

Amendments to the Lifts and Escalators (Safety) Ordinance in Hong Kong: Stakeholders' Views, Implications, and Controls beyond the Statute

Joseph H.K. Lai*

Department of Building Services Engineering
The Hong Kong Polytechnic University

* Corresponding author: Dr. Joseph H.K. Lai. Address: Department of Building Services Engineering, The Hong Kong Polytechnic University, Hung Hom, Hong Kong. Telephone: (852) 2766 4697. Fax: (852) 2765 7198. Email: bejlai@polyu.edu.hk.

Introduction

Worldwide many metropolises, including Hong Kong, are increasingly constructed with tall buildings and even skyscrapers. For ensuring proper design, construction and operation of the building facilities in Hong Kong, a range of regulatory controls have been in force.¹ In particular, the Lifts and Escalators (Safety) Ordinance, Cap 327 ('the LESO'),² lays down the statutory requirements governing the safety of lifts and escalators. According to the government's record, there were about 58,000 lifts and 8,000 escalators, which are essential means of vertical transportation for numerous end users of the high-rise buildings.³

Unfortunately, an unprecedented lift incident occurred on 25 October 2008. Seven of the eight suspension ropes of a lift car serving the Shin Nga House, a 35-storey building of the Fu Shin Estate in Tai Po, were broken. Consequently, the lift car plunged to the ground floor.⁴ After this incident and some others thereafter,^{5,6} the safety of lifts and escalators has become a grave concern of the society. In response, the government took a series of actions, including a review of the existing provisions of the LESO and the launch of a public consultation which sought to solicit the views of the stakeholders on a number of proposed amendments to the LESO.

In the past, legal research in the built environment used to focus on construction of new buildings.⁷ Recently, studies which investigated legal matters concerning existing buildings, e.g. heritage buildings,⁸ have grown. In fact, public consultations on legislative amendments have increased in the post-1997 era⁹ and an analysis of emotions should help realise the social nature of regulation,¹⁰ but research studies on the stakeholders' perceptions of legislative amendments and the implications of regulatory changes on the Hong Kong society remains limited. In order to provide a better understanding of these issues, a longitudinal study spanning the initiation, consultation and final stages of making amendments to the LESO was carried out.

The first part of the study, as reported in the next section, was to obtain an overview of lifts and escalators safety in Hong Kong. Then a comparative analysis was performed based on the stakeholders' views on the proposed amendments to the LESO, which were collected from two surveys - one conducted by the government and the other by the professional institutions in the building sector. The proposed amendments which received just fair supports were identified, followed by analysing the factors leading to these findings and

¹ J. Lai, F. Yik, K.T. Chan, W.L. Lee and C.K. Chau, "Regulatory controls on building services works in Hong Kong" (2011) 27 *Construction Law Journal*, 457.

² Enacted in 1960, the LESO is to provide for the design and construction, and the maintenance in safe working order of lifts and escalators, for the examination and testing thereof and for matters connected with the purposes aforesaid.

³ With a limited land area of 1,104 square kilometres yet a population of over 7 million, Hong Kong is densely built with high-rise buildings.

⁴ Electrical and Mechanical Services Department, *Technical Report on the Lift Incident on 25 October 2008 at Shin Nga House, Fu Shin Estate, Tai Po* (Hong Kong: 2008).

⁵ Electrical and Mechanical Services Department, *Report on Lift Incident on 9 November 2008 at Lift No. 4, Wan Lam House, Wan Tau Tong Estate, Tai Po* (Hong Kong: 2008).

⁶ Electrical and Mechanical Services Department, *Technical Report on Lift Incident on 11 January 2009 at Heng Shan House, Heng On Estate, Ma On Shan* (Hong Kong: 2009).

⁷ Examples include: O. Perez, "Using Private-Public Linkages to Regulate Environmental Conflicts: The Case of International Construction Contracts" (2002) 29 *Journal of Law and Society* 77; and N. Gould, "NEC3: Construction Contract of the Future?" (2008) 24 *Construction Law Journal* 286.

⁸ D. Lung, "Built Heritage in Transition: A Critique of Hong Kong's Conservation Movement and the Antiquities and Monuments Ordinance" (2012) 42 *Hong Kong Law Journal* 121.

⁹ For example: A. Upham, "Counting the Cost in Hong Kong: The Consultation Paper on Wasted Costs in Criminal Cases" (2006) 14 *Asia Pacific Law Review* 193.

¹⁰ B. Lange, "The Emotional Dimension in Legal Regulation" (2002) 29 *Journal of Law and Society* 197.

the implications of the amendments eventually made to the LESO. Finally, the relevant common law principles, which impose governances besides those stipulated in the statute for ensuring lifts and escalators safety, were examined by a review of the courts' judgments for two important precedents concerning management and use of escalators.

Lifts and Escalators Safety

Under the LESO, safety certification of lifts and escalators must be carried out by registered lift engineers and registered escalator engineers, respectively.¹¹ Only competent lift workers and competent escalator workers meeting the employment requirements are authorised to carry out relevant works independently.¹² By virtue of s.27G of the LESO, two codes of practice, one focussing on design and construction¹³ and the other on testing and maintenance,¹⁴ were established to provide practical guidelines on the carrying out of lift and escalator works.

Part IV of the LESO, in particular, stipulates the statutory requirements on maintenance and examination of lifts and escalators and testing of safety equipment provided therefor. Essentially, the setting of the requirements is technology-based rather than systems-based,¹⁵ or performance- or management-based.¹⁶ A number of time-based maintenance and examination works are prescribed in ss.19, and 21 to 24 of the LESO, including: (i) periodic maintenance of lifts and escalators; (ii) periodic examination of lifts; (iii) periodic examination of escalators; (iv) periodic testing of safety equipment of lifts; and (v) periodic testing of safety equipment of escalators. [Table 1](#) shows a summary of the tasks needed for accomplishing these works and the frequencies for their execution.

The Director of Electrical and Mechanical Services (DEMS), i.e. the enforcing authority of the LESO, is empowered by s.27 to prohibit use and operation of a lift or escalator where he, among other things, is not satisfied that the provisions of s.19 are being complied with in respect of a lift or escalator; or has received a report from a registered lift engineer or a registered escalator engineer that such engineer is not satisfied that a lift or escalator and all machinery and equipment connected therewith or the safety equipment provided for a lift or escalator, or both, as the case may be, is or are in safe working order.

Although the statutory maintenance requirements and the powers of the authority for ensuring the safety of lifts and escalators are clearly specified in the LESO, the number of lift incidents, as summarised in [Table 2](#), soared from 2008 to 2009 and remains high recently.

Further to implementing a package of safety improvement measures after the spate of lift incidents in late 2008, the government conducted a review of the LESO with a view to

¹¹ 'Registered escalator engineer' means a person whose name is on the register of escalator engineers and 'registered lift engineer' means a person whose name is on the register of lift engineers. Both of these registers are kept under s.5 of the LESO, and the duties of the engineers are specified in s.11A.

¹² Pursuant to s.29A of the LESO, 'competent lift workers' and 'competent escalator workers' who are under the employment of registered lift contractors and registered escalator contractors, as appropriate, are respectively authorised to carry out lift works and escalator works independently and to supervise others to perform such works.

¹³ Electrical and Mechanical Services Department, *Code of Practice on the Design and Construction of Lifts and Escalators* (Hong Kong: 2010).

¹⁴ Electrical and Mechanical Services Department, *Code of Practice for Lift Works and Escalator Works* (Hong Kong: 2010).

¹⁵ N. Gunningham, "Integrating Management Systems and Occupational Health and Safety Regulation" (1999) 26 *Journal of Law and Society*, 192.

¹⁶ C. Coglin and D. Lazer, "Management-Based Regulation: Prescribing Private Management to Achieve Public Goals" (2003) 37 *Law & Society Review* 691.

improving the operational efficiency of the enforcement work, tightening up the control of maintenance practices, and coping with technological advancement and increasing expectation of the public on lift and escalator safety. As a result, the following five areas were identified for further study and exploring practical solutions to strengthen the regulatory framework on lift and escalator safety:¹⁷

- 1 review of the regulatory regime for the public housing estates and government buildings;
- 2 upgrading of the qualification requirements for registration as lift and escalator engineers;
- 3 introduction of a registration system for lift and escalator workers;
- 4 streamlining of existing regulatory processes; and
- 5 increase of the penalty level of offences under the LESO.

Public Consultation and Survey Results

For seeking the views of the stakeholders on the proposed legislative amendments for the above areas, the government launched a three-month consultation on 30 November 2009. During the consultation period, press conference and forums, etc. were held to publicise the proposals and encourage the general public to respond to the consultation.¹⁸ In parallel, the government invited a number of professional institutions, the members of which are key players in looking after the operation and upkeep of facilities in buildings, to comment on the proposed amendments.

With the support given by the local offices of nine other building-related institutions,¹⁹ the Building Services Operation and Maintenance Executives Society (BSOMES)²⁰ organised an open forum to provide a platform for interested practitioners to discuss on the proposals and, at the same time, gather their views and opinions. For the latter purpose, a questionnaire designed based on the questions contained in the consultation paper was distributed and collected in two ways: first, each forum participant was requested to complete a hard copy of the questionnaire and return it at the end of the forum; second, an electronic copy of the questionnaire was disseminated through emails to all members of the BSOMES, inviting them to complete and return it by the deadline.

According to the government's report,²¹ there were 1,038 written submissions, 503 online responses and 126 feedbacks collected during the consultation forums and meetings. The summary of the report shows that the total number of responses to each consulted item ranged between 742 and 769, and they came from three groups of stakeholders:

- 1 'General public' - public, lift/escalator owners, incorporated owners' committee and property management companies;

¹⁷ Development Bureau, *Consultation Paper on the Amendment Proposals to the Lifts and Escalators (Safety) Ordinance* (Hong Kong: 2009).

¹⁸ Development Bureau, *Paper on 'Public Consultation on Legislative Amendment Proposal to the Lifts and Escalators (Safety) Ordinance, Chapter 327'* (Hong Kong: 2010).

¹⁹ Asian Institute of Intelligent Buildings; International Facility Management Association; Royal Institution of Chartered Surveyors; The Chartered Institution of Building Services Engineers; The Hong Kong Institution of Engineers (Safety Specialist Committee); The Hong Kong Institute of Housing; The Hong Kong Institute of Surveyors; The Institute of Measurement and Control; The Society of Operations Engineers.

²⁰ Incorporated on 26 April 2000 as a non-profit-making organization, BSOMES is the leading learnt society conglomerating the professionals responsible for operating and maintaining buildings in Hong Kong.

²¹ Development Bureau, *Paper on 'Public Consultation on Legislative Amendment Proposal to the Lifts and Escalators (Safety) Ordinance, Chapter 327'* (Hong Kong: 2010).

- 2 'Trade' - registered contractors, registered engineers, workers, the Lift & Escalator Contractors Association, the Registered Elevator & Escalator Contractors Association Limited, and the Hong Kong General Union of Lift and Escalator Employees; and
- 3 'Professional institutions' - The Hong Kong Institution of Engineers, The Institution of Mechanical Engineers (HK Branch), The International Association of Elevator Engineers (HK and China Branch), The Institution of Engineering and Technology, and The Society of Operations Engineers (Hong Kong Region).

Through the survey of the BSOMES, a total of 234 questionnaires completed with valid data were collected. With all of them being experienced practitioners, the respondents on average had 16.6 years of work experience and the most experienced respondent had worked in the field for 40 years. The majority worked as building/facility manager, followed by building owner, consultant, and lift/escalator contractor. There were 51 registered professional engineers²² (RPEs), 10 registered lift or escalator engineers, and four competent lift or escalator workers among the respondents.

Drawn on the above two surveys, the proportions of respondents who agreed to, disagreed to, or had no comment on (or being neutral to) the consulted items were obtained (Table 3). In general, the respondents indicated their supports to most of the proposed amendments. But for some particular items, as discussed in the following, the supports were just fair.

Upgrading the qualification requirements for registration as lift and escalator engineers

56.3% of those surveyed by the government supported to upgrade the qualification requirements for registration as lift and escalator engineers. Referring to the detailed statistics of the Development Bureau,²³ 61.6% of the general public supported this proposal whereas 57.5% of the trade practitioners indicated their objections. The comments given from those who were against this proposal include: (i) upgrading the qualification requirement to 'a bachelor degree of relevant discipline plus four years relevant experience' would be sufficient; (ii) concerns about the sufficiency of RPEs in the market to provide services in lift and escalator industry after the transitional period; (iii) even if the applicant possessed the prerequisites for RPE, two years relevant working experience was not enough.

At the time of the consultation, a candidate who is in possession of a qualification at, or higher than, a higher diploma or higher certificate in mechanical engineering, electrical engineering, electronic engineering or building services engineering issued by one of the recognised institutions, and either (a) has completed an apprenticeship in a suitable discipline of not less than 2 years, and has not less than 3 years' subsequent working experience, or (b) has not less than 5 years' relevant working experience, may seek registration as a lift and escalator engineer. In the consultation paper, it was proposed to adopt the qualification of RPE of suitable disciplines with at least 2 years' relevant working experience as the prerequisite criteria for becoming lift and escalator engineers. Apart from the above-mentioned qualification requirements, written examination and interview currently adopted for assessing the conversance of the candidates for registration as lift and escalator engineers

²² 'Registered professional engineer' means a person whose name in the register established under s.7 of the Engineers Registration Ordinance (Cap 409). A person may be registered as a registered professional engineer if, among other requirements, he is a member of the Hong Kong Institution of Engineers or equivalent, has had at least one year of relevant professional experience in Hong Kong before the date of his application for registration and is ordinarily resident in Hong Kong.

²³ Development Bureau, *Paper on 'Public Consultation on Legislative Amendment Proposal to the Lifts and Escalators (Safety) Ordinance, Chapter 327'* (Hong Kong: 2010).

will continue to be employed. Though not documented in the Development Bureau's report, the reluctance of the existing trade practitioners to upgrading their qualifications to meet the new requirement is a possible reason for those who did not support this proposal.

Transitional arrangement for registration as lift and escalator engineers

Without an established practice for registered lift and escalator engineers registering as RPE, only 16 of the 44 registered lift and escalator engineers who are in possession of the qualification and experience have acquired the RPE status whilst RPEs not practicing in this field usually lack the hands-on experience on examination of lifts and escalators.²⁴ Since immediate and full adoption of RPE as a qualification requirement for lift and escalator engineers may render difficulties in having sufficient qualified practitioners to cater for the statutory examination and testing of lifts and escalators, it was recommended that: (i) existing registered lift and escalator engineers can retain their statutory status when the new qualification requirement comes into force; (ii) as an interim measure, degree-holders in suitable disciplines with 4 years' relevant working experience will be eligible for registration as lift and escalator engineers; and (iii) this interim measure will be dropped when there are enough RPEs meeting the new requirement.

Unlike the moderate (61.8%) supports surveyed by the BSOMES, only 53.4% of those who responded to the government supported the above transitional arrangement and, among them, a significant proportion (65.3%) of the trade practitioners, compared with only half (50.6%) of the general public, expressed their supports.²⁵ Whilst the reasons for such fair supports of the general public were not shown in the collected opinions, some suggested that upgrading the qualification requirement to 'a bachelor degree of relevant discipline plus four years relevant experience' should be the ultimate qualification prerequisites rather than an interim measure. The comparatively higher proportion of supporters among the trade practitioners was probably drawn from those who are prepared to upgrade their qualifications to meet the new requirement.

Providing maintenance and examination services separately; appointing a third party for providing an independent quality assurance service

Under the existing legislative framework, the owners of lifts and escalators may engage in-house engineers of maintenance contractors or engineers who are independent of the maintenance contractors to carry out maintenance and examination of lifts and escalators. The proposal of requiring RPEs who are independent from the maintenance contractors to undertake independent quality assurance of the maintenance service provided by the contractors should be conducive to improving the standard of lift and escalator safety but would also mean restricting the choice of the owners.

From the survey of the BSOMES, only 55.5% of the respondents agreed not to impose the restriction on providing maintenance and examination services separately by contractors and engineers. A similar proportion (55.8%) of those who responded to the government were supportive to not requiring all lift and escalator owners to appoint a third party for providing an independent quality assurance service, and exactly half of those surveyed by the BSOMES took the same stance.

²⁴ Development Bureau, *Consultation Paper on the Amendment Proposals to the Lifts and Escalators (Safety) Ordinance* (Hong Kong: 2009).

²⁵ Development Bureau, *Paper on 'Public Consultation on Legislative Amendment Proposal to the Lifts and Escalators (Safety) Ordinance, Chapter 327'* (Hong Kong: 2010).

The above responses reflect the absence of strong supports to the two proposed amendments. For those who opposed to the separate provisions of maintenance and examination services and the appointment of a third party for quality assurance purpose, they probably wondered about the effectiveness of these measures and the worthiness of the additional costs for taking the measures.

Lifts and Escalators Bill

The result of the public consultation, showing the general support of the stakeholders to the proposed amendments, was reported to the Legislative Council²⁶ Panel on Development on 22 June 2010. There were no objections from the Panel members to the proposal. In consideration that various amendments to the LESO in the past have made its current structure very complicated and that the amendments to the LESO this time are substantial, it was proposed to introduce a new bill (entitled 'Lifts and Escalators Bill')²⁷ and repeal the LESO such that the entire statutory control over lifts and escalators can be set out in a clear and systematic manner.²⁸ Following the official legislative drafting framework,²⁹ the Bill was introduced to the Legislative Council on 19 April 2011 after the advice given by the Executive Council and the order issued by the Chief Executive.³⁰ The key features of the Bill are outlined as follows.

Strengthening the registration regime of personnel engaged in lift and escalator works

Lift engineers and escalator engineers – The Bill requires them to be RPEs of relevant disciplines with at least two years' relevant experience before they may be considered for registration as lift or escalator engineers.³¹ Existing lift and escalator engineers will be allowed to retain their registration status when the Bill is enacted and comes into force. As an interim measure, degree-holders in suitable disciplines with four years' relevant experience will be eligible for registration under the Bill. The situation will be reviewed in due course after the enactment of the Bill for terminating the interim arrangement.

Lift contractors and escalator contractors – It is made clear in the Bill the factors³² that the DEMS would consider in deciding whether it is appropriate to register an applicant as a lift contractor or escalator contractor. Existing lift and escalator contractors will be allowed to retain their registration status when the Bill is enacted and comes into force. A registration renewal system for lift and escalator contractors on five-year basis will be introduced to provide a mechanism for continual compliance checking.

²⁶ The main functions of the Legislative Council are to enact laws; examine and approve budgets, taxation and public expenditure; and monitor the work of the government.

²⁷ The Bill is divided into eight parts: Part 1 – Preliminary; Part 2 – Safety of Lifts; Part 3 – Safety of Escalators; Part 4 – Registration of Persons Involved in Lift Works or Escalator Works; Part 5 – Disciplinary Proceedings; Part 6 – Appeals; Part 7 – Administration and Enforcement; and Part 8 – Repeal, Transitional and Savings Provisions, and Consequential or Related Amendments.

²⁸ Development Bureau, *Legislative Council Brief: Lifts and Escalators Bill* (Hong Kong: 2011).

²⁹ Department of Justice, *Legislative Drafting in Hong Kong* (Hong Kong: 2001).

³⁰ The Chief Executive is the head of the government of Hong Kong. The Executive Council, being an organ for assisting the Chief Executive in policy-making, is consulted before making important policy decisions, introducing bills to the Legislative Council, making subordinate legislation or dissolving the Legislative Council.

³¹ This is to bring the qualification standards of professionals responsible for lift and escalator works up to a level compatible with other legislation for building safety control.

³² At present, any person considered by the DEMS to be qualified to carry out lift works or escalator works may be registered as a lift contractor or escalator contractor under the LESO. The factors to be considered by DEMS for granting such registration status are not expressly stated in the LESO.

Lift workers and escalator workers – Competent workers who have obtained the recognition status via route 2 (about 75% in total)³³ may lose their status of being competent lift workers or competent escalator workers when they are no longer employed by a registered contractor. To replace this employment-tied arrangement, the Bill introduces a registration system whereby qualified lift or escalator workers may apply for registration as registered lift or escalator workers based on their academic attainment, training and experience. Experienced workers who have passed a trade test for lift works or escalator works and who have the required experience are also eligible to apply for registration. Existing competent lift workers and competent escalator workers will also be eligible to apply for registration under the Bill.

Increasing the penalty levels of offences

The maximum fine and imprisonment period for safety related offences under the LESO are \$10,000 and 12 months, respectively. To achieve the necessary punitive and deterrent effects, the maximum fine will be increased to \$200,000 whilst the maximum imprisonment period will remain at 12 months.

Extending the coverage of the legislation

It is considered necessary to extend the application of the LESO to the Government, the Housing Authority³⁴ (HA) and the consular offices as responsible persons.³⁵ As a result of this change, management companies of buildings and management staff of an organization that have the management or control of lifts or escalators will fall into the definition of responsible persons. Lifts and escalators in public housing estates under the management of the HA will be brought under the control of the enhanced regulatory system on par with those in the private sector.

Enhancing operation and enforcement

The DEMS will be conferred the power to issue improvement orders for expediting the rectification of non-compliance with statutory requirements and practices, allowing more flexibility for the responsible persons to schedule the examination of lifts and escalators without affecting safety, introducing a new use permit containing concise information of the lift or escalator such as expiry date of examination to better promote user surveillance and requiring responsible persons and registered contractors to retain maintenance records to facilitate accident investigation. The Secretary for Development³⁶ will also be empowered to make regulations the power of which rests with the Chief Executive under the LESO.

³³ Experienced lift and escalator workers satisfying either (i) the stipulated academic, training and experience requirements – route 1; or (ii) in case of inadequate academic qualification, the stipulated employment requirement with registered contractors who recognise that they have acquired sufficient experience or training to carry out lift or escalator works competently without supervision are competent lift workers or escalator workers under the LESO - route 2.

³⁴ Established in April 1973 under the Housing Ordinance (Cap 283), the Housing Authority is a statutory body. It develops and implements a public housing programme which seeks to achieve the government's policy objective of meeting the housing needs of people who cannot afford private rental housing.

³⁵ Under the Bill, a 'responsible person' means (a) the owner of the lift or escalator; or (b) a person who has the management or control of the lift or escalator.

³⁶ The Secretary for Development is responsible for planning, land development and public works related development policy in Hong Kong.

As can be seen from the above, the proposals regarding the restrictions on the separate provisions of maintenance and examination services and the appointment of a third party quality assurer, which received only fair supports from the surveyed respondents, were not incorporated into the Bill. According to Annex B of the Legislative Council Brief,³⁷ the incorporated amendments will give rise to the following implications.

Financial Implications

New fees will be made available from services in relation to an application for registration as a lift worker or escalator worker, an application for renewal of registration of a registered person under the Bill, and an application for the issue of a duplicate of a permit, certificate of registration or registration card. It is estimated that the new registration/duplicate application fees will generate about \$2.6 million in its initial year of operation whereas renewal application fees will generate about \$2.6 million every five years thereafter. Around \$1.6 million per year will be generated from the processing of applications for use permits for lifts and escalators owned by the HA and consular offices.

The additional funding required for remunerating the chairman and members of the disciplinary board and appeal board, as well as the legal charges and other expenses associated with the disciplinary and appeal cases will be absorbed from within the existing resources of the Electrical and Mechanical Services Department (EMSD).

Civil Service and Productivity Implications

It is anticipated that there will be an increase in workload for processing the increased registration and registration renewal applications of lift/escalator contractors, engineers and workers. There will also be an increase in workload for extending the regulatory measures to the lifts and escalators of the Government, the consular offices and the HA. The EMSD will absorb the additional workload within the approved resources and no additional staff will be required for implementing the legislative proposal.

Economic Implications

The new requirements will bring about improvement in the efficiency, safety and maintenance standard of lifts and escalators, and thus reduction in loss of lives and properties associated with lifts and escalators accidents. Whilst there will be additional costs for providing training to the engineers and workers, and increased workload for enhancing overall maintenance quality, it was estimated that the additional cost burden should be less than \$10 per annum per household and commercial establishment.³⁸

As noted above, tightening the regulatory control over maintenance and examination of lifts and escalators will help minimise the occurrence of accidents. But it will also incur more institutional costs, including those on the government for formulating the regulatory measures, surveillance of violations and prosecution of offenders etc; and those on the parties under control for taking actions to comply with the requirements.³⁹ A proper balance between these two sides, if achieved, can result in an optimum total cost to society, i.e. T_0 in Figure 1.

³⁷ Development Bureau, *Legislative Council Brief: Lifts and Escalators Bill* (Hong Kong: 2011).

³⁸ The estimation was made by a consultant commissioned by the government for conducting a regulatory impact assessment of the proposed amendments.

³⁹ J. Lai and F. Yik, "Law and building services maintenance in Hong Kong" (2004) 11 *Transactions of The Hong Kong Institution of Engineers* 7.

In reality, however, it is difficult to obtain a precise estimate of the institutional cost (I) because the extent of regulatory enforcement would not be known when drafting the legislative amendments. After implementation of the amendments, it would be hard to ascertain the actual enforcement cost. Changes in potential loss (P) would not be certain either. One could hardly assess exactly how the level of potential loss would vary with the level of regulatory control. If the existing level of control is S_1 , of which the total cost T_1 equals $I_1 + P_1$, tightening the control would be a positive move for reducing the total cost towards an economic optimum. In case the existing level of control is already high (e.g. S_2), in reverse, the extent of the control should be reduced provided the corresponding saving in institutional cost ($I_2 - I_0$) outweighs the increase in potential loss ($P_0 - P_2$).

Precedents and Discussions

The legal system of Hong Kong was modeled on the English common law system.⁴⁰ Under this system, legislation and decisional law are two principal legal sources, and the corresponding literary sources by which law is recorded and preserved are: the statute and the law reports which record the judgments made for the trials in courts. Besides the statutory requirements, therefore, the governance imposed by the doctrine of precedent must be observed.

As identified in an earlier study,⁴¹ the damages of personal injuries arising from mismanagement in buildings, which were decided based on the common law principles in tort, can be substantial. A comprehensive search from the database of the Hong Kong Legal Information Institute⁴² found that as long as maintenance, management and use of lifts and escalators are concerned, there are two important precedents of personal injury, namely: *Kam Wai Ming v MTR Corporation Ltd & another* (unreported, DCPI 408/2002) and *Poon Kwok Wing Ernest and Airport Authority Hong Kong* ([2010] 3 HKLRD 354, CACV 385/2008). Their law reports were reviewed and the key findings are as shown in the following.

Kam Wai Ming v MTR Corporation Limited & CNIM-Hong Kong Limited

In this case, the plaintiff was a 29-year-old chef who was employed in the kitchens of the Marriott Hotel at Pacific Place. In making his way to work and whilst travelling down an escalator at Tsuen Wan MTR Station, the escalator unexpectedly stopped, causing the plaintiff to roll down the escalator. He came to a stop on about the tenth step from the bottom of escalator, having dislocated his right shoulder during his fall. He brought this action for damages for personal injury and other consequential losses. The defendants denied negligence and also pleaded contributory negligence on the part of the plaintiff in not holding onto the handrail as he rode the escalator.

After considering the evidence submitted by the parties in dispute (Table 4), the judge identified three candidates that might have caused the stoppage of the escalator: first, a trapped foreign body; second, a heavy force, like a large man jumping onto the comb plate or crossing over it with a heavy suitcase or other 'cargo' such as a trolley; and third, an over-sensitive CPL switch. Whilst the first candidate was eliminated, the judge could go no further but said that the evidence was equivocal as to both of the other two.

⁴⁰ P. Wesley-Smith, *An introduction to the Hong Kong legal system*, 3rd edn (Hong Kong: Oxford University Press, 1998).

⁴¹ H.F. Leung, "The effect of personal injuries claims as a result of mismanagement of multi-storey buildings on property investment in Hong Kong" (2003) 21 *Facilities* 28.

⁴² Hong Kong Legal Information Institute (<http://www.hklii.org>) [Accessed March 22, 2011].

Before making his judgment, the judge made a series of analyses, including: (a) the first defendant had in place for the repair and maintenance of the escalator and for the vast number of escalators which were in use all over the MTRC's network; (b) the second defendant was one of the world's leading manufacturers of such equipment (i.e. the escalator); (c) the first defendant had, sensibly, contracted the second defendant to do the servicing of this equipment; (d) the requirements of the LESO were considered, and it was found that the requirements of the LESO and its code of practice had been fully complied with; (e) the second defendant employed a substantial team of 'competent' and 'experienced' technicians to carry out the service and maintenance work; (f) the yearly, half-yearly and weekly inspection reports showed that the statutory inspection and maintenance works had been fully complied with; (g) three possible causes for the stoppage of the escalator, as described above, were considered but no conclusion could be drawn as to which of them was the real cause; and (h) there were no escalator cases in Hong Kong to which reference could be made but some found from Canada, namely *Naicken v Edmonton City* [1997] AR Lexis 1507; 197 AR 331 and *Empire Company Limited v Sheppard*, 103 ACWS (3d) 436, were considered useful.

In determining whether or not the plaintiff had hold of the handrail when the escalator stopped, the judge considered that the plaintiff on the issue was unconvincing. His exaggeration detracted from his credibility on the main issue. On the contrary, Mr Chan, the station master, was believed to be an excellent witness. His evidence was accepted.

Referring to the reasons given by Langston J in *Naicken v Edmonton City* [1997] AR Lexis 1507; 197 AR 331, the doctrine of *res ipsa loquitur* was considered not applicable to the case, and the fact that the escalator stopped unexpectedly could not give rise to the inference that it did so by virtue of negligence of the defendants. The judge was satisfied with the fact that the plaintiff did not have hold of the handrail was the proximate cause for his injuries. At the time of this writing, there were no appeals to this decision.

Poon Kwok Wing Ernest and Airport Authority Hong Kong

Mr Poon, the plaintiff, was employed by the Airport Authority as a kerb supervisor at the material time of the accident. On 9 April 2001, the plaintiff fell from the escalator, which he claimed was suddenly stopped when he was travelling on it. Consequently, he was injured. In the pleaded particulars of negligence, the plaintiff also relied on improper repair and/or maintenance of the escalator by the defendant. Table 5 shows the appeal history of this case as recorded by the Legal Reference System.⁴³

According to the law report of this case (HCPI305/2004; judgment on 30 June 2006), the plaintiff appealed against the order given by Master Kwan on 20 January 2006. That order, besides dismissing the plaintiff's application for specific discovery of 13 classes of documents, refused his application for leave to adduce expert evidence on liability. After laying down the grounds for refusing the appeal to the former, Suffiad J (Judge of the Court of First Instance) also rejected the latter part of the appeal and, among the reasons given, he specifically pointed out that the cause of the escalator's stoppage could hardly be a matter for an expert, particularly when the expert was not at the time present at the scene.

After the above failure, the plaintiff lodged a further appeal, of which the judgment was handed down at the Court of Appeal on 28 February 2007 (CACV 257/2006). Concurring with the view of Suffiad J, Hon Rogers VP mentioned that any inspection at that stage would be of very little purpose as it was nearly six years since the accident occurred and that the court should not permit expert evidence unless it is necessary.

⁴³ Legal Reference System (<http://legalref.judiciary.gov.hk>) [Accessed March 22, 2011].

In *Poon Kwok Wing Ernest and Airport Authority Hong Kong* (HCPI305/2004, judgment on 18 November 2008), the plaintiff acted in person to claim damages from the defendant. In his analysis, the judge considered Mr Ma, being a registered escalator engineer employed by CNIM responsible for the repair and maintenance of all the escalators in the airport, an incredible witness. The main reasons for this include: (i) Mr Ma failed to give a satisfactory explanation as to why he did not sign on the repair and maintenance record, or why the Occurrence Report prepared by him only mentioned that the technicians arrived at the scene but was silent on his arrival; and (ii) when he was asked what conclusion CNIM drew from the fact that within one year the six escalators stopped 30 times, Mr Ma gave a surprising answer that he came to know about that fact only when he was in court.

Despite his reservations about the defendant's evidence, the judge, considering the exaggeration and falsity in the plaintiff's evidence on quantum, concluded that the plaintiff's allegation that he was firmly holding the handrail of the escalator is unbelievable. The judge further considered whether the escalator was maintained with a reasonable standard of care and, in this connection, he pointed out that the statutory duties imposed by the LESO on owners of escalators are not wholly delegable. Given that the escalator connected two floors which were two levels apart (as compared to two consecutive floors), the judge opined that the occupier, i.e. the Airport Authority (being the management authority), should take extra care of its visitors. As there was no evidence of other unusual circumstances (e.g. insufficient stopping distance) and the fact that the escalator suddenly stopped could not lead to the inference that the defendant was negligent, the defendant was found not in breach of any duty of an employer and/or the common duty of care imposed on an occupier of the premises, and so the claim was dismissed.

In the appeal case (CACV385/2008; judgment on 1 April 2010), the appellant, acted in person again, claimed that the Authority was negligent and/or in breach of the common duty of care imposed upon an occupier, and therefore should be liable for his injuries. In his claim, the appellant complained that at trial the judge did not give him the opportunity to present a closing submission but accepted in full the written closing submission of the opposite party. Further to pointing out that the trial judge did say that at the time of the accident he was holding onto the handrail of the escalator, the appellant submitted that the conclusion reached by the trial judge showed that the cause of the accident was negligence in carrying out the repair or the maintenance of the escalator.

The above conclusion that the appellant alleged, in fact, was not congruent with that made by the trial judge, which reads: 'Even if the examinations had been conducted negligently in that they failed to ascertain the reason(s) for the stoppages, this would not necessarily have been the cause of the plaintiff's injuries.' Though knowing this statement of the trial judge's, the Justice of Appeal did not understand why it was held. Moreover, he considered that if the Authority and/or its escalator maintenance contractor had tried their best to find out what caused the escalator to stop suddenly for no reason, they should have been able to ascertain the cause(s) and take remedial measures to avoid the accident. If, after examination, they still could not ascertain the cause(s), then caution might require that the escalator involved in the accident be suspended from use.

Noting that the trial judge found that at the time of the accident Mr Poon was not 'firmly holding' the handrail of the escalator, the Justice of Appeal commented that not 'firmly holding' the handrail is not equal to not having hold or not having a grip of the handrail at all.

Having considered the facts of the case, particularly the fact that neither the Authority nor its escalator maintenance contractor could produce evidence accepted by the Court that repair and maintenance had been done at regular intervals to the escalator involved in this accident, the Justice of Appeal decided that the only reasonable inference was that the

Authority and/or its maintenance contractor was guilty of negligence. The Authority was held liable for its negligent conduct and the total damages payable to the plaintiff was \$928,897.

Lessons Learnt

Both of the above precedents were about personal injury claims arising from sudden stoppage of escalator. Although the safe working of escalators is governed by the same set of statutory requirements as stipulated in the LESO, the judgments held for the two precedents are entirely opposite. Compliance with the statutory maintenance requirements for escalators, such as monthly and half-yearly inspections, is definitely a must. Keeping proper records of such maintenance activities, as in the former precedent, evidenced that the owner/operator of the escalator had taken reasonable care of their visitors. This is a favourable point that a judge would take when making judgment on this kind of disputes.

Whilst the statutory maintenance activities required by the LESO were carried out in the latter precedent, the fact that the registered escalator engineer did not sign on the maintenance record and his ignorance of the frequent escalator stoppages gave rise to the decision that he was not a credible witness. Even if the cause(s) for the stoppages could not be ascertained, the owner/operator of the escalator should exercise a reasonable duty of care to suspend its use until the problems were fixed.

Request for adducing expert evidence, if not sufficiently justified, as in the latter precedent, would be turned down. Even if it were allowed, as held in *Luk Wing Nin v Chevalier (HK) Ltd and Another* [2006] HKCFI 410, expert opinions are only as good as the factual basis upon which the opinions are founded. In that case, it was commented that both experts were led into theorizing and hypothesizing how the deceased could have ended up at the bottom of the lift pit, at times even crossing over into the realms of speculation.

In the latter precedent, the plaintiff failed initially when he was represented by legal practitioners. In the subsequent appeals, he acted in person and, eventually, succeeded in claiming damages for the injuries he suffered from the sudden stoppage of the escalator. Whether this is a factor leading to the distinct judgments, nevertheless, is not known from the law reports.

Conclusion

Hong Kong is a metropolis where high-rise buildings are ubiquitous and the safe working of lifts and escalators is crucial to numerous end users there. Despite the clear statutory requirements of the LESO and the definitive powers vested with the enforcing authority for ensuring safety of lifts and escalators, the spate of accidents in recent years triggered the public concern about their maintenance and management. The proposed amendments to the LESO, which are meant to tighten the existing regulatory control, were generally supported by the stakeholders who responded to the public consultation and those who participated in the survey of the professional institutions. For consultations of this kind in future, closer collaboration between the government and the institutions should be encouraged, which would help publicise the amendment proposals and enable collection of more responses from the stakeholders.

With only fair supports given by the stakeholders to the separate provisions of maintenance and examination services and the appointment of a third party for assuring service quality, these proposed amendments were not incorporated into the new Lifts and Escalators Bill. Among the factors contributing to the divisive views of the stakeholders, the possible reluctance of the existing trade practitioners to upgrading themselves to meet the new qualifications requirement is an issue to be addressed in implementing the Bill.

The primary purpose of tightening the regulatory control over lifts and escalators, undoubtedly, is to enhance safety. Ascertaining the resultant costs and benefits of the amendments, however, is not straightforward. Depending on the variation of the associated institutional cost and potential loss, a change in regulatory control may or may not minimise the total cost to society. The actual effect could only be realised after the change.

Whereas the essential statutory requirements on lifts and escalators safety are explicitly stated in the statute, application of the common law principles, as illustrated by the reviewed precedents, is at times elusive. In any case, the stakeholders, including owners, practitioners and end users of lifts and escalators, should exercise reasonable duty of care in maintenance and use of these facilities in order to avoid undesirable incidents.

Manuscript

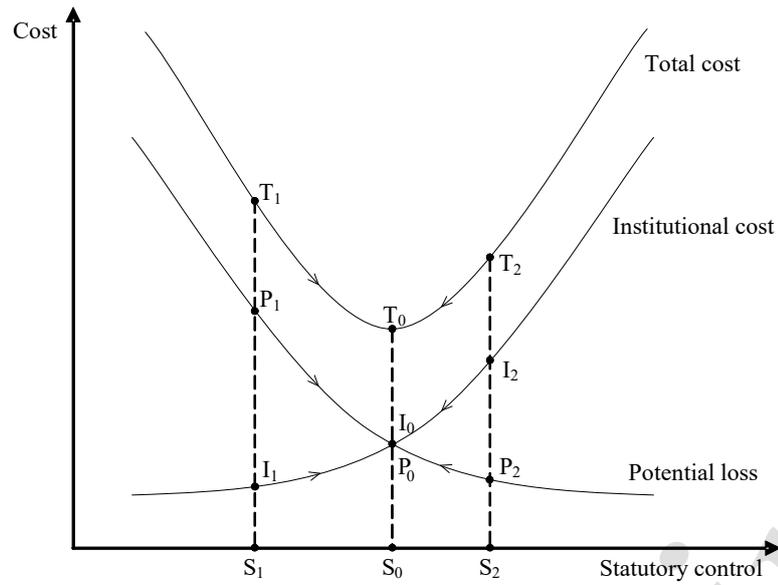


Figure 1: Costs variation with statutory control

Table 1: Statutory maintenance and examination works for lifts and escalators

Maintenance / examination tasks	Escalator	Lift
Inspecting, cleaning, oiling and adjusting	Monthly	Monthly
Examination	Half-yearly	Yearly
Testing of safety equipment	Yearly	Yearly
Full load safety test, overload device and brake tests	-	5 yearly

Manuscript

Table 2: Number of lift incidents

Main cause	Year			
	2008	2009	2010	2011 (Jan to May)
Passenger behaviour	166	204	209	85
Lift equipment fault	36	42	35	10

Manuscript

Table 3: Summary of survey results

Consulted Items	Government	BSOMES
Scope of the LESO and duties of lift and escalator owners:		
1 The continuation of the present regulatory arrangement of the LESO applicable to the lifts and escalators installed in public housing estates and government premises	71.7 (A) 20.1 (D) 8.2 (N)	57.0 (A) 16.7 (D) 26.3 (N)
2 The continuation of the statutory duties of lift and escalator owners, who have a shared responsibility in ensuring lift and escalator safety	87.8 (A) 8.3 (D) 3.9 (N)	83.3 (A) 4.4 (D) 12.3 (N)
Registration and renewal requirement for lift and escalator contractors:		
3 The introduction of new requirements for the registered lift and escalator contractors to employ adequate and suitably qualified professionals, technicians and skilled workers	73.7 (A) 24.3 (D) 2.0 (N)	92.1 (A) 2.2 (D) 5.7 (N)
Upgrading of the qualification requirements for lift and escalator engineers:		
4 The proposal for upgrading the qualification requirements for registration as lift and escalator engineers	56.3 (A) 38.9 (D) 4.8 (N)	86.8 (A) 3.1 (D) 10.1 (N)
5 The proposed transitional arrangement for registration as lift and escalator engineers	53.4 (A) 34.7 (D) 11.9 (N)	61.8 (A) 6.1 (D) 32.0 (N)
6 (i) Not to impose a restriction on all lift and escalator owners in the selection of registered contractors and engineers for providing maintenance and examination services separately	62.8 (A) 29.7 (D) 7.5 (N)	55.5 (A) 21.4 (D) 23.1 (N)
(ii) Not to require all lift and escalator owners to appoint a third party for providing an independent quality assurance service	55.8 (A) 36.2 (D) 8.0 (N)	50.0 (A) 27.0 (D) 23.0 (N)
Introduction of a registration system for lift and escalator workers:		
7 The introduction of a registration system for lift and escalator workers and the transitional arrangement	74.8 (A) 17.7 (D) 7.5 (N)	88.8 (A) 1.3 (D) 9.9 (N)
Streamlining of regulatory processes related to the display of certificate, issue of improvement notice and disciplinary proceedings:		
8 The proposed arrangement to display safety label after periodic examination and testing of lifts and escalators	61.9 (A) 33.1 (D) 5.0 (N)	75.7 (A) 9.6 (D) 14.8 (N)
9 The proposed change of the issuance of improvement notices to a statutory arrangement and imposition of sanctions for those who fail to comply with the requirements specified in the notices	74.6 (A) 19.3 (D) 6.1 (N)	78.6 (A) 3.9 (D) 17.5 (N)
10 The proposed streamlining of the mechanism on disciplinary proceedings	61.2 (A) 28.8 (D) 10.0 (N)	71.9 (A) 4.3 (D) 23.8 (N)
Increase in penalty levels and sanctions under the LESO:		
11 The proposed increase in the penalty level of offences	67.3 (A) 25.3 (D) 7.4 (N)	78.8 (A) 5.2 (D) 16.0 (N)

Notes: A - Agree/support; D - Disagree/not support; N - No comment (Government), Neutral (BSOMES). Figures are in percentages.

Table 4: Documentary evidence and records

Documentary evidence	Records
1. A yearly inspection that took place on 23 November 2001	There were no mechanical problems with the escalator. It was functioning properly and was in safe working order.
2. A half-yearly inspection that took place on 27 May 2001	The escalator had no defects. It functioned normally and was in safe working order.
3. Weekly inspection reports on 1, 8, 15 and 29 April 2002	Combs, fault indication panel and emergency stop button of the escalator, amongst other working parts, were in good working order.
4. Undesired event report compiled by Mr K Y Chan, the station master who was the first on the scene	The escalator had stopped, with no indication of any fault.
5. Form A - an incident report form of MTR	The MTR's maintenance team and the second defendant's staff had confirmed that the stopping had been caused by the CPL (code plate switch) being too sensitive.
6. MTR technical investigation report	The common safety switches were normal, which description includes the CPL.
7. The second defendant's Log Book	A handwritten record of 'CPLR floor plate switch check'. There was no reference to it being too sensitive, and the braking distances were within proper parameters.
8. Photographs and a diagram	At the top and bottom of the escalator, there was a comb for trapping foreign objects from entering the system.

Table 5: Appeal history of the case

Case number	Date	Reported in	Remarks
CACV385/2008	01/04/2010	[2010] 3 HKLRD 354	-
	01/04/2010	[2010] 3 HKLRD 345	-
HCPI305/2004	18/11/2008	[2008] 1 HKCLRT 359	Appeal allowed: see CACV385/2008 dated 1 April 2010.
	18/11/2008	[2008] 1 HKCLRT 377	-
	30/06/2006	-	Appeal dismissed: see CACV257/2006 dated 28 February 2007 (reported in [2007] HKCA 87).

Manuscript