

THE HONG KONG POLYTECHNIC UNIVERSITY: REPAIR AND MAINTENANCE OF UNIVERSITY PREMISES

Executive Summary

1. The Hong Kong Polytechnic University (PolyU)'s predecessor, the Hong Kong Polytechnic, was established in 1972 through the enactment of The Hong Kong Polytechnic Ordinance (Cap. 1075), which was subsequently amended in 1994 (retitled as "The Hong Kong Polytechnic University Ordinance") to provide for the establishment of PolyU. PolyU's main campus is located in Hung Hom on a site of approximately 102,300 square metres. The premises house a range of facilities, such as teaching rooms, library, sports facilities, multi-purpose auditorium and theatre. In 2022-23, PolyU's expenditure on repair and maintenance of university premises was \$146.8 million. The Audit Commission (Audit) has recently conducted a review of PolyU's work relating to the repair and maintenance of university premises.

Planned maintenance

2. *Room for improvement in conducting Facilities Condition Assessments.* Each year, PolyU conducts Facilities Condition Assessments to assess the conditions of the building services installations in the university premises. Audit reviewed the ratings given to the facilities in the Facilities Condition Assessments conducted in the period from 2018-19 to 2023-24 and found room for improvement in conducting the assessments: (a) PolyU's guidelines did not clearly specify the basis for giving the ratings in the Facilities Condition Assessments. For example, in the period from 2020-21 to 2023-24, a lift with downtime of 0 to 29.5 hours (averaging 12 hours) per year was given a "poor" rating for the criterion of "availability" in all four years; and (b) while the scale adopted was from 0 to 4, a facility was given a rating of 4.5 in one of the evaluation criteria in the 2021-22 assessment (paras. 2.3 and 2.4).

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3. ***Need to enhance monitoring of maintenance of lifts and escalators to minimise occurrence of incidents.*** Audit reviewed the incident reports of the 74 lifts and the 10 escalators in 2022-23 and 2023-24. Audit found that: (a) for 69 (93%) of the 74 lifts, there were incidents occurred. The total number of incidents occurred was 413, ranging from 1 to 40 incidents for each lift (averaging 6 incidents). The total downtime involved was 2,523 hours, ranging from 0 to 324 hours for each lift (averaging 37 hours). The majority of the incidents (i.e. 266 (64%) of the 413 incidents) were caused by equipment failure, involving 1,855 (74%) hours of total downtime; and (b) for all the 10 escalators, there were incidents occurred. The total number of incidents occurred was 134, ranging from 2 to 41 incidents for each escalator (averaging 13 incidents). The total downtime involved was 648 hours, ranging from 3 to 140 hours for each escalator (averaging 65 hours). The majority of the incidents (i.e. 84 (63%) of the 134 incidents) were caused by equipment failure, involving 410 (63%) hours of total downtime (para. 2.7).

4. ***Works commenced before normal works orders were approved.*** Audit analysed the 903 completed normal works orders created in the period from July 2022 to March 2024. Audit found that for 488 (54%) of the 903 normal works orders, contrary to the requirements in PolyU's Operation Manual, the works had commenced 1 to 214 days (averaging 9 days) before obtaining the Section Heads' approvals. For 106 (22%) of the 488 works orders, the works had commenced even before the works order requests were endorsed. The works had commenced 1 to 111 days (averaging 8 days) before the works order requests were endorsed, and 1 to 124 days (averaging 16 days) before obtaining the Section Heads' approvals. For 72 (15%) of the 488 works orders, at the time the Section Heads' approvals were obtained, the works had been completed (paras. 2.13 and 2.14).

5. ***Room for improvement in issuing covering works orders.*** In cases where works need to be commenced before the issue of works orders, covering works orders may be issued in accordance with the requirements stipulated in PolyU's Operation Manual. Audit examined 10 completed covering works orders created in the period from July 2022 to March 2024. Audit found that: (a) for 1 (10%) works order, contrary to the requirement in PolyU's Operation Manual, the Section Head's prior endorsement was not sought before works commencement. The endorsement was only obtained 518 days after the works commencement, or 139 days after the works completion; (b) for 2 (20%) works orders related to urgent jobs, contrary to the requirement in PolyU's Operation Manual, the endorsements were obtained long after the works commencement (i.e. 69 and 203 days after the works commencement, or 69 and 198 days after the works completion); and (c) for 5 (50%) works orders, the

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special circumstances giving rise to the need for covering works orders were not stated in the endorsement applications. All the 5 works orders were endorsed without documenting the justifications (paras. 2.12, 2.13 and 2.15).

6. ***Long time taken to issue certificates of completion after completion of works.*** As at 30 June 2024, 1,054 works orders created in the period from July 2022 to March 2024 had been completed. Audit analysed the 1,054 works orders and found that: (a) on some occasions, long time was taken by PolyU to issue the certificates of completion after the works had been completed. For 390 (37%) of the 1,042 works orders with certificates of completion issued, the certificates were issued more than 60 days after the works had been completed; (b) for 8 works orders, as at 30 June 2024, the certificates of completion had not been issued, the time elapsed from the works completion date was 0 to 151 days (averaging 47 days); and (c) for the remaining 4 works orders, the information on the works completion date was not available. Therefore, the time taken to issue the certificates of completion could not be analysed (para. 2.18).

7. ***Need to enhance guidelines on site inspections.*** Audit examined the records of site inspections conducted by the Project Managers for 30 service contracts that were in effect as at 1 April 2024. Audit found that there were variations in the mode, frequency and timing, and the documentation of the results of site inspections: (a) for 27 (90%) contracts, the Project Managers visited the site in person to conduct the inspections, and for 3 (10%) contracts, the Project Managers asked the contractors to provide photos of the site for the purpose of inspections; (b) for the 27 contracts with records showing that site inspections had been conducted by the Project Managers, the number of inspections conducted in 2023-24 ranged from 1 to 12 (averaging 3). The records did not show whether the site inspections had been conducted at the critical stage of the maintenance work; and (c) for all the 30 service contracts, there were no records showing the scope covered in the site inspections and the results of site inspections. Audit also found that PolyU's Operation Manual did not specify the mode, frequency, timing and scope of site inspections, and the requirement for Project Managers to record the results of site inspections (paras. 2.20 and 2.21).

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On-request maintenance and other repair and maintenance work

8. *Need to improve spot checks on job orders for on-request maintenance.* According to PolyU's Operation Manual, Project Managers are required to conduct random spot checks on jobs done. Audit analysed the 80,997 job orders for on-request corrective maintenance and 2,679 job orders for on-request emergency maintenance created and completed in the period from 2021-22 to 2023-24. Audit found that: (a) for the 80,997 job orders for on-request corrective maintenance, spot checks were only conducted for 720 (0.9%) orders. While there were 15 job types for corrective maintenance, the types of job covered in the spot checks ranged from 1 (7%) in 2022-23 to 9 (60%) in 2021-22. In the period, no spot checks were conducted for 5 (33%) of the 15 job types; (b) for the 2,679 job orders for on-request emergency maintenance, only 1 spot check was conducted in 2021-22. No spot check was conducted in the period from 2022-23 to 2023-24. In the period, no spot checks were conducted for 5 (83%) of the 6 job types involved; and (c) for both on-request corrective maintenance and on-request emergency maintenance, the results of the spot checks were not documented (para. 3.5).

9. *Need to improve electronic survey for collecting users' feedback.* According to PolyU's Operation Manual, after an on-request maintenance job order has been completed, an electronic survey is automatically sent to the users for collecting feedback. Audit analysed the users' feedback collected for 80,997 job orders for on-request corrective maintenance created and completed in the period from 2021-22 to 2023-24. Audit found that: (a) of the 80,997 job orders, users' feedback was only collected for 2,391 job orders, representing a response rate of 3%; and (b) the response rate of users' feedback decreased from 3.7% (i.e. 927 users' feedback for 24,721 job orders) in 2021-22 to 2.5% (i.e. 702 users' feedback for 28,552 job orders) in 2023-24 (paras. 3.8 and 3.9).

10. *Need to ensure information necessary for performance monitoring is recorded and inputted into Computerised Maintenance Management System (CMMS).* PolyU sets performance pledge for handling requests for corrective maintenance services and emergency maintenance services. When the handling of a service request has been completed, CMMS calculates the time taken for completing or attending to the request and indicates whether the performance pledge has been met. Audit examined the data maintained in CMMS for the job orders created and completed in the period from 2021-22 to 2023-24. Audit found that the information

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on the job type of 2,857 (4%) of the 80,997 job orders for on-request corrective maintenance and 3 (0.1%) of the 2,679 job orders for on-request emergency maintenance was not available. Therefore, CMMS was unable to determine whether the performance pledge had been met (paras. 3.11 and 3.12).

11. ***Need to ensure that performance pledge for on-request maintenance is met.*** For the job orders created and completed in the period from 2021-22 to 2023-24, the information necessary for determining whether the performance pledge was met was available for 76,625 on-request corrective maintenance job orders and 2,676 on-request emergency maintenance job orders. Audit examined the performance of the 76,625 corrective maintenance job orders and 2,676 emergency maintenance job orders and found that the performance pledge for handling requests was not met for 6,080 (8%) corrective maintenance job orders and 19 (1%) emergency maintenance job orders. For 560 (9%) of the 6,080 corrective maintenance job orders and 11 (58%) of the 19 emergency maintenance job orders, the reasons for not meeting the pledge had not been recorded in CMMS (para. 3.13).

12. ***Need to ensure that cost estimates are prepared in a timely manner.*** According to the contract signed between PolyU and the quantity surveying consultant, upon receiving PolyU's notification, the consultant shall prepare the cost estimates within the stipulated timeframe. In the period from May 2021 to May 2024, the quantity surveying consultant received 2,348 requests for preparation of cost estimates. Audit examined the records of the 2,348 requests and found that, as at 31 May 2024: (a) cost estimates had been prepared for 2,342 requests. For 1,163 (50%) requests, there were delays in the preparation of cost estimates. The delays ranged from 1 to 80 working days, averaging 13 working days; and (b) although the contract period had expired, for 6 requests made prior to the contract end date, the cost estimates had not been prepared. The time elapsed ranged from 8 to 569 working days (averaging 164 working days) from the date of receiving the requests (paras. 3.33 and 3.34).

13. ***Need to ensure that requirements on processing of payment applications are complied with.*** Audit examination of the records of the processing of the 3,931 payment applications by the quantity surveying consultant in the period from May 2021 to May 2024 revealed that: (a) as at 31 May 2024, of the 1,954 completed payment applications, there were delays in the processing of 1,950 (99%) applications. The delays ranged from 3 to 634 working days (averaging 117 working days). Of the 1,977 payment applications pending consultant's

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processing, the time elapsed from the date of request up to 31 May 2024 ranged from 3 to 725 working days (averaging 214 working days); (b) in the period from May 2021 to May 2024, site checks had been conducted to only 17 or 0.4% of the 3,931 payment applications; and (c) for 575 (29%) of the 1,954 completed payment applications with final values agreed, the final values of works orders in the payment applications were not within a variance of 20% of the cost estimates. Contrary to the contract requirement, the notes on the cost differences had not been prepared for endorsement in 34 (6%) of the 575 applications (para. 3.38).

14. *Need to enhance performance monitoring on quantity surveying consultant.* According to PolyU's Operation Manual, if the performance mark is less than 50, the consultant's assessment report will be rated as "Adverse", and for the first adverse assessment report issued to consultant, a warning letter will be issued to the consultant and the consultant will be required to improve his performance. Audit found that the assessment report of the quantity surveying consultant covering a 22-month period from May 2021 to March 2023 was rated as "Adverse". However, after the first adverse report was issued to the consultant in June 2023, and up to the end of the contract period in May 2024, no warning letter had been issued by PolyU (paras. 3.45 and 3.46).

Procurement of services

15. *Need to enhance competition of tendering exercises.* Audit reviewed 60 open tendering exercises for repair and maintenance service contracts conducted in the period from 2019-20 to 2023-24, involving awards of contracts with a total contract value of \$80.8 million. Audit noted that in 25 (41%) exercises, the competition was limited and the responses from contractors were lukewarm: (a) in each of 8 (13%) exercises, only 1 tender was received; and (b) in each of 17 (28%) exercises, 2 tenders were received (para. 4.5).

16. *Need to improve issuing of notifications to unsuccessful tenderers.* According to the Manual of Purchasing Procedures, unsuccessful tenderers will be notified as soon as practicable with reasons explaining why their offers have not been accepted. However, the guidelines did not specify the required timeframe for issuing notifications to unsuccessful tenderers. Audit reviewed 60 tendering exercises for repair and maintenance service contracts conducted in the period from 2019-20 to 2023-24. Audit noted that, of the 52 tendering exercises where more than

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1 tender was received and hence the unsuccessful tenderers should be notified: (a) in 44 (85%) tendering exercises, notifications to the unsuccessful tenderers were issued more than 30 days (ranging from 31 to 816 days, averaging 257 days) after the acceptance of the successful tenders; and (b) in 35 (67%) tendering exercises, the notifications did not provide reasons explaining why the tenderers' offers had not been accepted (paras. 4.7 and 4.8).

17. *Need to ensure that the declaration and undertaking forms submitted by tender evaluation team members for service contracts are properly kept.* Audit examined 60 tendering exercises for repair and maintenance service contracts conducted in the period from 2019-20 to 2023-24, involving a total of 32 staff members taking up the responsibility as members of the tender evaluation teams. Audit noted that in 7 (12%) of the 60 tendering exercises, the declaration and undertaking forms for 1 member of each tender evaluation team (involving a total of 3 staff members) could not be located and were not available for Audit's inspection (para. 4.15).

18. *Need to ensure that performance bonds are arranged for term contracts in a timely manner.* The successful tenderer for a repair and maintenance term contract is required to arrange for a bond or a sum of money as surety or security for the due performance of the contract (i.e. a performance bond) for approval by PolyU. However, PolyU did not set the required timeframe for the submission of the performance bond. Audit examined the effective dates of the performance bonds submitted by the successful tenderers in 4 tendering exercises for repair and maintenance term contracts conducted in the period from 2019-20 to 2023-24. Audit noted that: (a) for 3 (75%) of the 4 contracts, the effective dates of the performance bonds were later than the commencement dates of the contracts by 8, 56 and 71 days respectively; and (b) for the remaining 1 (25%) contract, the commencement date of the contract was 28 June 2024. As at 31 August 2024, i.e. 64 days after the commencement date of the contract, the performance bond had not yet been submitted (paras. 4.24 and 4.25).

Campus restoration and security enhancement work and other issues

19. *Need to continue to keep under review security measures.* In late November 2019, to restore the campus environment from the damages resulted from the black-clad violence in 2019 and to enhance the protection of PolyU's campus,

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campus restoration and security enhancement work was carried out by phases and was completed in June 2022. As at 30 June 2023, the total expenditure incurred on the campus restoration and security enhancement work was \$235.8 million, comprising expenditure on recovery and reinstatement works of \$106.2 million and expenditure on security and safety enhancement measures of \$129.6 million. As part of the security enhancement measures to ensure the safety and security of people and property, and to cater for the need to comply with the public area requirements stipulated in the land leases, PolyU has implemented various access control policies. As at September 2024, access to the campus is restricted to students, staff and authorised persons. Campus users shall authenticate their identities using their access cards or access codes at the turnstiles at major campus access points. For areas that allow public access pursuant to the land lease requirements, access control is achieved by clear demarcation of public open space, enhanced access control and setting up of security point at designated location. Audit noted that, from time to time, members of the community raised concern about the open campus policy in PolyU. In its report to the University Grants Committee (UGC) on the enhancement of campus security in September 2022, PolyU indicated that it would continue to monitor the situation and adjust the access control and security measures, including mitigation of the measures when the situation justifies. Audit considers that PolyU needs to continue to keep under review the latest situation and adjust the security measures as appropriate (paras. 5.2, 5.4, 5.5 and 5.11 to 5.14).

20. ***Need to continue to conduct thorough risk assessments and enhance risk management plans.*** According to UGC's letter on the special grant issued to PolyU in June 2020, PolyU is entrusted to duly take into account the financial implications and sustainability of the security enhancement initiatives in the long run. UGC considered that the special grant also served the purpose of prompting universities to develop more robust risk assessment systems and effective control mechanisms. According to PolyU, it had observed the conditions required by UGC in the one-off special grant to PolyU in June 2020 when implementing the security enhancement measures and had submitted a report to UGC upon the completion of the enhancement measures in September 2022. Audit considers that PolyU should continue to conduct thorough risk assessments and enhance its risk management plans (paras. 5.15 to 5.17).

21. ***Need to improve recording and reporting of site safety inspections and irregularities.*** Audit reviewed the records of site safety inspections conducted on the work sites of the contractors and the reports on health and safety performance of the contractors compiled by the Campus Facilities and Sustainability Office (CFSO) and

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the Health and Safety Office (HSO) in the period from 2019-20 to 2023-24. Audit noted that: (a) site safety inspections conducted by CFSO in which no irregularities were identified were not recorded; (b) for 13 (2%) of the 549 irregularities recorded in the register of site safety irregularities of CFSO, the dates of completing the follow-up actions were earlier than the dates of identifying the irregularities; and (c) there was no consolidated system or database to capture information on all the site safety inspections conducted and the irregularities identified by CFSO and HSO on the work sites of the contractors to facilitate the generation of management reports for monitoring the health and safety performance of the contractors (para. 5.23).

22. *Need to enhance guidelines on issuing of written warnings to contractors.* According to the Construction Health and Safety Management Manual, CFSO should give verbal or written warnings to the contractors with unacceptable health and safety performance. Audit noted that the guidelines did not set out the circumstances under which written warnings should be issued to contractors. Audit examined the written warnings issued to the contractors by PolyU and the register of site safety irregularities of CFSO in the period from 2019-20 to 2023-24. Audit noted that the written warnings were not issued in a consistent manner on some occasions. For example, PolyU issued a written warning to a term contractor because of unsafe acts of its workers while working on scaffolds and frequent recurrence of irregularities concerning safety harness. While there were frequent recurrences of similar irregularities by the same term contractor and another term contractor on other occasions, no written warnings were issued on such occasions (paras. 5.25 and 5.26).

Audit recommendations

23. **Audit recommendations are made in the respective sections of this Audit Report. Only the key ones are highlighted in this Executive Summary. Audit has recommended that the President, The Hong Kong Polytechnic University should:**

Planned maintenance

- (a) **enhance guidelines on the Facilities Condition Assessments and ensure the accuracy of the ratings given to the facilities in the Facilities Condition Assessments (para. 2.10(a) and (b));**

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- (b) **enhance the monitoring of maintenance of lifts and escalators to minimise the occurrence of incidents (para. 2.10(c));**
- (c) **take measures to ensure that the requirements in PolyU's Operation Manual are complied with, including:**
 - (i) **normal works orders are approved and covering works orders are endorsed before works commencement (para. 2.23(a)(i));**
 - (ii) **for covering works orders for urgent jobs, the Section Heads' endorsements are sought at the earliest opportunity (para. 2.23(a)(ii)); and**
 - (iii) **the special circumstances giving rise to the need for covering works orders are stated in the endorsement applications and the justifications for endorsements are documented (para. 2.23(a)(iii));**
- (d) **ascertain the reasons for the long time taken to issue the certificates of completion for works orders and take measures to ensure that certificates of completion are issued as soon as practicable after the works are completed (para. 2.23(b) and (c));**
- (e) **take measures to ensure that necessary information of works orders is properly maintained with a view to facilitating the monitoring of the handling of works orders (para. 2.23(d));**
- (f) **enhance the guidelines on site inspections, and require the Project Managers to record the results of site inspections (para. 2.23(e));**

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- (g) **enhance guidelines on conducting spot checks on job orders for on-request maintenance, and ensure that the spot check results are documented (para. 3.15(a));**

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- (h) take measures to improve the response rate of electronic survey for collecting users' feedback on on-request corrective maintenance services (para. 3.15(b));
- (i) take measures to ensure that all information necessary for performance monitoring of on-request maintenance services is recorded and inputted into CMMS (para. 3.15(c));
- (j) take measures to ensure that the performance pledge for on-request maintenance services is met and the reasons for not meeting the performance pledge are documented (para. 3.15(d));
- (k) ensure that cost estimates for repair and maintenance work are prepared by the quantity surveying consultant in a timely manner (para. 3.48(c));
- (l) ensure that the requirements on processing of payment applications are complied with by the quantity surveying consultant (para. 3.48(d));
- (m) enhance the performance monitoring on quantity surveying consultant and issue a warning letter to the consultant after an adverse assessment report is issued (para. 3.48(g));

Procurement of services

- (n) explore measures to further enhance competition of tendering exercises for service contracts (para. 4.17(a));
- (o) enhance the guidelines to specify the required timeframe for issuing notifications to unsuccessful tenderers for service contracts (para. 4.17(b));
- (p) take measures to ensure that unsuccessful tenderers for service contracts are notified in accordance with the required timeframe with reasons explaining why their offers have not been accepted (para. 4.17(c));

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- (q) ensure that the declaration and undertaking forms submitted by tender evaluation team members for service contracts upon taking up the responsibility are properly kept (para. 4.17(e));
- (r) take measures to ensure that performance bonds are arranged by the successful tenderers for term contracts in a timely manner (para. 4.36(c));

Campus restoration and security enhancement work and other issues

- (s) continue to keep under review the latest situation and adjust the security measures as appropriate (para. 5.18(a));
- (t) continue to conduct thorough risk assessments and enhance PolyU's risk management plans (para. 5.18(b));
- (u) take measures to ensure that all site safety inspections conducted by CFSO are recorded (para. 5.38(a));
- (v) take measures to ensure that the information recorded in the register of site safety irregularities of CFSO is accurate (para. 5.38(b));
- (w) consider regularly compiling a consolidated report capturing information on all the site safety inspections conducted and the irregularities identified by CFSO and HSO to facilitate performance monitoring (para. 5.38(c)); and
- (x) enhance guidelines on the circumstances under which written warnings should be issued to the contractors with unacceptable health and safety performance (para. 5.38(d)).

Response from The Hong Kong Polytechnic University

24. The President, The Hong Kong Polytechnic University agrees with the audit recommendations.