Technology Infrastructure of the Judiciary”

Members are invited to approve a new commitment of \$780,832,000 for the Provision of Information Technology Infrastructure in the New District Court Building at Caroline Hill Road and Upgrading of Information Technology Infrastructure of the Judiciary.

PROBLEM

There is a need for the Judiciary to provide the necessary information technology (IT) infrastructure in the new District Court Building (DCB) at Caroline Hill Road to enable the latter’s commissioning in 2027. To tie in with this timeframe, the Judiciary also needs to upgrade its overall IT infrastructure to cater for the anticipated needs in the next two decades for hosting more servers, network equipment and other shared IT services in all court premises of the Judiciary.

PROPOSAL

2. With the support of the Office of the Government Chief Information Officer (OGCIO), the Judiciary proposes to create a new commitment of \$780,832,000 to concurrently take forward a package of three inter-related IT proposals, as follows, to –

- (a) provide the necessary IT infrastructure to support the use of technology and implementation of technology-related initiatives in all aspects of court operations in the new DCB;

/(b)

- (b) set up a new data centre in the new DCB to replace the aged data centre at the High Court Building (HCB); and
- (c) upgrade the Judiciary's IT infrastructure in the data centre of the West Kowloon Law Courts Building (WKL CB).

JUSTIFICATION

Provision of modern IT infrastructure in the new DCB to enable wider use of technology

3. The Judiciary consulted and secured the support of the Panel on Administration of Justice and Legal Services for the new DCB project at the meeting on 28 March 2022. Subsequently, on the recommendation of the Public Works Subcommittee (PWSC), the Finance Committee approved, on 20 May 2022, the funding proposal at an estimated cost of \$5,800 million¹ in money-of-the-day prices for the construction of the new DCB. Construction works are under way and expected to complete by December 2026 and the new DCB commissioning by late 2027.

4. The new DCB project will re-provision the District Court (DC), the Family Court (FC) and the Lands Tribunal (LT) currently located in different law courts buildings² at a single site. The DC, the FC and the LT are handling a large volume of important criminal and civil cases within their respective jurisdictions. The new DCB comprises 70 courtrooms and 82 chambers of Judges and Judicial Officers (JJOs) which represent an increase of 32% and 46% respectively over the provisions in 2022, together with supporting offices and registries for the DC, the FC and the LT.

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¹ The \$5,800 million approved funding for the new DCB construction project (relevant PWSC paper at <https://www.legco.gov.hk/yr2022/english/fc/pwsc/papers/p22-03e.pdf>) includes an estimated amount of around \$38 million for the trunking and cabling works for the backbone network systems that should be undertaken together with the construction works. In addition, around \$192 million of the allocation for "Furniture and Equipment" in the approved funding has been reserved for electronic systems such as basic audio-visual (AV) systems, public address systems, queuing systems, signage, etc. Since the installation of these electronic systems often involves interior fitting out works, it is considered more suitable to have these systems provided by the construction contractor and hence the funding provision for which was included in the capital works project. These funding arrangements for IT-related components are in line with the Government's established rules and practice for relevant capital works projects. As indicated by the Judiciary at the PWSC meeting on 27 April 2022, a separate funding proposal for the setting up of the IT infrastructure and related services would be submitted to the Finance Committee in due course.

² Currently, the DC is located in the Wanchai Law Courts Building and the Tsuen Wan Law Courts Building, the FC in the Wanchai Law Courts Building and the Revenue Tower, and the LT at 38 Gascoigne Road, Kowloon.

5. It is essential to equip the new DCB with all the necessary IT and AV infrastructure currently provided at the existing DC and other law courts buildings to support all aspects of court operations before its commissioning by the end of 2027. Otherwise, it will be practically not possible for the Judiciary to conduct normal court business in the new DCB within our planned timeframe.

6. The Judiciary is committed to making greater use of technology for enhancing the efficiency of court business. Continued efforts are made to explore new and emerging technologies to deliver more electronic services with a view to meeting changing operational needs. In line with this strategy, the new DCB will also need to be equipped with modern and robust IT infrastructure that will enable the integration of IT, AV, Digital Audio Recording and Transcription Services (DARTS)³ systems and other technology-related facilities, so as to provide better support for court operations and implementation of technology-related initiatives of the Judiciary in times ahead.

7. We propose to provide an IT infrastructure which is secure, reliable and flexible to facilitate and sustain the effective and efficient court operations of the new DCB. The infrastructure will also provide sufficient flexibility and capacity to incorporate the latest IT and AV technologies for meeting the evolving operational needs of the courts and registries, as well as delivering new and enhanced services such as voice-to-text applications, interactivity in remote hearings, etc. as and when appropriate. The infrastructure will be designed with scalability and flexibility to adopt new technologies and support new initiatives in future.

8. All courtrooms, JJOs' chambers and supporting facilities in the new DCB will be designed and built on the basis of a "clustering and share-use" principle so as to optimise the use of available floor space. Under this approach, apart from the 70 courtrooms and 82 chambers which will be equipped with improved IT and AV facilities for sharing and flexible deployment by the DC, the FC and the LT as necessary, certain supporting facilities including consultation rooms, witness waiting rooms, video conferencing rooms, segregated court waiting rooms of the FC and breakout rooms for dispute resolution will also be equipped with IT and AV facilities for multiple purposes. For example, to facilitate the wider use of remote hearings, all consultation rooms will be equipped with video conferencing facilities. Such facilities will also seek to support more self-help facilities and services, such as self-help counters for e-filing, e-document inspection and document scanning.

/9.

³ Since 1996, the Judiciary has been implementing the DARTS system which is a digitised and multi-channel recording system for recording all court proceedings and enabling easy search and retrieval of audio recordings for reference by the JJOs and parties concerned. The transcripts of court proceedings can be produced upon request. All courtrooms and JJOs' chambers are now equipped with facilities for access to the system.

9. The proposed IT infrastructure seeks to put in place modern and enhanced IT/AV facilities (as compared with existing law courts buildings) in an integrated system for supporting court hearings and operations in the new DCB. This will enable the provision of the full spectrum of facilities and services in all courtrooms, JJOs' chambers, registries, consultation rooms and other service areas. Such facilities include remote hearings, broadcast of court proceedings, and DARTS system. WiFi facilities and 5G services will also be provided in the building for presentation, information access and communication for speed and timeliness.

10. Improved IT support will be provided at the ancillary facilities to enhance efficiency of court operations. Enhanced IT facilities will be made available at court registries, listing office, oath and declaration office, search room, etc. IT facilities will also be enhanced to facilitate litigants' use of information and electronic services at the new integrated Information Centre, Self-service Centre and integrated Accounts Office. For instance, litigants can access electronic services for filing of court documents and making electronic booking of appointments with registries at the Self-service Centre set up in the new DCB.

Enhancement of IT and information/data security protection in all court buildings

11. The Judiciary attaches great importance to IT security, particularly the storage, management and protection of case data involved in judicial proceedings at all levels of court. In this regard, the Judiciary has taken into account the professional advice from the OGCIIO in the design and planning of the IT infrastructure in the new DCB, as well as the upgrading of IT infrastructure of the Judiciary including the two data centres at the new DCB and the WKLCB.

12. The IT infrastructure facilities of the new DCB have been designed on the basis of the highest level of IT security. The core technologies and technical services adopted generally conform with the highest government standards in data management and protection, service stability and sustainable development, covering three aspects of information/data security protection, namely confidentiality, integrity and availability. For this purpose, the network infrastructure of the new DCB will adopt a multi-layer design such that network systems serving the internal and external users of the Judiciary will be physically separated. Also, enterprise grade 5G services will be provided so that wireless data transmission within the new DCB will be completely controlled by the Judiciary and both a secure, private network for use by internal users as well as an open, public network for guests and other court users will be made available.

/Multi-layered

Multi-layered firewalls, network access control, intrusion detection, and automated intelligent security monitoring and alert systems, including Endpoint Detection and Response (EDR)⁴ system, Network Detection and Response (NDR)⁵ system, and Security Information and Event Management (SIEM)⁶ tools, will be implemented to ensure early detection of abnormalities for appropriate follow-ups.

13. The Judiciary will observe the relevant standards issued by the OGCIO, the Government's Stores and Procurement Regulations, as well as those promulgated by national and international authorities, in the procurement and acquisition of IT hardware, software and implementation services.

Reprovisioning and upgrading of two data centres in separate court premises

14. There are currently two data centres in two separate court premises directly managed by the Judiciary, i.e. the primary data centre at the WKLCB and the secondary one at the HCB. To facilitate the implementation of the Information Technology Strategy Plan, the Judiciary upgraded its IT infrastructure at the HCB in 2016 and established the primary data centre at the WKLCB to serve the IT operations of the whole Judiciary in 2017. By 2027, the major infrastructure components of the data centres including server farms, centralised storage systems, backup systems, IT network and IT security systems will have been in use for more than nine years and approaching the end of their lifespans. It is necessary to upgrade the aging components in a timely manner to ensure the continued availability and serviceability of the IT systems of the Judiciary. Also, the HCB data centre, which is currently the secondary data centre for all Judiciary premises, is deficient in floor space and electricity supply for meeting the long-term needs of the Judiciary in implementing new and enhanced IT systems, and catering for the projected data growth.

15. Taking into account the existing conditions of the two current data centres, the highest IT security standards required for the storage and protection of case data at all levels of court, the operational experience of managing the two existing data centres within court premises, as well as the imminent need of having in place two modern data centres at two separate court premises to tie in

/with

⁴ EDR is an integrated endpoint security solution that detects and investigates suspicious activities on hosts and endpoints, employing a high degree of automation to enable security teams to quickly identify and respond to threats.

⁵ NDR is a solution which helps organisations recognise unusual traffic that indicates command and control, lateral movement, exfiltration, and malware activity.

⁶ SIEM is a security solution that helps organisations recognise and address potential security threats and vulnerabilities before they have a chance to disrupt business operations.

with the commissioning of the new DCB by the end of 2027, the Judiciary considers it most prudent and cost-effective to set up a new primary data centre in the new DCB and upgrade the existing data centre as the secondary one at the WKLCB. The major considerations are as follows –

- (a) It is important to continue with the existing practice of accommodating both the primary data centre and the secondary data centre within court premises directly managed by the Judiciary which are equipped with the most modern, robust and professional security control on public access and people flow. Within the timeframe for commissioning of the new DCB, we consider it most prudent to reserve an optimum floor space of about 150 m² and power supply allocation of around 390 kVA for a new primary data centre in the new DCB. Given that the enhanced physical security measures on access control and people flow management in the new DCB will cover the data centre within the premises, this would achieve synergy and economise on operating costs such as manpower resources on security guards and IT support services;
- (b) It is necessary to continue with the existing practice of locating the two data centres within Judiciary premises but at two separate locations such that an offsite high-end data backup system can be provided for each other to ensure enhanced data availability support, zero data loss in the event of unexpected outage or malware attack, as well as strengthened resilience support for the delivery of IT services of the entire Judiciary. Moreover, having two data centres at separate locations will ensure resilience for mitigating common risks to any physical buildings such as fire, flooding of IT equipment, any other natural disasters or unexpected incidents. The fact that the electricity supply for the two data centres coming from two power companies will add further resilience with respect to stability and reliability of electricity supply; and
- (c) Taking into account (a) and (b) above as well as the site-specific and IT security requirements, it is considered most cost-effective to upgrade the existing data centre at the WKLCB to be the secondary data centre. We have also explored but considered not viable to establish a new secondary data centre in any other court buildings of the Judiciary, such as the Fanling Law Courts Building, Tuen Mun Law Courts Building etc. in the New Territories. The main reason is that the security control system for access and crowd management in these buildings clearly falls short of the strong and robust security requirements for data protection of a modern data centre for the entire Judiciary. Substantial renovation works and additional costs will be required at these court buildings to provide the necessary floor

/space/loading

space/loading and power supply facilities to support a new data centre. It is practically impossible for such works to be completed in time for the commissioning of the new DCB.

16. The above design and planning of two data centres is generally in line with the common practice of other government departments which are providing critical e-services requiring similarly high standards of data and site security requirements. Specifically, these government departments have set up two or more data centres at separate locations, either at their own self-managed premises or at other government-owned premises at separate locations. We note that this is also generally in line with the practice of data centres of the Guangdong courts, which we have recently visited.

Requirements of the new primary data centre in the new DCB

17. As set out in paragraph 15 above, we propose to build a new primary data centre in the new DCB, which will meet both the local IT and AV requirements of the new DCB as well as cater for the anticipated needs of the Judiciary in the next two decades for hosting more servers, network equipment and other shared IT services in all court premises of the Judiciary. This will replace the existing aged data centre at the HCB and become the primary data centre which is the central network hub and internet access point for the entire Judiciary network. This will strengthen the IT support for all court premises, as well as the mutual resilient and disaster recovery site of the existing data centre at the WKLCB.

18. The new primary data centre in the new DCB will be equipped with IT servers and data storage, IT networking equipment and IT security equipment to cope with a higher level of information processing efficiency including more servers with higher speed, as well as larger and faster data storage capacity requirements to support the Judiciary's projected growth in the five years starting from 2027. The infrastructure will also be scalable to support capacity upgrades for ten further years. A new cloud storage infrastructure will be implemented to support new electronic services for court users such as e-filing of voluminous court documents in a bulk scale. Green measures will be adopted in the design and implementation of the new server site with a view to making it more environmentally friendly.

19. Upon the commissioning of the new data centre in the new DCB, the existing HCB server room will be converted to serve as a local server room housing computer equipment to support user access to IT services in the HCB for achieving better performance as well as meeting ad hoc, specific operational needs.

/Requirements

Requirements for upgrading the existing data centre at the WKLCB to be the secondary data centre

20. As mentioned in paragraph 14 above, the existing production servers, storage and other infrastructure systems in the WKLCB data centre (currently the primary data centre for all premises in the Judiciary) will be reaching their ninth year of operation by 2027. We consider it timely and essential to upgrade the infrastructure systems of the WKLCB data centre such that it will become an effective secondary data centre to back up the new primary data centre in the new DCB. The scope of the upgrade will need to match with that of the proposed new DCB data centre in order to pair up the two data centres for providing a highly reliable active-active production environment for the delivery of IT services to the Judiciary as a whole. Otherwise, the reliability of the IT infrastructure of the entire Judiciary will be jeopardised, thereby adversely affecting the internal and public services of the Judiciary.

21. In light of the development and increasing use of electronic modes in processing court data, we propose to upgrade the server, storage and other infrastructure systems with a view to putting in place a more scalable and faster high-capacity storage with more and faster servers and a cloud infrastructure for holding the electronic court information including documents, evidences and exhibits. This is necessary for maintaining the required information security while enabling flexibility of access to data storage.

Tendering approach as one single project

22. As the three inter-related proposals in paragraph 2 above are part and parcel of the IT infrastructure of the Judiciary as a whole, they need to be implemented concurrently and the resources required have to be flexibly deployed within the limit of one single non-recurrent funding commitment. The tendering approach will be in line with the established tendering approach for all other similar IT infrastructure proposals in other government bureaux and departments. Specifically, subject to the funding approval of the Finance Committee, the tendering of the three proposals in paragraph 2 above would be carried out as one single project, given that the various functional components, including hardware, software and implementation services, are meant to cater for the implementation of all three proposals across the board (see paragraph 26 below).

23. A graphical presentation of the three inter-related proposals with key technical details are at Enclosure 1.

Encl. 1

/Expected

Expected benefits

24. It is anticipated that implementation of the three inter-related proposals above will bring about the following benefits –

(a) **Enhanced efficiency of court operations**

All the new and additional courtrooms in the new DCB will be provided with modern IT/AV infrastructure and systems which will facilitate the courts in making wider use of evolving technology in all aspects of court operations, particularly e-filing, electronic bundles, digital evidence exhibits, remote hearings, and e-appointments in suitable and applicable proceedings. The implementation of these technology-related initiatives will help streamline the processing of court documents and the hearing process, thus enhancing the efficiency and effectiveness of court operations before, during and after hearings. The capacity to handle the increasingly complex cases involving growing volumes of documents and data, textual or multimedia based, will be enhanced;

(b) **Enhanced services to court users**

The new infrastructure will enable court user-centric digital signage, public information dissemination system as well as facilities for live broadcasting of court proceedings to be set up in the new courtrooms, so as to provide up-to-date information to court users. Also, appropriate IT facilities, e.g. self-help centre, payment kiosks, etc., will be installed in the new DCB to provide more effective and efficient services to the court users; and

(c) **Maximum utilisation of computing resources**

The new infrastructure will adopt a building block approach with scalable design to allow system components to be added in a modular way and to enable flexible allocation of computing resources, thereby facilitating maximum utilisation of computing resources.

FINANCIAL IMPLICATIONS**Non-recurrent expenditure**

25. We estimate that the total non-recurrent expenditure for the implementation of the three proposals above is \$780,832,000, comprising –

- (a) providing the IT infrastructure and enabling the use of technologies in the new DCB at \$321,362,000;
- (b) setting up a new data centre in the new DCB at \$235,235,000; and
- (c) upgrading the WKLCB data centre at \$224,235,000.

26. Breakdown of the estimated non-recurrent expenditure over the four-year period from 2024-25 to 2027-28 is set out as follows –

	<u>2024-25</u> <u>(\$,000)</u>	<u>2025-26</u> <u>(\$,000)</u>	<u>2026-27</u> <u>(\$,000)</u>	<u>2027-28</u> <u>(\$,000)</u>	<u>Total</u> <u>(\$,000)</u>
(a) Hardware and Software	-	37,585	187,915	150,325	375,825
(b) Implementation Services	6,555	27,030	66,940	53,665	154,190
(c) Site Preparation	-	-	12,543	-	12,543
(d) Communication Network	-	16,725	83,640	66,925	167,290
(e) Contingency					70,984
Total :	6,555	81,340	351,038	270,915	780,832

Encl. 2 Detailed breakdown of the individual proposals is at Enclosure 2 and the estimated expenditure of the individual proposals over a four-year period from 2024-25 to 2027-28 is at Enclosure 3.

Encl. 3

27. On paragraph 26(a) above, the estimated expenditure of \$375,825,000 is for acquisition of computer hardware, including servers, storage devices, system backup equipment, staff equipment, etc., as well as acquisition of computer software, including operating systems, database management systems, data centre management systems, etc.

28. On paragraph 26(b) above, the estimated expenditure of \$154,190,000 is for engagement of IT professional contract staff services to supplement the in-house project management team so as to provide support in project planning and management, system integration and system tests, etc.

29. On paragraph 26(c) above, the estimated expenditure of \$12,543,000 is for site preparation works at the Judiciary data centres, server rooms and offices, including installation of network nodes as well as the associated trunking and cabling works for the last mile connection to the network backbone systems, etc.

30. On paragraph 26(d) above, the estimated expenditure of \$167,290,000 is for acquisition of communication network hardware and software, including routers, switches, management servers, access control systems, etc.

31. On paragraph 26(e) above, the estimated expenditure of \$70,984,000 represents a 10% contingency on items set out in paragraph 26(a) to (d) above.

Other non-recurrent expenditure

32. The implementation of the three proposals above will require the setting up of a project team, consisting of staff from the general, IT professional and other grades in the Judiciary, for handling the multifarious responsibilities involved in tendering, project management, support for architectural design of the infrastructure components, including the network infrastructure, the cloud storage infrastructure, etc., and conducting acceptance testing. This will entail a total non-recurrent staff cost of \$36,839,000 from 2024-25 to 2027-28 as follows –

	<u>2024-25</u>	<u>2025-26</u>	<u>2026-27</u>	<u>2027-28</u>	<u>Total</u>
	<u>(\$,000)</u>	<u>(\$,000)</u>	<u>(\$,000)</u>	<u>(\$,000)</u>	<u>(\$,000)</u>
Staff Cost	4,127	10,904	12,267	9,541	36,839

33. The non-recurrent requirements above will be included in the estimates of the Judiciary for the relevant financial years.

Recurrent expenditure

34. It is estimated that, upon completion of the three inter-related proposals above, the annual recurrent expenditure will be \$99,722,000, including hardware and software maintenance plus other consumables arising from the provision of the IT infrastructure, IT, AV and DARTS systems. The breakdown by expenditure items is set out as follows –

	<u>2028-29 and onwards</u>
	<u>(\$'000)</u>
(a) Hardware	22,613
(b) Software	57,157
(c) System Maintenance	5,670
(d) Communication Network	13,695
(e) Consumables	587
Total :	99,722

/35.

35. On paragraph 34(a) above, the estimated annual recurrent expenditure of \$22,613,000 is for the provision of hardware maintenance to support the new infrastructure and technology related systems.

36. On paragraph 34(b) above, the estimated annual recurrent expenditure of \$57,157,000 is for the provision of software maintenance, and for licence/subscription fees of software to support the new infrastructure and technology related systems.

37. On paragraph 34(c) above, the estimated annual recurrent expenditure of \$5,670,000 is for on-going system support and maintenance services for the new infrastructure and technology related systems, including the funding required by the OGCIIO for the protection of the Judiciary's cloud storage systems.

38. On paragraph 34(d) above, the estimated annual recurrent expenditure of \$13,695,000 is for rental of the upgraded communication services in data centres and the new DCB, including the operating cost of the enterprise grade 5G services in the new DCB.

39. On paragraph 34(e) above, the estimated annual recurrent expenditure of \$587,000 is for provision of consumables, such as tag labels, printer toners, etc.

40. While the implementation of the three proposals will entail an annual recurrent expenditure of \$99,722,000 starting from 2028-29 as mentioned in paragraphs 34 to 39 above, after deducting the annual realisable savings of \$17,470,000 as mentioned in paragraph 41 below, the net additional recurrent expenditure from 2028-29 onwards is about \$82,252,000 per year.

Cost savings and avoidance

41. This funding proposal arises from the relocation and expansion of court facilities and support offices, data centre services re-provisioning, capacity upgrade and IT infrastructure service enhancements involving new and additional courtrooms, data centres and staff relocation, upgrade of data centre capacity and provision of new cloud storage services to users. Other than the benefits described in paragraph 24 above, realisable cost savings on operation are not anticipated except the annual savings of \$17,470,000 from 2028-29 onwards due to cessation of payment of maintenance expenditure for equipment planned to be retired during the office relocation and after the data centre capacity upgrade.

Encl. 4 42. A cost and benefit analysis of the proposal is at Enclosure 4.

IMPLEMENTATION PLAN

43. Subject to the funding approval of the Finance Committee, we plan to implement the proposed IT infrastructure and IT/AV/DARTS systems in the new DCB and to upgrade the infrastructure facilities of the WKLCB according to the following schedule –

Activity	Target Implementation Schedule
(a) Technical study and tender preparation	Q2 2024 to Q3 2024
(b) Tendering for IT network infrastructure system ⁷	Q3 2024 to Q2 2025
(c) Site preparation and network cabling	Q2 2025 to Q1 2026
(d) Tendering for other IT infrastructure, IT, AV and DARTS systems ⁷	Q2 2025 to Q3 2026
(e) Installation and acceptance testing for the WKLCB data centre upgrade	Q4 2025 to Q3 2026
(f) Installation and acceptance testing for the new DCB IT infrastructure and new DCB data centre	Q4 2026 to Q3 2027

PUBLIC CONSULTATION

Panel on Administration of Justice and Legal Services

44. On 26 February 2024, the Judiciary consulted the Panel on Administration of Justice and Legal Services. Members supported the proposal and its submission to the Finance Committee for funding approval.

/Consultation

⁷ Given the lead time for delivery of hardware and software items for the different infrastructure components/systems varies, multiple open tendering exercises will be arranged as appropriate.

Consultation with stakeholders

45. The Judiciary has briefed the stakeholders including the Hong Kong Bar Association and the Law Society of Hong Kong on the three inter-related proposals. On 23 February 2024, upon invitation of the Judiciary, representatives of the two legal professional bodies visited the new Mega Courtroom at the Wanchai Law Courts Building for a demonstration of how courtroom technology solutions could be used to enhance the efficiency of conducting court hearings. Both legal professional bodies expressed support for the proposals.

Judiciary Administration
May 2024

Information Technology Infrastructure in the New District Court Building and Upgrading of Information Technology Infrastructure of the Judiciary

Hong Kong Judiciary

Enclosure 1 to FCR(2024-25)11



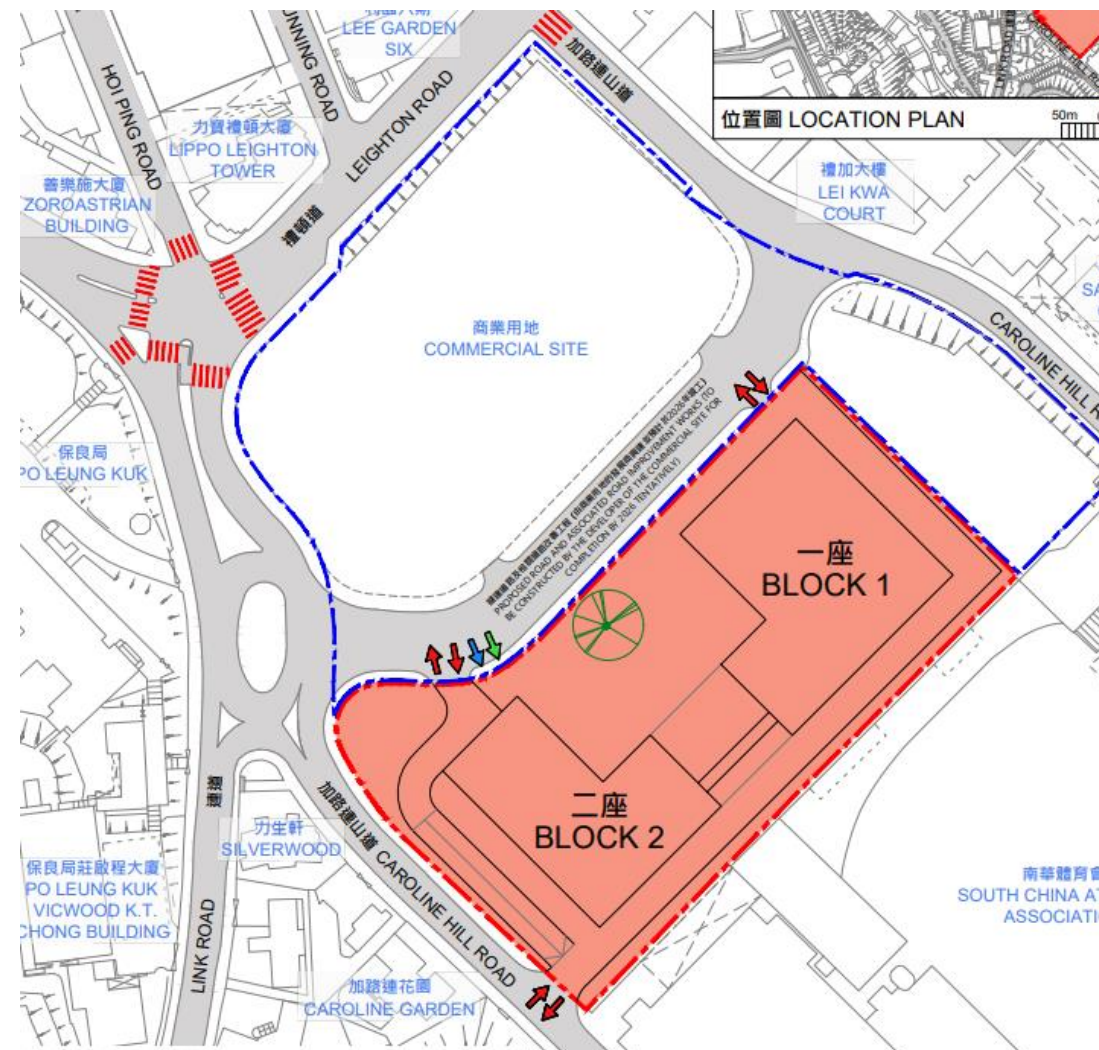


Highlights of the new District Court Building ("DCB") project

Hong Kong Judiciary

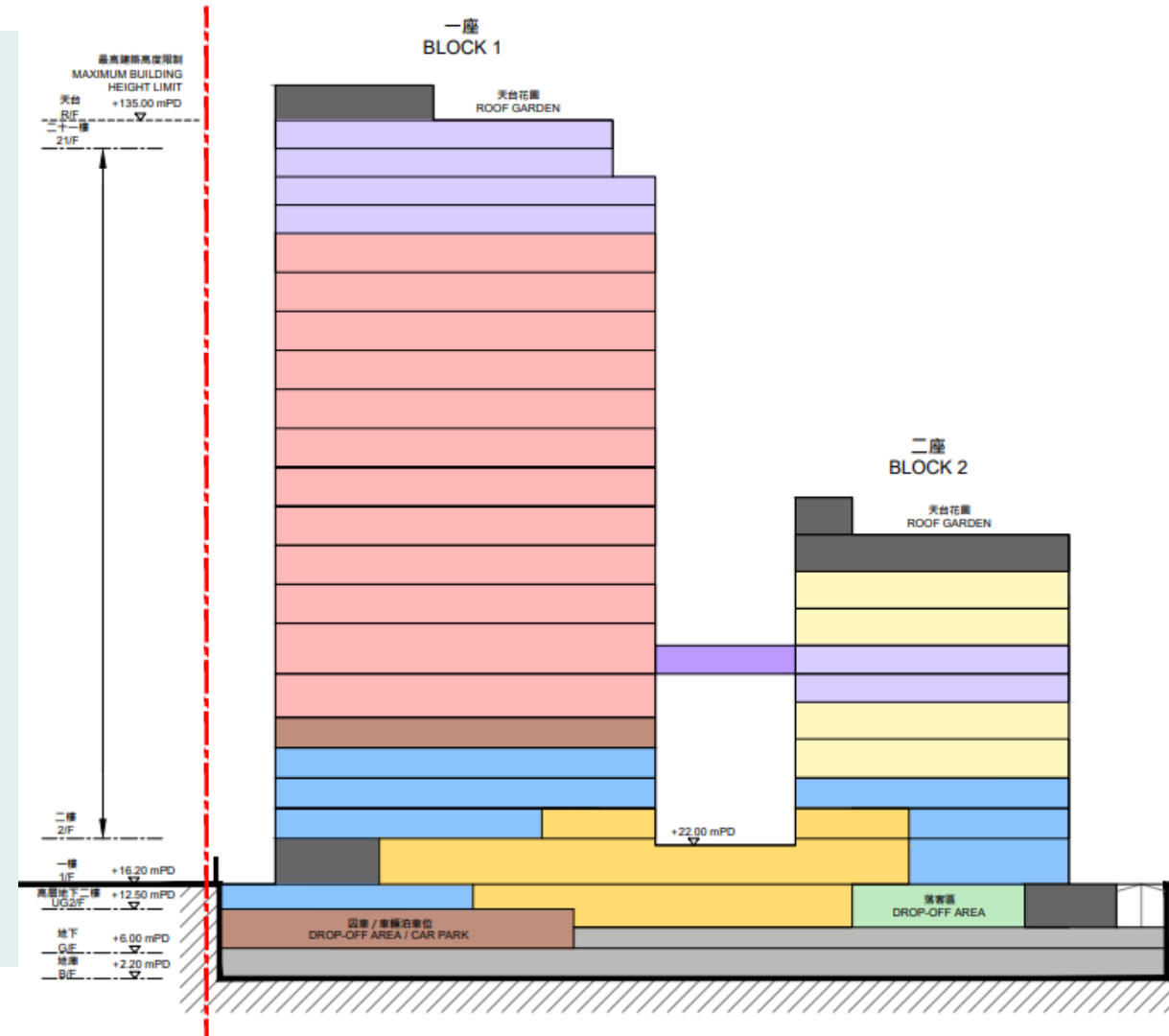
The new DCB – location

- *At Caroline Hill Road in Causeway Bay*
- *Area: Around 10 740 m²*
- *Adjoining a commercial site*



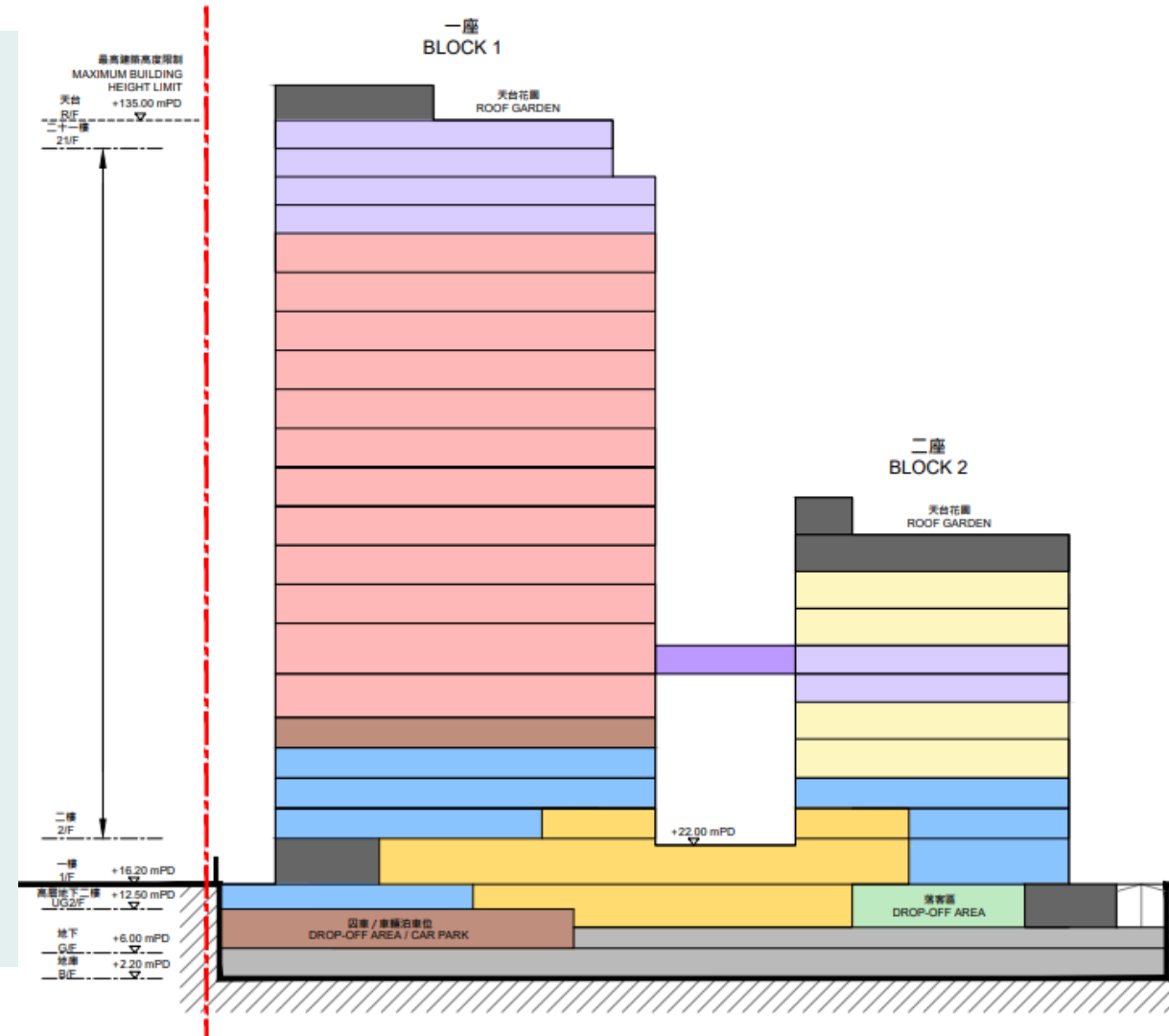
The new DCB – design

- *A twin-tower design*
- *Comprises*
 - a 24-storey block for the District Court (“DC”) and the Lands Tribunal (“LT”); and
 - a 12-storey block for the Family Court (“FC”)



The new DCB – design

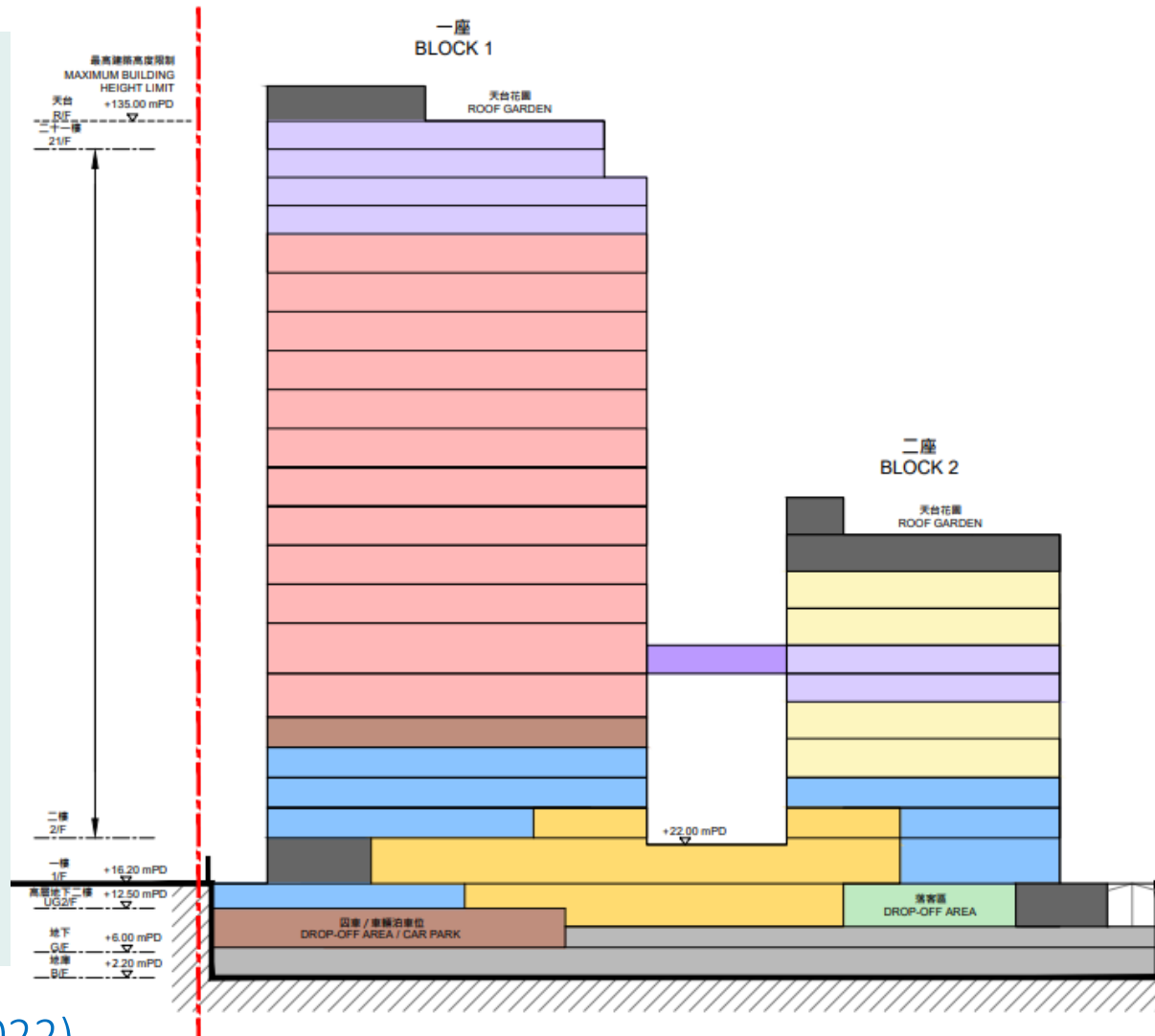
- *6 additional courtrooms (as compared with 2024*)*
- *Comprises*
 - DC / LT:
49 → 52 (+6%)
 - FC:
15 → 18 (+20%)



* 17 additional courtrooms (as compared with 2022)

The new DCB – design

- *9 additional chambers for Judges and Judicial Officers (“JJOs”) (as compared with 2024*)*
- *Comprises*
 - *DC / LT:*
54 → 62 (+15%)
 - *FC:*
19 → 20 (+5%)
- *To be commissioned in 2027*



* 26 additional chambers for JJOs (as compared with 2022)

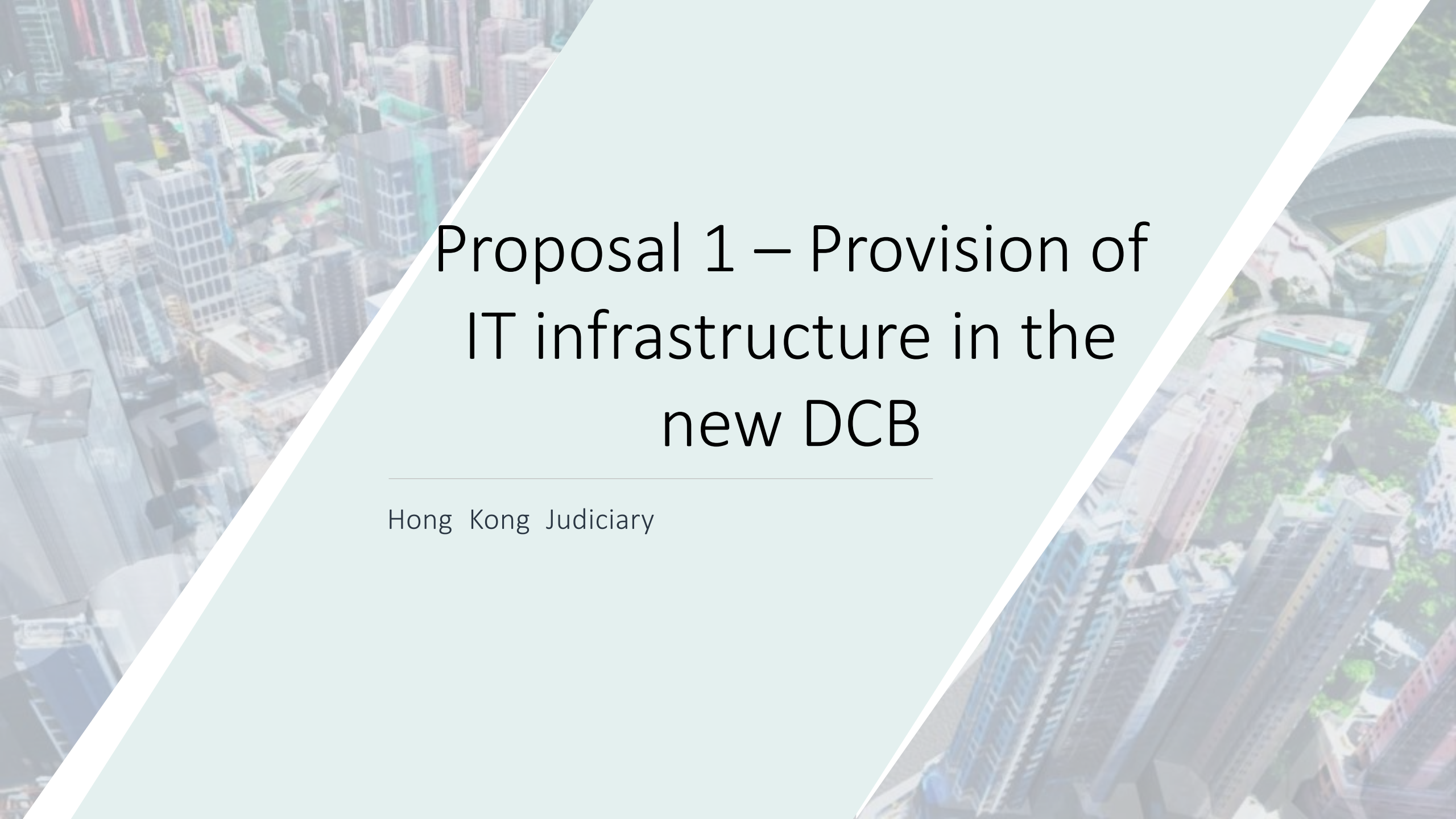


Proposals of information technology (“IT”) infrastructure

Hong Kong Judiciary

Proposals

1. Provide the necessary IT infrastructure to support the use of technology and implementation of technology-related initiatives in all aspects of court operations in the new DCB 
2. Set up a new data centre in the new DCB to replace the aged data centre at the High Court Building (“HCB”)
3. Upgrade the Judiciary’s IT infrastructure in the data centre of the West Kowloon Law Courts Building (“WKL CB”) 



Proposal 1 – Provision of IT infrastructure in the new DCB

Hong Kong Judiciary

Proposal 1

	(HK\$'M)
Provision of IT infrastructure in the new DCB	321.4

- When preparing the cost estimates, references have been made to
- the WKLCB commissioned in 2016
 - the setting up of Judiciary's IT Infrastructure at the WKLCB
 - new courtrooms commissioned in 2023

Building level IT infrastructure

- *Server and network*



General IT services

Building network backbone



IT/Audio-Visual (“AV”) provisions in DC courtrooms

- *Transition over the years*



- Courtrooms with limited IT/AV support



- Portable IT/AV facility cart deployed to courtrooms



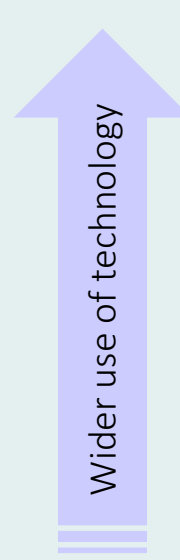
- Courtrooms equipped with basic IT/AV facilities





- New mega court today, fully equipped with IT/AV systems to support the use of technology, e.g. e-bundle hearings, remote hearings, use of electronic documents and digital evidence, integrated Court Case Management System (“iCMS”), etc.

Enhancement of courtroom services and facilities

- To equip all 70 courtrooms (currently 64) in the new DCB with modernised IT/AV facilities (e.g. 8 (vs 4 now) audio channels for Digital Audio Recording and Transcription Services (“DARTS”) and voice-to-text support, multiple AV input/output)



	DC (Master)	DC (Civil)	DC (Criminal)	FC	LT	New DCB
Modernised IT/AV			1*			70
Integrated IT/AV		4*	7	5*	1*	
Basic IT/AV	9	14	8			
DARTS Only				10	5	



- To enable wired and wireless data access for all court users

* new courtrooms commissioned between 2022 and 2024

Full spectrum of facilities and services in all courtrooms

AV facilities

- Presentation
- Video conferencing
- Court extension broadcasting
- Public address announcement



DARTS system

- Digital Audio Recording and Transcription Services
(with 8 instead of 4 digital audio channels)



Technology- related facilities

- Interaction with protected and vulnerable witnesses
- Electronic document and digital evidence handling
- Interpreter support function
- iCMS support



Improved facilities in all JJOs' chambers, registries, consultation rooms and other service areas



- ✓ Wired and wireless data access
- ✓ iCMS support
- ✓ Video conferencing facilities
- ✓ Voice recording



- ✓ Wired and wireless data access
- ✓ iCMS support
- ✓ Digital signage
- ✓ Queuing system
- ✓ Voice recording
- ✓ Inter communication



- ✓ Wireless data access
- ✓ Video conferencing facilities
- ✓ Digital whiteboard

More self-help facilities and services

Registry areas

- e-appointment
- e-payment
- self-help counters for
 - ✓ e-filing
 - ✓ e-document inspection
 - ✓ document scanning



Making IT infrastructure ready for new initiatives / services under planning

Voice-to-text
("VTT")



Interactivity in
remote hearings
(e.g. bail form)



Live broadcasting
of proceedings
(e.g. web casting)

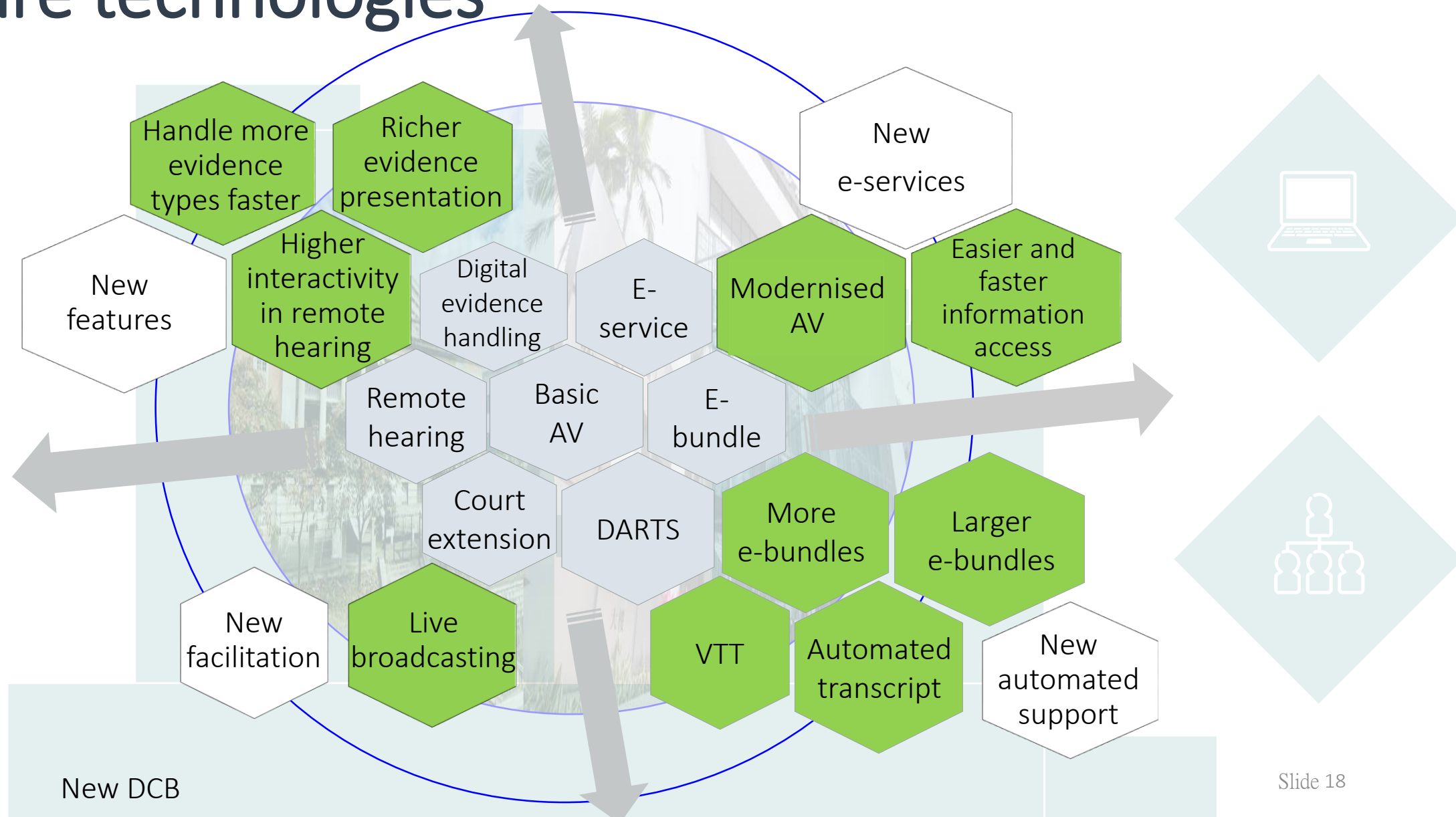


Call bell for
flexible courts



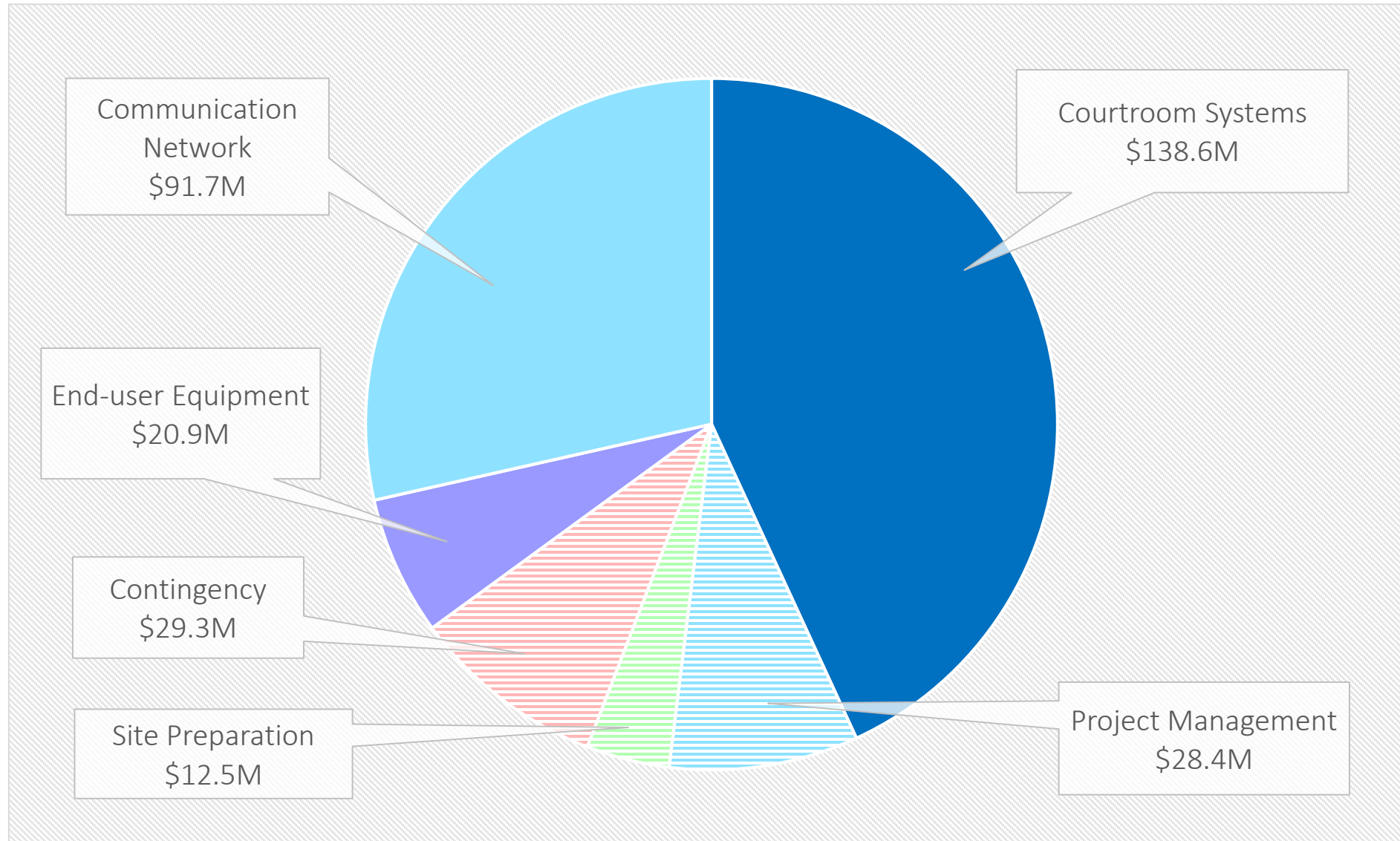
Design with
scalability and
flexibility to
adopt future
technologies

Design with scalability and flexibility to adopt future technologies



Proposal 1 – funding provision

Provision of IT infrastructure in the new DCB



Proposal 1 – costing factors

Provision of IT infrastructure in the new DCB

- The new DCB is the most modern law courts building, and there are more courtrooms, JJOs' chambers, registries, consultation rooms and other service areas than in existing DC, thus requiring more and wider coverage of modernised IT/AV facilities
- The new DCB has larger floor areas and more widely distributed service points, thus requiring more connection hubs to ensure efficient data transmission
- The new DCB is designed with stronger IT security features of higher standards (e.g. physically separated networks for internal and external users, enterprise 5G network, etc.)
- Unit price of network equipment has increased by 2.5 times on average since 2016





Proposal 2 – New data centre in the new DCB

Hong Kong Judiciary

Proposal 2

	(HK\$'M)
New data centre in the new DCB	235.2



- When preparing the cost estimates, references have been made to
- the upgrade of Judiciary's IT infrastructure at the HCB (2016)
 - the setting up of Judiciary's IT infrastructure at the WKLCB (2017)

Existing data centre at HCB not sustainable

- *Has been in operation since 1985*
- *Last technology upgrade in 2016, serving as the secondary data centre since then*
- *Many supporting facilities are aged or damaged, e.g. damaged raised floor, insufficient floor loading support and power supply*
- *Not sustainable for continual IT support to the Judiciary as a whole*



Proposal 2

- *To **replace the aged data centre at the HCB** by a new one in the new DCB, equipped with modernised server and network infrastructure*
- *To support technology related services in the new DCB and other court premises of the Judiciary*
- *To become the **primary data centre** of the Judiciary as a whole*



Enhanced IT network infrastructure

Improved Security (Multi-Layer Defense)



Faster Data Transfer (400Gbps Technology)



- 40+ times faster !
- expandable for extra 300% workload !

New Features

Faster Connection

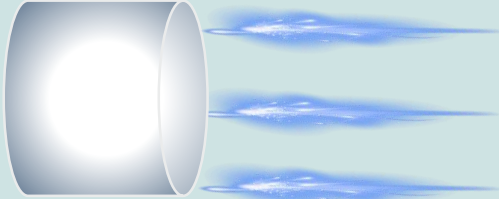
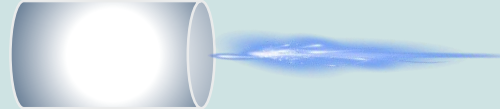


- ✓ Wired: 1Gbps → 2.5Gbps
- ✓ Wireless: WiFi 6 or above
- ✓ Server: 10Gbps → 100Gbps

Safer Wireless Network (5G Enterprise Network)




- High speed
- Low latency
- Less power
- More users
- Internet of Things

More powerful data centre facilities

Capacity	Upgraded data centres (WKLCB and new DCB)	Existing data centres (WKLCB and HCB)
More and Faster Storage	4 + 4 petabytes 	1.5 + 1.5 petabytes 
More and Faster Servers	75 + 75 servers 	29 + 29 servers  <p>Support more e-services! more case documents!</p>

* Each new server provides +300% processing power compared to existing ones

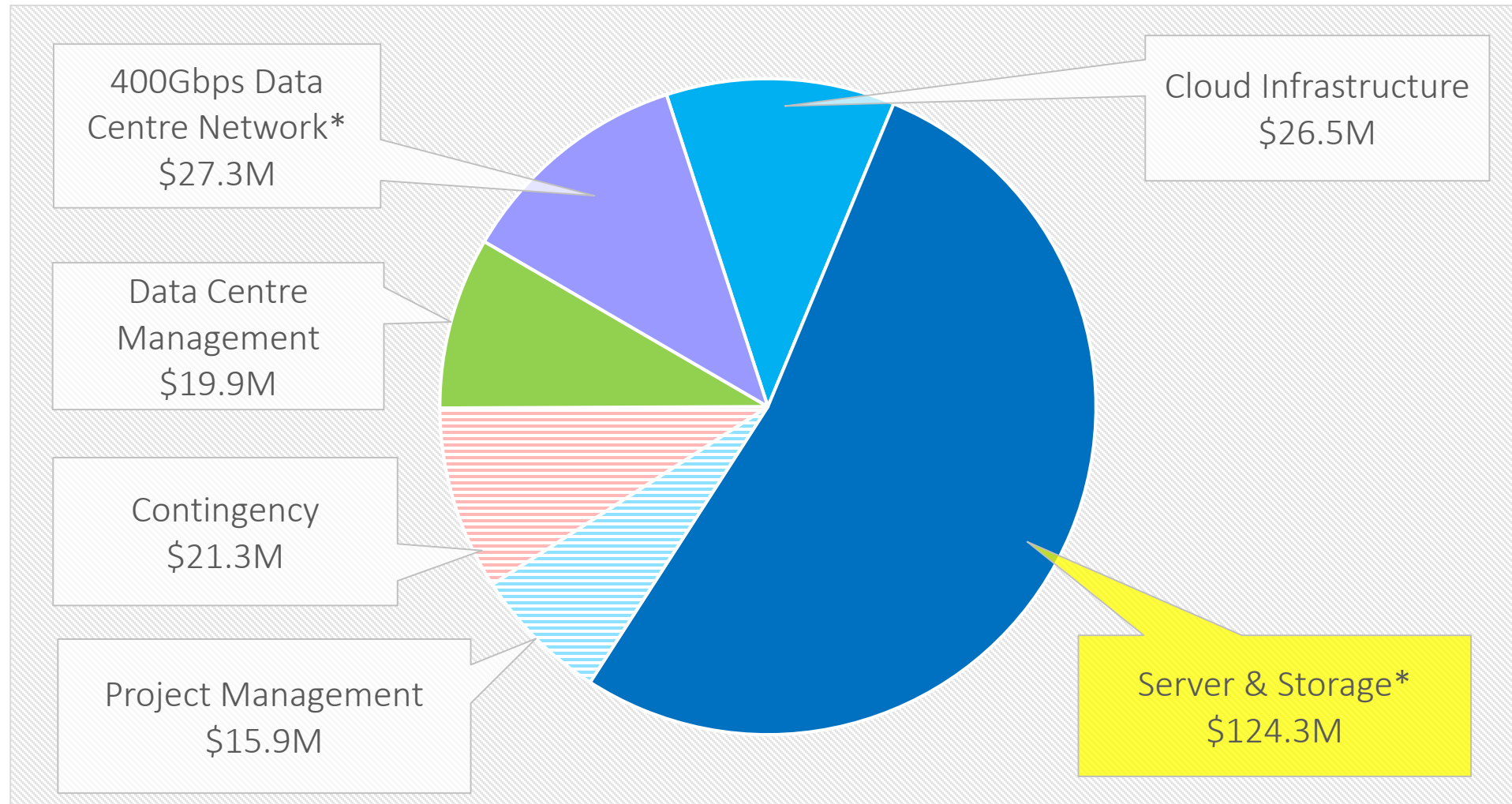
Stronger support for new IT initiatives

New IT facility	Target service	Estimated initial usage
Private cloud	Cloud storage facilitating court business for court users 	<p>~100GB per external user (~80 000 pages * per user)</p> <p>~500GB per internal user (~400 000 pages * per user)</p> <p>Support more e-services ! expediting court business !</p>

* Text-based A4 pages in black and white and 300dpi

Proposal 2 – funding provision

New data centre in the new DCB




* For further protection of vital data, modernised measures will be introduced in the new DCB for the private cloud systems and other IT applications/systems of the Judiciary

Proposal 2 – costing factors

New data centre in the new DCB

- More servers with higher speed as well as larger and faster data storage capacity will be implemented in the new data centre to support the Judiciary's anticipated needs in the next five years (from 2027)
- The new IT infrastructure will be scalable to support capacity upgrades for ten further years
- New cloud storage infrastructure will be implemented to support new e-services
- Real-time system monitoring and alert systems, including endpoint detection and response ("EDR") system, network detection and response ("NDR") system, and security information and event management ("SIEM") tools will be implemented for strengthened information security management and protection





Proposal 3 – Upgrading the WKLCB data centre

Hong Kong Judiciary

Proposal 3

	(HK\$'M)
Upgrading the WKLCB data centre	224.2



- When preparing the cost estimates, references have been made to
- the setting up of Judiciary's IT infrastructure at the WKLCB (2017)
 - the upgrade of Judiciary's IT infrastructure at the HCB (2016)

Existing data centre of WKLCB requires upgrading

- *Has been in operation since 2017, serving as primary data centre of the Judiciary*
- *Most of the infrastructure systems and IT facilities will be **reaching their 9th year of operation in 2027***
- ***Requires technology upgrade** for sustainable support to court operations*



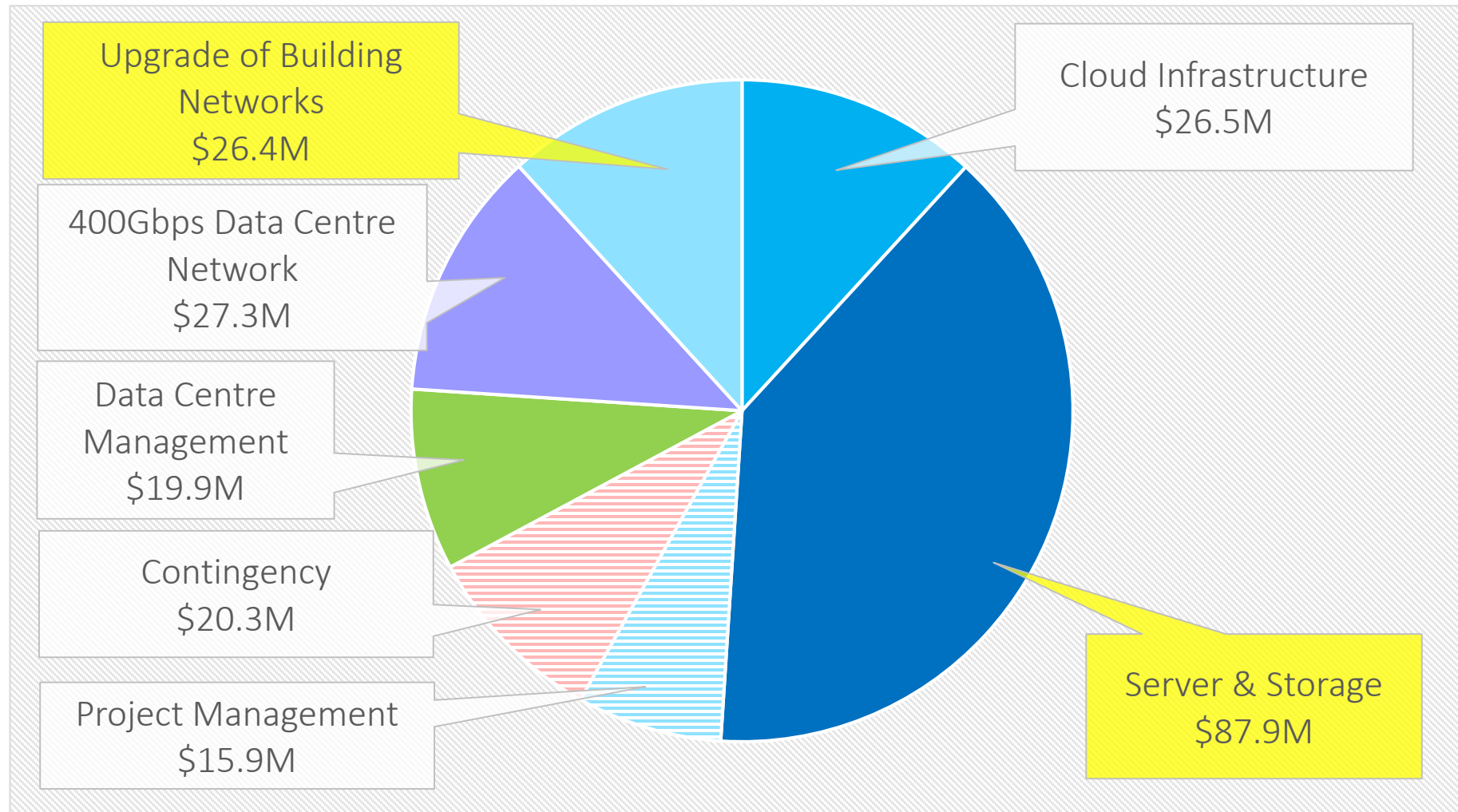
Proposal 3

- *To upgrade the data centre facilities at the WKLCB*
- *To pair up with the new data centre in the new DCB for supporting the delivery of IT services in the Judiciary*
- *To serve as the **secondary data centre**, providing active-active data centre support for all IT services of the Judiciary*





Proposal 3 – funding provision

Upgrading the WKLCB data centre



Proposal 3 – costing factors

Upgrading the WKLCB data centre

- The upgrade will provide for more servers with higher speed, larger and faster data storage capacity to support the Judiciary's anticipated needs in the next five years (from 2027), and will also be scalable to support capacity upgrades for ten further years, cloud storage infrastructure, real-time monitoring and alert systems (e.g. EDR system, NDR system, SIEM tools), for strengthened information security management and protection 
- The upgrade will also include upgrading of the building backbone network infrastructure of the WKLCB to support more efficient data transmission such that the upgraded data centre can be paired up with the new data centre in the new DCB for providing highly reliable IT services to the Judiciary as a whole 

Overall funding provision

Proposals	(HK\$'M)	Percentage
Provision of IT infrastructure in the new DCB	321.4	41%
New data centre in the new DCB	235.2	30%
Upgrading the WKLCB data centre	224.2	29%
Total (HK\$'M)	780.8	100%

Tendering arrangement

- The above three proposals are **inter-related** and need to be implemented in one-go; the required hardware, software and implementation services have to be acquired via open tender as one single project for each category
- Relevant items for the same functional category (e.g. network infrastructure system, server farm, centralised database system, IT security protection system, IT/AV facilities, etc.) will be acquired through the **same tendering exercise** to ensure the items can be paired up and integrate with each other (for mutual backup and disaster recovery) to support the efficient and reliable operations of all technology-related systems of the Judiciary
- It is a **common tendering arrangement** adopted by government bureaux / departments for implementing similar IT infrastructure



Stakeholders' views

- The Panel on Administration of Justice and Legal Services of the Legislative Council (“AJLS Panel”), the Hong Kong Bar Association, and the Law Society of Hong Kong generally support the above proposals
- AJLS Panel members expressed concerns on the following two aspects:
 - (1) Protection of case data
 - (2) Design and planning on the two data centres



Concerns of AJLS Panel members (1)

(1) Protection of case data

- The Judiciary attaches great importance to IT security, particularly on storage, management and protection of case data involved in judicial proceedings at all levels of court, and has taken into account the professional advice from the Office of the Government Chief Information Officer (“OGCIO”)
- The two proposed data centres are designed on the basis of the highest level of IT security, conforming with the highest government standards, covering three aspects of information/data security protection, namely confidentiality, integrity and availability
- The proposed IT infrastructure will adopt physical network separation, multi-layered firewalls, network access control, intrusion detection, and automated intelligent security management (e.g. EDR system, NDR system, SIEM tools, etc.) to ensure timely detection and follow-up actions on abnormal situations



Concerns of AJLS Panel members (2)

(2) Design and planning on two data centres

- Setting up a new primary data centre in the new DCB and upgrading the existing data centre at the WKLCB to effectively serve as the secondary data centre is the most cost-effective arrangement, major considerations are as follows:
 - (a) it is essential to comply with the highest IT security standards required for the storage and protection of case data at all levels of court
 - (b) it is necessary to tie in with the commissioning of the new DCB by the end of 2027
 - (c) setting up two data centres at two separate Judiciary premises directly managed by the Judiciary, and equipped with the most modern, robust and professional security control on public access and people flow:
 - ✓ enables the provision of an offsite high-end data backup system for each other to ensure enhanced data availability support



Concerns of AJLS Panel members (3)

- ✓ ensures zero data loss in the event of unexpected outage or malware attack, as well as strengthened resilience support for the delivery of IT services of the entire Judiciary
- ✓ ensures resilience for mitigating common risks to any physical buildings such as fire, flooding of IT equipment, any other natural disasters or unexpected incidents



(d) an optimum floor space of about 150 m² and power supply allocation of around 390 kVA at the new DCB reserved for a new primary data centre

(e) it is not viable to establish a new secondary data centre in any other court buildings of the Judiciary, mainly because the security control system for access and crowd management in these buildings (compared with the WKLCB) falls short of the strong and robust security requirements for data protection and IT security without substantial renovation works at these buildings, which cannot be done in time for the commissioning of the new DCB



Concerns of AJLS Panel members (4)

- The Judiciary's design and planning on the two data centres is generally in line with the common practice of government departments which are providing critical e-services that require similarly high standards of data and site security

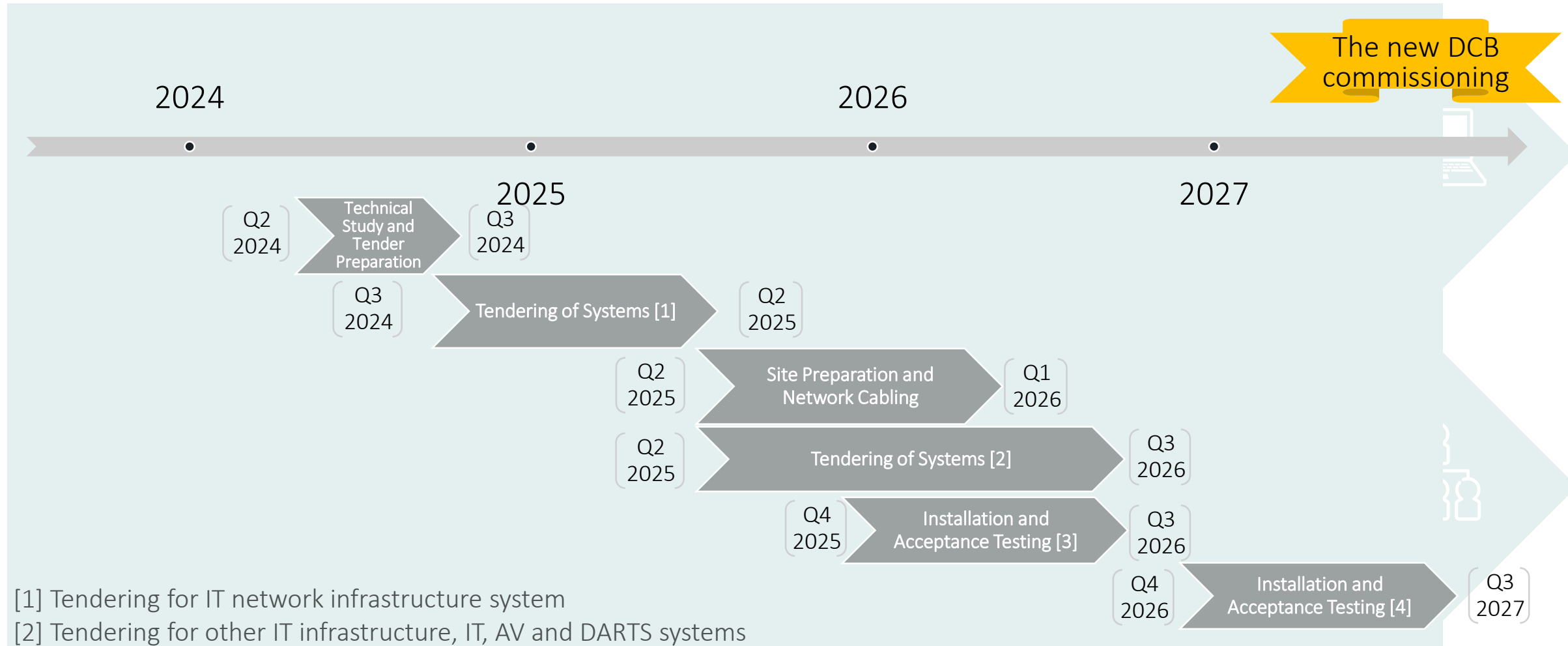


Examples include OGCIO, Hong Kong Police Force, Immigration Department and Inland Revenue Department. Each department has set up two or more data centres at separate locations, either at its own self-managed premises or at other government-owned premises at separate locations

During a recent visit to the High People's Court of Guangdong Province, we learnt that data centres supporting court business are located in court buildings and/or venues managed directly by the court



Implementation plan



Provision of Information Technology (IT) Infrastructure in the New District Court Building (DCB) at Caroline Hill Road and Upgrading of IT Infrastructure of the Judiciary

Detailed Breakdown of the Individual Proposals

A. Proposal 1 – Provision of IT Infrastructure in the New DCB

		<u>Non-recurrent Expenditure (\$'000)</u>					
		<u>Courtroom Systems</u>	<u>End-user Equipment</u>	<u>Project Management</u>	<u>Site Preparation</u>	<u>Communication Network</u>	<u>Total</u>
A.1	Hardware and Software	100,596	17,999				118,595
A.2	Implementation Services	19,368	2,949	28,359		13,754	64,430
A.3	Site Preparation				12,543		12,543
A.4	Communication Network	18,620				77,960	96,580
Sub-total :		138,584	20,948	28,359	12,543	91,714	292,148
Contingency :							29,214
Sub-total with Contingency :							321,362
							/B.

B. Proposal 2 – New Data Centre in the New DCB

		<u>Non-recurrent Expenditure (\$'000)</u>					<u>Total</u>
		<u>Cloud Infrastructure</u>	<u>Server and Storage</u>	<u>Project Management</u>	<u>400Gbps Data Centre Network</u>	<u>Data Centre Management</u>	
B.1	Hardware and Software	22,496	103,725			16,929	143,150
B.2	Implementation Services	3,970	18,669	15,948	4,094	2,949	45,630
B.3	Communication Network		1,865		23,205		25,070
Sub-total :		26,466	124,259	15,948	27,299	19,878	213,850
Contingency :							21,385
Sub-total with Contingency :							235,235

/C.

C. Proposal 3 – Upgrading the West Kowloon Law Courts Building Data Centre

		<u>Non-recurrent Expenditure (\$'000)</u>						<u>Total</u>
		<u>Cloud Infrastructure</u>	<u>Server and Storage</u>	<u>Project Management</u>	<u>400Gbps Data Centre Network</u>	<u>Data Centre Management</u>	<u>Upgrading Building Network</u>	
C.1	Hardware and Software	22,496	74,655			16,929		114,080
C.2	Implementation Services	3,970	13,209	15,948	4,094	2,949	3,960	44,130
C.3	Communication Network				23,205		22,435	45,640
Sub-total :		26,466	87,864	15,948	27,299	19,878	26,395	203,850
Contingency :								20,385
Sub-total with Contingency :								224,235
Total Non-recurrent Expenditure (A+B+C) :								780,832

**Provision of Information Technology (IT) Infrastructure
in the New District Court Building (DCB) at Caroline Hill Road
and Upgrading of IT Infrastructure of the Judiciary**

Projected Non-recurrent Expenditure from 2024-25 to 2027-28

A. Proposal 1 – Provision of IT Infrastructure in the New DCB

		<u>Non-recurrent Expenditure (\$'000)</u>				
		<u>2024-25</u>	<u>2025-26</u>	<u>2026-27</u>	<u>2027-28</u>	<u>Total</u>
A.1	Hardware and Software	-	11,860	59,300	47,435	118,595
A.2	Implementation Services	3,035	11,785	27,230	22,380	64,430
A.3	Site Preparation	-	-	12,543	-	12,543
A.4	Communication Network	-	9,655	48,285	38,640	96,580
Sub-total :		3,035	33,300	147,358	108,455	292,148
Contingency :						29,214
Sub-total with Contingency :						321,362

B. Proposal 2 – New Data Centre in the New DCB

		<u>Non-recurrent Expenditure (\$'000)</u>				
		<u>2024-25</u>	<u>2025-26</u>	<u>2026-27</u>	<u>2027-28</u>	<u>Total</u>
B.1	Hardware and Software	-	14,315	71,575	57,260	143,150
B.2	Implementation Services	1,760	7,700	20,230	15,940	45,630
B.3	Communication Network	-	2,505	12,535	10,030	25,070
Sub-total :		1,760	24,520	104,340	83,230	213,850
Contingency :						21,385
Sub-total with Contingency :						235,235

/C.

C. Proposal 3 – Upgrading the West Kowloon Law Courts Building Data Centre

		<u>Non-recurrent Expenditure (\$'000)</u>				
		<u>2024-25</u>	<u>2025-26</u>	<u>2026-27</u>	<u>2027-28</u>	<u>Total</u>
C.1	Hardware and Software	-	11,410	57,040	45,630	114,080
C.2	Implementation Services	1,760	7,545	19,480	15,345	44,130
C.3	Communication Network	-	4,565	22,820	18,255	45,640
Sub-total :		1,760	23,520	99,340	79,230	203,850
Contingency :						20,385
Sub-total with Contingency :						224,235
Total Non-recurrent Expenditure (A+B+C) :		6,555	81,340	351,038	270,915	780,832

**Cost and Benefit Analysis for the Provision of Information Technology (IT) Infrastructure
in the New District Court Building at Caroline Hill Road
and Upgrading of IT Infrastructure of the Judiciary**

Item	Cash flow (\$'000)					
	2024-25	2025-26	2026-27	2027-28	2028-29	Total
1. Non-recurrent						
Expenditure ^{Note}	6,555	81,340	351,038	341,899	-	780,832
Staff Cost	4,127	10,904	12,267	9,541	-	36,839
Total Non-recurrent Cost	10,682	92,244	363,305	351,440	-	817,671
2. Recurrent						
Expenditure	-	-	-	-	99,722	99,722
Staff Cost	-	-	-	-	-	-
Total Recurrent Cost	-	-	-	-	99,722	99,722
Total Non-recurrent and Recurrent Costs (A)	10,682	92,244	363,305	351,440	99,722	917,393
3. Savings						
Non-recurrent Cost Avoidance	-	-	-	-	-	-
Recurrent Cost Avoidance	-	-	-	-	-	-
Recurrent Realisable Savings	-	-	-	-	17,470	17,470
Recurrent Notional Savings	-	-	-	-	-	-
Total Savings (B)	-	-	-	-	17,470	17,470
Net Savings (C) = (B) – (A)	(10,682)	(92,244)	(363,305)	(351,440)	(82,252)	(899,923)
Net Cumulative Savings	(10,682)	(102,926)	(466,231)	(817,671)	(899,923)	

^{Note} The contingency of \$70,984,000 has been included in the expenditure of 2027-28.