

By post and email at bc_04_16@legco.gov.hk

9 June 2017

Council Business Division 1
Legislative Council Secretariat
Legislative Council Complex
1 Legislative Council Road, Hong Kong

[Attn: Ms Michelle NIEN]

Dear Ms NIEN

**Bills Committee on Waterworks (Amendment) Bill 2017
Second Meeting on Monday, 12 June 2017**

The Hong Kong Institution of Engineers (HKIE) supports the Administration to review and update the Waterworks Ordinance (Cap. 102) (WWO) and Waterworks Regulations (Cap. 102A) (WWR) to ensure and enhance the water safety.

As the only institution by statute representing the engineering profession in Hong Kong, the HKIE has previously provided views to the Administration regarding the episodes of lead in drinking water found in public housing estates. The HKIE has also set up a Task Force on the Study of The Proposal for The Amendments to The Waterworks Ordinance and Waterworks Regulations (Task Force) to study the subject matter.

Regarding the captioned Second Meeting of the Bills Committee on Waterworks (Amendment) Bill 2017, the Institution is pleased to provide herewith the views and suggestions as prepared by the Task Force on the subject for your consideration.

Thank you for your attention.

Yours sincerely



Ir Joseph CHOI Kin Hung
President
The Hong Kong Institution of Engineers

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Appendix

Legislative Council Bills Committee on Waterworks (Amendment) Bill 2017 (Second meeting on Monday, 12 June 2017)

Views on Waterworks (Amendment) Bill 2017

The Hong Kong Institution of Engineers (the HKIE) would like to provide our views to the Bills Committee on Waterworks (Amendment) Bill 2017 of the Legislative Council regarding the concerned Bill. Taking reference to the Water Supplies Department (WSD)'s *Consultation Paper on Amendments to Waterworks Ordinance (Cap. 102) (WWO) and Waterworks Regulations (Cap. 102A) (WWR)* issued in September 2016, as well as the Legislative Council Brief on Waterworks (Amendment) Bill 2017 (*DEVB(CR)(W)1-10/49*), the HKIE elaborates our views on the subject matters in the ensuing sections.

Consultation Paper on Amendments to Waterworks Ordinance and Waterworks Regulations

2. The HKIE welcomes the WSD's carrying out a holistic review of the WWO and WWR revamping the legislative framework to cope with, *inter alia*, the changes and long-term development of the trade.
3. The HKIE also notes and endorses the good intention of the WSD in prioritising amendments where and when ready as a speedy response to issues identified by the Commission of Inquiry into Excess Lead Found in Drinking Water, in particular, the disparity of the literal meaning arising from the wordings of section 15 of WWO and the policy intent.
4. The HKIE agrees, for all intents and purposes, the industry practice does not solely rely on Licensed Plumbers (LPs) to "physically" carry out all the works involved in plumbing and fire services work and that introducing grades of skilled workers to assist is essential. Taking the benefit to include the pool of workers registered and trained through Construction Workers Registration Board (CWRB) of Construction Industry Council (CIC) under the Construction Workers Registration Ordinance (Cap. 583) (CWRO) in related designated trades is an obvious and natural option.
5. That said, it was the experience of the HKIE that there is always a caveat to remind oneself for being too focused on examining a particular section that might ultimately defeat the quest for a holistic review.
6. The primary concern of the HKIE is that the proposed amendments only enlarge the designated workforce to include categories of workers and their respective qualifications that would assist a LP to carry out work under instructions and supervisions. At this juncture whether there would be a subsequent examination on that of the LP and its qualification is not known.

7. The HKIE issued the *Report on the Study of Lead in Drinking Water in Public Housing Estates*¹ in November 2015 and concluded that one of the downstream botches was assigning Clerks of Works primarily trained in civil works instead of Building Services Inspectors to monitor and supervise plumbing installations in housing estates developments. Building services engineers were responsible for the design work but were not assigned to monitor the execution.

8. The HKIE wishes to pause here and points to the development of our construction industry. There is no need to mention Hong Kong is one of the leading cities in the world in turning out sophisticated and technological advanced infrastructures, superstructures and buildings. The works from engineers together with other professionals are essential for these accomplishments evidenced by many of our projects and works winning awards on the global front.

9. It is obvious that all of us have the intention and the will to continue and excel this trend. In this regard, a holistic revamping of WWO and WWR must take into our quest of future leading-edge advancements. Clear demarcations and classifications of the workforce in plumbing and fire services should be one factor we need to address.

10. The HKIE notes a pilot scheme was introduced by the WSD requiring professional engineers to enhance the inspection of underground pipes and waterworks.²

11. Also, the HKIE understands the WSD Legislative Review Unit has indicated further legislative measures will be imposed in design, inspection and approval of the specified plumbing works in which Registered Plumbing Professionals will be introduced immediately after the enforcement of the said Amendment Bill.

12. Under the backdrop of the above developments, the HKIE believed the views of our previous submissions to the Administration (*see Annex*) on the need to involve professional engineers were taken on board.

13. But the HKIE did not find anything in this nature was mentioned in the Legislative Council Brief on Waterworks (Amendment) Bill 2017 (*Ref. DEVB(CR)(W)1-10/49*) starting from a defined term in the interpretation of Part 1 of the Schedule added under WWO.

14. This brings us back to our concern of whether this is something already in due progress or if not should we look at the composition, assigned duties, shares of responsibility of the workforce as a whole in order to meet the aim of carrying out a holistic review?

15. The HKIE also notes the Legislative Council Brief on Waterworks (Amendment) Bill 2017 (*Ref. DEVB(CR)(W)1-10/49*) stating that the Administration has consulted the professional bodies on the proposal and obtained general support from them. If the general support included the opinion of the submissions from the HKIE in this regard, the HKIE must reiterate we did not.

¹ The Report can be downloaded from the following link:
[http://www.hkie.org.hk/Docs/communityservices/opinions/2015-2016/Report-Lead-in-Drinking-Water-Public-Housing-Estates\(2%20Nov%202015\).pdf](http://www.hkie.org.hk/Docs/communityservices/opinions/2015-2016/Report-Lead-in-Drinking-Water-Public-Housing-Estates(2%20Nov%202015).pdf)

² WSD Circular Letter No. 2/2016 – *Inspection and Approval of Plumbing Works dated 3 June 2016*

16. On a related note, with a larger and ready workforce sourced from CWRB of CIC, it is viable to increase the benchmark entry requirement of LPs while maintaining the current pool of registered LPs.

17. In line with the purpose of amending WWO and WWR, viz. to cope with the changes and long-term development of the trade, it is essential revamping the competence of designated persons ultimately responsible in discharging the duties prescribed by WWO and WWR.

18. Hence, the HKIE considers there is a need to distinguish the qualification of a LP from that of a skilled worker for the “plumber” trade division according to Schedule 1 under the CWRO as the latter does not have that kind of qualification attainment required to carry out design, supervision and monitoring work of projects either with the technical complexity of tall buildings or the managerial skills involved in massive housing estates.

19. In this connection, the *Footnote #10* on page 4 of the concerned Legislative Council Brief could cause confusion to the general public as since a LP defined by WWO could be registered as a skilled worker under CWRO that the reversal is apparently if not also true.

20. With a rough estimate of about 2,000 building services engineering professionals and 500 mechanical engineering professionals that have been trained, involved or with relevant experience in plumbing and fire services work, together with overseas recognised professionals at par with the standards of the HKIE, increasing the pool of LPs from approx. 3,000 to 4,000 or even 4,500 within the next three years is quite feasible.

21. In addition, engineering professionals are bound by professional obligations, disciplinary actions, and the requirement of continuing professional development in keeping abreast of the latest technologies and codes of best practice to remain qualified.

22. Under the above premises the HKIE would agree the proposal of requiring LPs, who have sought permissions under section 14(1) of WWO to ensure that the plumbing works covered by that permissions under section 14(1) of WWO are in compliance with the requirements in section 14(3) of WWO.

23. With a clearly defined responsibility and up-lifting entry standards of LPs, the HKIE firmly believes that a repeat of fiasco similar to the incident of excess lead found in drinking water could be prevented.

Specific Comments on Waterworks (Amendment) Bill 2017

24. In particular, the HKIE would like to point in details our specific comments on the Waterworks (Amendment) Bill 2017.

Section 13B(b)

25. The HKIE presumes “*the method and manner*” can be summarily referred to a part or parcel within the scope of the training and skill the person as attained.

Section 14

26. The HKIE considers this is a reasonable and sensible clause to ensure a good balance of facilitating a smooth progress for construction work and ensuring quality works compliance for public protection. Sections 14(6) & (7) rightly put a higher onus on the person giving out instruction and carrying out supervision.

Section 15A

27. The HKIE wishes to refer to similar provisions under section 49 of the Electricity Ordinance (Cap. 406), and proposes that for entry, if forced, to privately owned premises, whether non-domestic or otherwise, without permissions from occupiers must be accompanied by a Law Officer of suitable grades. The example cited by the WSD in the *Consultation Paper on Amendments to Waterworks Ordinance (Cap. 102) (WVO) and Waterworks Regulations (Cap. 102A) (WWR)* issued in September 2016 regarding non-domestic premises (i.e. “*such as construction sites where plumbing works are being carried out...*”) is not relevant as compared to private properties.

Section 15A(1)

28. The HKIE opines the “*authorized officer*” must reasonably believe that an offence had or would have made or about to be made for forced entry.

Schedule - Part 1

29. The HKIE opines that construction work also involves design, demonstration, supervision, testing and commissioning, and ensuring work in proper progress and the completed work is fit for the purpose and according to the design intent. The nature of this type of work should fall within the ambit of engineering professionals with qualification at par at least with Level 4 or Level 5, depending on the scope and nature of the work.

30. The HKIE had earlier raised concerns to the former Construction Workers Registration Authority (CWRA) on the term “*personally carry out*” under section 3 of CWRO. The HKIE opined the word “*personally*” means in person and for professionals, it would imply personal engagement and responsibility. Hence “*personally carrying out*” would suggest a professional carrying out acts in person and/or acting in one’s personal capacity to the extent being professed. This being the case, a professional engineer giving instructions, supervising, witnessing or even remaining approvingly acquiescent, to work carried out by others under his or her supervision would deem to be personally engaged in carrying out duties and work. CWRA held a different interpretation and advised the HKIE that the phrase “*personally carrying out*” would mean a person carrying out work “*hands on*”, but added that demonstrations made by engineering

professionals would not be considered as working “hands on”. This concern of discrepancies was “relieved” by a statement of legislative intent that MHKIE, AMHKIE and Graduate Members under Scheme “A” Training were exempted from CWRO registration if and only if carrying the type and kind of work in according to the respective qualifications and disciplines. The HKIE also notes from the *Administrative Guidelines on the Applicability of the Registration Requirements to Professional and Technical personnel (December 2016)* issued by CIC that the CWRO is targeted only at the construction workers and NOT at the professional and technical personnel “*who themselves are at the up stream of the hierarchy directing the management, making the adjustment, assessment and supervision of construction work (unless they work in the capacity as a general worker...)*”.

31. The HKIE, in this connection, opines that it is conducive for the WSD to clearly incorporate the aforementioned spirit of industry practice as reflected by the CWRO Administrative Guidelines in the proposed amendments. Albeit, quite unfortunately and regrettably, different ordinances would require the engineering professionals to be registered either as workers, assessors, qualified persons, or a LP in this instance.

32. On the other hand, the HKIE welcomes the proposed amendments setting a path to cure the need and burden for workers to be registered under the two different Ordinances to carry out the same type of work as currently required for Registered Electrical Workers under the Electricity Ordinance.

Proposed Amendments from the HKIE

33. In the avoidance of any possible doubts, for clarity and the WSD as a harbinger to align related but intervening clauses among the maze of construction related ordinances, the HKIE proposes the followings to be included in the proposed amendments:

- (I) For the construction, installation, maintenance, alteration, repair or removal of a fire service or the installation of a meter, a person must be duly qualified to the satisfaction of the Water Authority (WA).

For the purpose of this section, a person is deemed qualified if –

- (a) A person is a member of the Hong Kong Institution of Engineers under the HKIE Ordinance (Cap. 1105)
 - (i) the class of Corporate Member of Building Services Discipline;
 - (ii) the class of Corporate Member of Mechanical Discipline with relevant experience;
 - (iii) the class of Associate Member of Building Services Discipline; or
 - (iv) the class of Associate Member of Mechanical Discipline with relevant experience

- (b) A person is a registered worker under the Construction Workers Registration Ordinance (Cap. 583)
 - (i) a registered skilled worker for a designated trade division;
 - (ii) a registered skilled worker (provisional) for a designated trade division;
 - (iii) a registered semi-skilled worker for a designated trade division;
 - (iv) a registered semi-skilled worker (provisional) for a designated trade division; or
 - (v) a registered general worker
- (II) For the construction, installation, maintenance, alteration, repair or removal of an inside service, a person must be duly qualified to the satisfaction of the WA.

For the purpose of this section, a person is deemed qualified if –

- (a) A person is a member of the Hong Kong Institution of Engineers under the HKIE Ordinance (Cap. 1105)
 - (i) the class of Corporate Member of Building Services Discipline;
 - (ii) the class of Corporate Member of Mechanical Discipline with relevant experience;
 - (iii) the class of Associate Member of Building Services Discipline; or
 - (iv) the class of Associate Member of Mechanical Discipline with relevant experience
- (b) A person is a registered worker under the Construction Workers Registration Ordinance (Cap. 583)
 - (i) a registered skilled worker for a designated trade division;
 - (ii) a registered skilled worker (provisional) for a designated trade division;
 - (iii) a registered semi-skilled worker for a designated trade division;
 - (iv) a registered semi-skilled worker (provisional) for a designated trade division; or
 - (v) a registered general worker

Prepared by the HKIE Task Force on the Study of the Proposal for the Amendments to the Waterworks Ordinance and Waterworks Regulations

Ir Peter Y WONG, Chairman
Ir Antonio CHAN Chi Ming, Deputy Chairman
Ir CHUNG Chi Ming
Mr Patrick LEE Wood Wei
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By post and by fax at 2824 0578

3 March 2017

Water Supplies Department
Legislative Review Unit
48/F, Immigration Tower,
7 Gloucester Road,
Wan Chai, Hong Kong

[Attn: Ir Bobby NG Mang Tung, Chairman of Consultative Group of Legislative Review]

Dear Ir NG

Consultation on 水喉工程的良好作業指引的擬議框架 - 僱用或容許訂明人士工作及「指示與督導」的相關要求事宜

Thank you for your email of 23 February 2017 to the Institution on the captioned subject.

The Hong Kong Institution of Engineers (HKIE) would like to reiterate our views in our earlier letter dated 16 November 2016 proposing that the qualified engineering professionals (e.g. Registered Professional Engineers) from relevant engineering disciplines should be included in the authorisation list for waterworks applications from design stage to completion stage of the plumbing and fire services waterworks under the Waterworks Ordinance and Waterworks Regulations (Cap 102 and Cap 102A) to prepare the draft guideline.

The HKIE is of the view that inclusion of relevant qualified engineering professionals for quality control of waterworks throughout the design, construction and completion stages can address and relieve the public concern on the impact of sub-standard plumbing pipework on waterworks.

While the "Designated Person" would need to be included in the provisions of the Waterworks Ordinance and Regulations amendments, in particular, it is also suggested adding the registered gas installers in the "Designated Person" without the need of supervision from a licensed plumber, as registered gas installers are competent for gas water heater installation, service and maintenance including connecting to hot and cold water pipes, and they have long been installing gas water heaters in daily works as well as in construction sites.

Thank you.

Yours sincerely



Ir Joseph CHOI Kin Hung
President
The Hong Kong Institution of Engineers

By post and by fax at 2824 0578

16 November 2016

Water Supplies Department
Legislative Review Unit
46/F, Immigration Tower,
7 Gloucester Road,
Wan Chai, Hong Kong

[Attn: Ir Bobby NG Mang Tung, Team Leader]

Dear Ir NG

Views to Public Consultation on Amendments to the Waterworks Ordinance (Cap. 102) and Waterworks Regulations (Cap. 102A) on Construction, etc. of Fire Services and Inside Services and Updating of Technical Requirements and Pipe and Fitting Standards for Plumbing Works

With reference to the captioned Public Consultation released by your Department in September 2016, I am pleased to provide herewith the views and suggestions of the Institution on the subject for your consideration.

Thank you for your attention.

Yours sincerely



Ir Joseph CHOI Kin Hung
President
The Hong Kong Institution of Engineers

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Enclosure

**Views from the Hong Kong Institution of Engineers to
Public Consultation on Amendments to the Waterworks Ordinance (Cap. 102) and
Waterworks Regulations (Cap. 102A) on Construction, etc. of Fire Services and
Inside Services and Updating of Technical Requirements and Pipe and Fitting
Standards for Plumbing Works**

The Hong Kong Institution of Engineers (HKIE) opines that there is an imminent need to strengthen the review and the inspection processes during the design, construction, alteration or removal of the plumbing and fire services waterworks for the sake of protection of public health in water use.

2. With regard to the concerned Consultation Document, the HKIE agrees in principle to the proposed amendments in respect of clarifying the personnel for carrying out plumbing works and updating the technical requirements and pipe and fitting standards for plumbing works, as mentioned in Item (a) and Item (c).

3. However, as for the proposed amendment (b) *Obligation of the LP who has sought the permission under section 14(1) of the WWO* in the Consultation Document, it is suggested to include the relevant qualified engineering professionals, e.g. Registered Professional Engineer (R.P.E.) from relevant engineering disciplines, in the Authorisation list for waterworks applications from design stage to completion stage of the plumbing and fire services waterworks under the Waterworks supply rules and regulations, including the *WWO 542 : Application for Water Supply/Request for Work to be Carried out by the Water Authority* and the *WWO 46: Application for Constructing, Installing, Altering or Removing an Inside Service or Fire Service*.

4. In fact, it is noted that Water Supplies Department is implementing a pilot scheme as outlined in the *WSD Circular Letter No. 2/2016 – Inspection and Approval of Plumbing Works* dated 3 June 2016, with inclusion of the MHKIE / R.P.E. in Building Services Discipline to enhance the interim inspection on underground pipes and the final inspection of the waterworks. The HKIE supports the scheme and would therefore request the scheme to cover the qualified engineering professionals in relevant engineering disciplines in Hong Kong as appropriate. It is further suggested to consider if it would be suitable to incorporate the scheme in the Cap. 102 and Cap.102A as a statutory requirement.

5. The HKIE hopes that the inclusion of relevant qualified engineering professionals for quality control of waterworks throughout the design, construction and completion stages can address and relieve the public concern on the impact of sub-standard plumbing pipework on drinking water.