2016年1月26日

上午10時02分恢復聆訊

出席人士： 石永泰資深大律師、許偉強大律師及鄭欣琪大律師，為外聘律師，代表食水含鉛超標調查委員會

周慧珠大律師，由銘德律師事務所延聘，代表建造業議會

殷志明大律師，由羅夏信律師事務所延聘，代表香港房屋委員會

李柱銘資深大律師、吳思諾大律師及吳宗鑾大律師，由何謝韋、李偉業律師事務所延聘，代表啟晴邨及葵聯二邨公屋居民代表Lee Pui Yi、Chong So Nga及Lui Hui Ping

王鳴峰資深大律師、陳樂信大律師及羅頌明大律師，由律政司延聘，代表水務署署長

李頌然大律師，由顧增海律師行延聘，代表有利建築有限公司、明合有限公司及伍克明

許佐賓大律師，由的近律師行延聘，代表保華建築營造有限公司

孖士打律師行陳宇文律師，代表瑞安承建有限公司

孖士打律師行梁樂鋒律師，代表中國建築工程（香港）有限公司

石先生：主席，今朝我哋第一位證人就係陶榮先生，係建造業議會嘅。咁就我嘅理解就係Ms Monica Chow就係代表CIC，咁佢哋嘅證供就會由Ms Chow去lead嘅。

主席：去lead，係，好。

周小姐：係，主席、委員，就我係代表CIC嘅。咁CIC今朝早就係有兩名證人，就係Christopher To Wing，陶榮先生，同埋李祥安先生。咁首先我哋就係會call陶榮先生嘅。

建造業議會第一證人：陶榮（建造業議會執行總監）以本地話宣誓作供

周小姐：咁 Mr To 佢個證人供詞就喺 Bundle X1，第 5 頁至第 10 頁嘅。

周小姐主問

問：Mr To, you wish to use English?

答：哦，中文都得嘅。

問：哦，中文都得。陶生，你喺 2015 年 12 月 14 日就做一份英文書面證人供詞嘅。

答：係。

問：咁我而家係會將你嗰份供詞係讀出嘅。

**COMMISSION OF INQUIRY INTO EXCESS LEAD FOUND IN DRINKING WATER, HONG KONG**

**WITNESS STATEMENT OF CHRISTOPHER TO WING, EXECUTIVE DIRECTOR OF THE CONSTRUCTION INDUSTRY COUNCIL**

1. I, CHRISTOPHER TO WING of 15/F Allied Kajima Building, 138 Gloucester Road, Wan Chai, Hong Kong, provide this statement in respect of the Commission of inquiry into Excess Lead Found in Drinking Water **('COI')** and in response to requests 1 to 5 of a letter of request dated 18 November 2015 from Lo & Lo, the Solicitors for the COL

2. I am the Executive Director of the Construction Industry Council **('CIC')** and have held that position since September 2008. Between 1998 and 2008, I was the Secretary-General of the Hong Kong International Arbitration Centre.

**Background information**

3. The Provisional Construction Industry Coordination Board **('PCICB')** was established in 2001 to spearhead industry reform as a result of the recommendation of the 'Construct for Excellence' Report of 2001 (also known as the 'Tang Report') and to pave way for the setting up of a permanent industry coordination organisation.

4. The CIC was set up on 1 February 2007 pursuant to the Construction Industry Council Ordinance (Cap.587) **('CICO')**. On 1 January 2008, the CIC amalgamated with the then Construction Industry Training Authority **('CITA')** which offered trade skills training, trade testing and worker registration services. Upon amalgamation, CITA ceased to exist as an entity.

**COI's Requests**

5. In my role as Executive Director, I am responsible for the overall general management of the CIC. In response to the COI's requests, I have asked my colleagues at the CIC to locate and retrieve information and documents (which cover the period from 2001 to present) in order to respond to such requests.

**Request 1 -** ***'provide a historical account of the plumbing courses and training programmes offered since 2001 (the year when the Provisional Construction Industry Coordination Board was formed) until now (the "Material Period"). Such account should include the name of the courses and training programmes, syllabuses and course outlines, duration thereof, areas and topics taught,***

***whether any practical training was/is given and whether examinations (written and/or practical) would have to be passed, and what qualifications and job prospects these courses and programmes would lead to.'***

6. Section 77 of CICO stated:

*'As from the appointed day, the references to the CITA in the following are to be taken as references to the Council*

*(a) any agreement, contract or other instrument;*

*(b) any process or other document issued, prepared or employed /or the purposes of any proceedings before a court, tribunal or similar body; and*

*any other document (other than an enactment) relating to or affecting any property, right, liability or obligation of the CITA vested in the Council under section 72.'*

7. In those circumstances, the training courses during the Material Period would comprise the courses offered by CITA from 2001 to 2007 and by the CIC from 2008 to present.

8. The courses and training programmes offered during the Material Period included:

**Training of 中工資歷 'semi-skilled' and 大工資歷 'skilled' plumbers**

(a) One-year full-time Basic Craft Training Course - Plumbing & Pipe-fitting (changed from a one-year course to a two-year course in 2002 and subsequently reverted back to a one-year course in 2013) during the Material Period;

(b) 90-day full time Adult Short Courses in Plumbing & Pipe-fitting in Building Construction during the Material Period;

(c) 150-day Plumbing Cooperative Training Scheme from 2013 to present;

(d) 90-day Construction Industry Cooperative Training Scheme (Labour Union) - Pilot (Plumbing) from 2014 to present;

(e) 18-month Advanced Construction Manpower Training Scheme Pilot Scheme (Structured on-the-job) in Plumbing from September 2015 to present;

(f) 90-hour Advanced Construction Manpower Training Scheme Pilot Scheme in Plumbing (skills enhancement) from September 2015 to present

**Other courses**

(g) Specified Training Course for Plumber from 2005 to present;

(h) Modular Skills Upgrading Course for Plumber (Intermediate Level) from 2011 to present;

(i) Modular Skills Upgrading Course for Plumber from 2010 to present;

(j) Building Repair and Maintenance Skill Enhancement Course Module 7 - Plumbing and Drainage from 2007 to present;

(k) Part-time Practical Training Course in PE [poly ethylene] Pipe Installation from 2012 to present;

(l) Tailor-made Commissioned Courses provided upon request to companies and governmental bodies

(e.g. the Correctional Services Department and the Leisure and Cultural Services Department);

(m) Extended Craft Courses - Plumbing & Pipe-fitting held by CITA;

(n) Project Management Series for Sub-contractors - Plumbing Trade Supervisory Staff Training Course held by CITA; and

(o) Environmental Protection Series for Construction Supervisors - Theory Upgrading Course for In-service Plumbers held by CITA.

9. There is now produced and shown to me marked '**Exhibit A**' a Digital Video Disc (DVD) containing documents relating to course names, syllabuses and course outlines, durations and areas and topics taught for the courses refe1Ted to in paragraph 8. In particular:

(a) The documents pertaining to courses referred to in sub-paragraphs 8(a) and 8(b) above offered between 2008 and 2015 are the final approved versions of documents for use. Whereas the documents pertaining to courses offered between 2001 and 2007 predated the CIC - CITA amalgamation, and only incomplete versions of such documents could be located by my colleagues at the CIC. My colleagues who carried out the search for documents are also unable to verify whether documents pertaining to courses between 2001 and 2007 were the final approved versions.

(b) There are no pre-defined syllabus for courses refe1Ted to in sub-paragraph 8(1) as course outline is tailor-made each time upon requests of the requesting companies.

(c) In relation to courses referred to in sub-paragraphs 8(m) to 8(o), such courses

predated the CIC - CITA amalgamation, and my colleagues who carried out the search for documents were only able to locate limited information about the course referred to in sub-paragraphs 8(n) and 8(o).

10. Upon the completion of a practical training course referred to in sub-paragraphs 8(a),8(b),8(c)or 8(d) above and the passing of the applicable practical Intermediate Trade Test for Plumber（建造業中級工藝測試（中工）水喉工）(**'Intermediate Trade Test'**) the candidate would attain the 中工資歷 'semi-skilled' level. Upon completion of the on-the job training of the scheme referred to in sub-paragraphs 8(e) and 8(f) above and the passing of the applicable 'Trade Test for Plumber' （建造業技能測試（大工）水喉工）(**'Trade Test'**)comprising both a written and a practical test, the candidate would attain the 大工資歷 'skilled' level.

11. Alternatively to completing the on-the-job training of the schemes referred to in sub- paragraphs 8(e) and 8(f) above, individuals who have passed the Intermediate Trade Test and have accumulated one year relevant working experience can then undertake the Trade Test to attain the 大工資歷 'skilled' level.

12. A further alternative is that individuals who have not completed the on-the-job training of the schemes referred to in sub-paragraphs 8(e) and 8(f) above, and have not passed the Intermediate Trade Test, but have not less than four years of relevant working experiences, can undertake the Trade Test to attain the 大工資歷'skilled' level.

13. The Specified Training Course for Plumber referred to in sub-paragraph 8(g) is held solely for *'registered skilled workers (provisional)'* under the Construction Workers Registration Ordinance (Cap 583) for the obtaining of qualification of registered skilled

worker in accordance with such Ordinance.

14. Individuals may further pursue qualification as a licensed plumber. The CIC however offers only courses to attain 中工資歷'semi-skilled' and 大工資歷'skilled' levels, but does not offer any courses for qualification as a licensed plumber.

**Request 2 - *'explain and describe how the curriculum of the plumbing courses and training programmes were designed and confirm whether advice from the Water Services Department has been sought on the content of the courses and programmes.'***

15. In 1999, CITA set up the Course Advisory Panel to advise on the curriculum of trade courses, including plumbing. The members of 水喉潔具科課程顧問組 'Course Advisory Panel on Plumbing and Pipe-fitting**('CAP')**are nominated by the eligible representing organisations (which include companies which have employed CIC graduates, trade unions and associations, professional bodies, suppliers and employers). The syllabus of CIC courses largely follows that of CITA courses. For new courses not previously offered by CITA, the syllabuses are based on existing courses, taking into account suggestions from industry stakeholders (for example trade associations and trade unions) and CAP where appropriate. CAP would conduct an annual review of the CIC courses and would make recommendations for changes in the curriculum for endorsement by the Construction Industry Training Board **('CITB')** of the CIC.

16. Since about 2013, the 'employer category' was added to 水喉潔具科課程顧問組 CAP by CITB, and Water Supplies Department (WSD) was recommended to be the employer representative. WSD was invited to nominate a representative and has nominated a representative to join CAP since that time.

**Request 3 - *'provide data on the number of students who took the various CIC plumbing courses and programmes during the Material Period and acquired the relevant qualifications from the CIC, and describe what qualifications they have acquired.'***

17. There is now produced and shown to me marked **'Exhibit B'** a table prepared by my colleagues under my direction setting out the number of graduates of each of the courses and programmes to train 中工資歷'semi-skilled' and 大工資歷'skilled' workers in each calendar year during the Material Period, namely, sub-paragraphs 8(a) to 8(f) above.

18. As mentioned in paragraph 10 above, upon the completion of a practical training course referred to in sub-paragraphs 8(a), 8(b), 8(c) or 8(d) above and the passing of the applicable Intermediate Trade Test, the candidate would attain the level of a 中工資歷 'semi-skilled' plumber. Upon the completion of a practical on-the-job training course referred to in sub-paragraphs 8(e) or 8(f) above and the passing of the applicable Trade Test, the candidate would attain the level of a 大工資歷 'skilled' plumber.

19. There is now produced and shown to me marked **'Exhibit C'** a table prepared by my colleagues under my direction setting out the number of graduates of each of other courses and programmes (that is, other than courses and programmes to train中工資歷'semi-skilled' and 大工資歷'skilled' workers) held in each calendar year (or academic year as denoted) during the Mate1ial Period, namely, sub-paragraphs 8(g) to 8(o). These courses and programmes do not result in particular qualifications except as mentioned in paragraph 13 above.

**Request 4 -*'confirm whether skilled, semi-skilled plumbers or Licensed Plumbers are under an obligation to attend any courses periodically to update their knowledge***

***or skills in the trade, and if so, describe the system of continuil1g education and the courses available.'***

20. There is no mandatory system of continuing education for 大工資歷 'skilled' or 中工資歷 'semi-skilled' plumbers. The CIC does not offer courses for the licensed plumber qualification.

**Request 5 -*'in registering or renewing their registration/licences, confirm whether it is a condition for skilled, semi-skilled plumbers or Licensed Plumbers to attend accredited courses of continuing education periodically.'***

21. There is no such condition for skilled and semi-skilled plumbers. The CIC does not offer courses for the attainment of the licensed plumber qualification.

22. The contents of this statement are true to the best of my knowledge and belief.

Signed Christopher TO Wing

Dated, 14th December 2015

問：陶生，剛才讀出嗰個供詞--首先你睇番喺第--嗰個係咪你個簽名，喺個供詞個第六頁？Bundle X1 嘅第 10 頁，...

答：嗰個係我個簽名。

問：...係咪你個簽名？

答：係我個簽名。

問：唔。咁剛才我讀出個供詞，你能唔能夠確認番嗰個內容係真實？

答：係真實嘅。

問：有冇嘢係需要更改或者補充？

答：冇。

問：你是否願意採納呢份證人供詞作為你個主證？

答：願意。

問：我就係有少少問題問你，就係嗰個--我想問番你個培訓課程，係有冇教嗰啲學員係點樣辨認有鉛同埋冇鉛嗰啲焊料？

答：我自己就冇教呢啲課程，不過我有問過晒我啲同事，啲同事個個都話晒畀我聽係有教。

問：係有教佢哋嘅，唔。

周小姐：好，我冇其他問題。

主席：唔該。

<u>石先生盤問</u>

問：陶先生，早晨。

答：係，早晨。

問：首先我想問一問一啲即係關於你背景同埋資歷嘅問題。

答：係。

問：你係有大律師資格？

答：我而家係未有，因為...

問：未有。

答：...--我而家係讀晒㗎嘞，已經。

問：讀晒，okay。

答：讀晒。

問：即係你已經考晒所有嘅試係？

答：不過係冇 register，冇 register 到。

問：Okay。你有法律背景嘅，應該？

答：有法律背景。

問：你講講你嘅法律背景。

答：我其實係而家就係我有個 LLB、有 LLM、有 MA、有 PCLL、同埋喺三間院校教緊法律課程。

問：係。你之前曾經係 HKIAC 就做過...

答：做過係 Secretary General。

問：...秘書長嘅，叫做？

答：秘書長，係。

問：係。咁你 2008 年就開始喺建造業議會做而家嘅叫做 Executive Director？

答：係。

問：我首先就想--因為你係建造業議會嘅發言人，...

答：係，唔。

問：...所以會喺今次嘅研訊裏面。我就其實就係想首先你幫助我哋了解一下，即係香港有唔同形式嘅工呀，有大、有中、又有啲 provisional。咁我想攞一個法例，咁你起碼可以幫我哋了解一下呢個分工嗰個法律基礎。我想你睇睇就係 A2。

答：A2。

問：A2 裏面有好多個 tab，你睇睇 tab 33。呢個就係 "Construction Workers Registration Ordinance"，建造業工人註冊嘅條例。你見到？

答：係。

問：呢個其實就係我哋成日口講所謂大工 register "skilled worker"，同埋中工，"semi-skilled worker"嗰個法律嘅基礎，就係呢個條例，對嘛？

答：係，對。

問：咁你做得 CIC 嘅 Executive Director，咁你都應該對裏面嘅一啲即係法律嘅基礎有啲嘅認知，對嘛？

答：係。

問：咁可以幫一幫我哋。可能對你嚟講係好明顯，你先睇一睇就係第 939 頁。

答：939。

問：939。第 38 條，呢個條例，就叫做 "Register of Construction Workers"。

答：係。

問：呢一條條文而家係生效咗嘅？

答：係，生效。

問：因為--即係長話短說，呢個條例經歷過好多嘅更改，我相信你都知道。

答：係。

問：但係起碼呢一條條款 38 就已經係生效咗，對嘛？

答：係，生效咗。

問：有一啲係過咗立法會，但係又未生效嘅，你知喇？

答：係。

問：係，但係呢條係生效咗嘅。但係其實之前版本嘅條例都有啲類似嘅嘢，係咪呀？因為大工、中工已經存在咗好耐。

答：係。

問：所以其實唔係 2015 嗰個版本，之前可能 2005、2007，諸如此類，

其實有啲更加早嘅版本，呢個條例，都係有講關於一個註冊制度，已經，對嘛？

答：有，對。

問:好。你就見到,就係 subsection e 嗰度,你見到就係呢個 register,就有分佢係咪一個 designated trade division,即係邊個工種。

答：係。

問：每個工種就有 registered skilled worker，registered skilled worker（臨時），(provisional)。

答：係。

問：Registered semi-skilled worker，同埋 registered semi-skilled worker(provisional)。即係主要講呢四樣，嗰個 general 嗰個我哋唔好講住因為嗰個應該唔係講一個特別工種㗎，係咪，general？

答：係，嗰個係普通工人。

問：普通工人，係。

答：係。

問：但係我哋今次呢個案講嘅水喉工人，就係一個特別工種，...

答：係。

問：...所以就應該係(i)、(ii) 、(iii) 、(iv)，就唔會 general worker 包咗嘅。好嘞，咁就呢個就係列舉咗嗰四種工人，你睇番 section 40 隔籬嗰頁，"Qualifications for registration"，呢個都係生效咗嘅。

答：係。

問：因為 Legal Notice 14 of 2015。同樣就係其實類似嘅一啲資歷嘅要求，喺之前嘅一啲法例嘅版本都係有列舉出㗎，對嘛？

答：對。

問：你睇睇就其實關於大工、中工需要啲咩嘢資格，就睇睇(2)。(2)就係講嗰個註冊官咩嘢情況下先可以將一個工人註冊成為一個大工呢，佢就列舉咗有四個可能，(a)、(b)、(c)、(d)咁樣，見到喇？

答：唔，唔。

問：我哋今日就唔好走去即係講好多唔係關 CIC 嘅事情，關 CIC 嘅事情應該就係 Schedule 1，對嘛？

答：係。

問：Schedule 1，我哋睇睇就係 964 頁，因為佢呢度講就話 "holds a certificate set out in column 4 of Schedule 1 opposite the trade division"。我哋望一望 964 頁--唔係，963。對唔住，963。

答：963。Number 9...

問：你見到嘛？

答：見到。

問：963 左手面第(19)項，你見到就係"Plumber"，水喉工人。

答：係。

問：咁呢個就係嗰個工種，個 trade division。

答：係。

問：你睇下第四棟，咁就隔籬第三棟就去形容個工人做咩嘢㗎喇。再過一棟嗰個 column，就係"Any one of items (a), (b) and (c)"，第一個就係 " trade test certificate for Plumber issued by CITA."，CITA 即係 Council 嘅前身。

答：係。

問："Or Council"，呢個就係關 CIC 事㗎嘞。

答：係。

問：因為即係開宗明義就係 CITA 或者 Council 出嘅呢個 trade test

certificate 就認可。跟住(b)同埋(c)嗰啲，就係一個學徒。(b)，就係你個學徒。

答：係，唔。

問：(c)，就即係比較特別啲，(c)就係你要有個 plumber's licence，即係你要係一個 licensed plumber。

答：係。

問：你係 licensed plumber 你就可以做大工。

答：係。

問：咁其實 licensed plumber 係難考啲㗎，係咪呀，應該係，理論上？

答：係，其實你都可以攞到大工嘅，咁之後你都可以做一個 licensed plumber。

問：係，我知。但係其實個意思就係話，如果你嘅資歷已經夠做 licensed plumber，做大工都應該綽綽有餘？

答：做到㗎，係。

問：你跟住睇番右手面再過一個，右手面過一個，其實就係指 semi-skilled workers 嘅資歷嚟嘅。

答：係。

問："Intermediate trade test certificate for Plumber issued by CITA or Council"。

答：係。

問：係咪呀？

答：啱。

問：呢個就係列舉咗就係你證人供詞都有講過，就係你考 trade test 就會做到大工；你考 intermediate trade test，就做到中工。

答：係。

問：就係個法律基礎就係咁樣。

答：係。

問：至於我哋另外就見到有一樣嘢，叫做 provisional。

答：係。

問：Provisional，你望一望就係你嘅證人供詞第 13 段都有講過，就係 CIC 其中一種課程，就係幫助一啲擁有 provisional 大工牌嘅人去晉升成為正式嘅大工牌。嗰個就係你嘅證人供詞第 13 段裏面講過嗰一個課程。

答：係。

問：嗰個法律基礎，其實就應該係咪你睇睇 Section 40 (2)(c)嗰度呢？即係點樣可以做到大工，你一係你就走去考嗰個 trade test certificate。但係另外一度，CIC 可以幫一個人做到大工嘅，就係你望一望 940 頁，940 頁，Section 40(2)，呢度就係邊啲人做到大工。(2)(c)你望下：

"holds a certificate referred to in section41(1)(b) —

(i)in respect of a training course that the Council specifies under section 41(1) in relation to the registered skilled workers (provisional) for the trade division"。

呢度就係話 Council 有權去即係指定某個 training course 係認可，上完，你就可以由 provisional 變成正式嘅大工。

答：係。

問：呢個就係你嘅證人供詞裏面第 13 段講嗰一個課程？

答：係。

問：即係基本上就係 CIC 喺協助工人，或者令到工人可以 qualify 成為大工，就係透過嗰啲 trade test certificate 嘅考試；中工就係 intermediate？

答：係。

問：但係大工亦都有一個--另外一條途徑，就係 tab 你第 13 段講嗰一種嘅考試，就由 provisional 晉身成為正式嘅大工，對嘛？

答：對。

問：即係籠統咁講，呢個就係個講法，對嘛？

答：對。對。

問：有一點就為興趣問一問，即係而家我哋知道啲法例有陣時改完之後，就之前嗰個版本就唔見咗，喺電腦嗰度。你睇睇就係，呢個條例嘅 924 頁。924 頁，Section 3，第 3 條，佢就話 "A person shall not personally carry out on a construction site construction work unless the person is a registered construction worker"。

呢個就好正常，即係除非你係註冊咗嘅工人，如果唔係你唔可以喺地盤做嘢。跟住(2)、(3)、(4)就係用意大利字體打出嚟或者寫出嚟嘅，就係更加詳細就話，就話如果你係--即係除非你係大工，否則你就唔可以做啲淨係大工先准做嘅嘢，除非你係--就或者除非你係註冊咗某種工種嘅大工或者中工，你就唔准做嗰種工種嘅嘢，就係呢個(2)、(3)、(4)咁嘅。

但係佢就 not yet in operation。但係其實唔等如而家有真空㗎嘛，因為其實一啲之前嘅版本或者法例都係有類似嘅條文，係咪？所以而家其實我哋要睇就唔係睇呢個，對嘛？

答：其實之前我哋係冇一個好似頭先你咁講，即係寫得清清楚楚係不過係未生效㗎。

問：係。

答：跟住就我哋而家「專工專責」嚟緊，即係話所有人入地盤都好，都要登記。

問：係。

答：咁呢個就點解？呢度係幫到佢哋係要登記。

問：即係話你嘅意思係呢一個之前，係未有寫得咁詳細嘅一個...

答：都有寫得咁詳細嘅，不過就係冇生效，即係唔係 effective 嘅。

問：即係寫咗，但係一路都未生效過？

答：未生效，因為都係 basically，就係因為--點解呢？因為我哋搵人係難嘅，喺建造業，所以 in the way，我哋係需要--for example，有個過渡期，我哋有個過渡期之後，我哋就 make it compulsory。

問：Okay，okay。好，如果係咁嘅話，即係而家嗰個 register--即係考大工牌嘅制度仍然喺度，個 register 仍然喺度，但係法例嗰個 backing 就未喺度嘞？

答：法例嘅 backing 都喺度，不過有啲人就未必係想 register 中工牌同埋大工牌，佢有可能 register 咗叫 general worker。

問：係。

答：因為 general worker，就係普通工人係容易啲 register。

問：我明，我明。

答：就係咁，你就可以入到地盤。

問：我明。所以我而家走去註冊咗一個大工牌，或者我做啲嘢我冇註冊大工牌，就冇咩嘢法律後果嘅，即係以法例嚟講，係咪？

答：都有㗎。

問：係咩嘢呢？

答：佢 basically 就係一個原因，你做嘅嗰樣嘢，你唔可以 basically without 一個 licence。

問：Okay，okay，得，明白。

答：係呀。因為你其實好似例如，for example，頭先我都係講過--個 witness statement 嗰度都有講過，就係你如果你係 certain 個 trade，係規定咗--WSD 係規定咗--Water Supply Department 規定咗一個 licensed plumber 要做嘅嘢。

問：係，嗰度係 licensed plumber，但係同大工、中工冇關㗎嘛？

答：係。

問：我諗另外就可能有啲合約規定，話你一定要有幾多成嘅工人係大工，幾多成工人係中工？

答：係。

問：咁嗰度呢，呢個 register 裏面註冊咗就有用嘞，應該？

答：係嘞。

問：但係你嘅意思即係話而家生效咗嘅法例，係冇一個禁止，係話你如果唔係註冊咗嘅大工、中工，就法例唔准你做某種嘢。而家係未有呢一個禁止住㗎？

答：未，暫時未生效住，係。

問：哦，okay，得。因為點解呢？我又望見呢就係--你睇睇後面 925。

答：925。

問：925頁。"Offences in relation to prohibitions under sections 3 and 5"。

跟住你望下下面，925："A person who contravenes section 3(1),(2),(3),(4) commits an offence"。但係佢寫咗 3(1),(2),(3),(4)，但係(2),(3),(4)係未 come into force。

答：係，我哋有個 basically 係一個 transitional period㗎。

問：Okay。

答：咁個 transitional period 就係去到出年--就係今年嘅。

問：Okay。

答：Basically 就係係會有 transitional period。After 呢個 transitional period，如果你冇嘅話，你就 commit 一個 offence㗎嘞。

問：哦，明白，明白。好，我哋好快咁樣睇一睇你嘅證人供詞裏面所提過嘅一啲課程。第10段--唔係，第8段，sorry。第8段，(a)、(b)、

(c)、(d)就係四種課程，就都係 CIC 辦嘅。你嘅供詞嘅意思，如果我冇理解錯，就係呢四個課程係 or㗎，係咪呀？讀咗其中一個，就可以去考個 intermediate trade test certificate？

答：係，不過係要 depends on 嗰個人佢個資格，入嚟讀嗰陣時係咩嘢 level 同埋盛。

問：咩嘢意思呀？

答：例如 for example，如果有啲係例如 90 day 嘅 full day 課程，number (b)嗰度，有啲其實喺出面做緊啲係 general worker，普通工人，其實係做緊少少呢啲咁嘅工作，其實佢有少少經驗嘅，佢未必係需要做一個一年至到 or even 之前係兩年嘅課程。因為嗰啲係學徒，即係啲啱啱係十六歲、十七歲嗰啲讀嘅。

問：係，因為我就正想問你，你睇下嗰四樣，其實由九十日至到一年不等。

答：係。

問：我就心諗，「嘩，即係我讀九十日，又可以走去考 intermediate trade test；我讀一年，又走去考 intermediate trade test。」即係唔係咁㗎，係咪？准許邊啲人去考個 intermediate trade test，都係其實視乎佢嘅經驗嘅？

答：經驗，係。

問：即係唔係個個就可以走去「啊，我走精面，我梗係 take 九十日嗰個咪得」。

答：唔得。

問：唔可以咁嘅？即係決定我准唔准你 take 九十日呢個 course，其實已經包含咗我要考慮下你其實有冇一啲足夠嘅資歷，我先畀你去讀九十日呢個 course，對嘛？

答：係，係。

問：你一定要讀咗其中一個，先至准考呢個 intermediate trade test，呢個一定嘅？

答：係，係。

問：即係唔可以話「啊，我叻嘅，我唔使讀嘅，我走嚟考」，就唔得嘅？

答：都有啲人可以走嚟考，不過好多時都唔合格嘅。

問：Okay，得。咁一般嘅做...

黎先生：但係我想問一問你，係咪理論上 8(a)呢，就係你乜嘢嘢都唔識嘅，就可以去讀 8(a)？

答：係。

黎先生：乜嘢 background 都冇嘅，就 8(a)？

答：即係未入過係地盤嗰度，乜都未做過嘅。

黎先生：其他嗰啲、就一定係有啲...

答：有啲經驗嘅。

黎先生：...--有啲經驗㗎嘞？Okay，唔該。

答：即係個經驗唔係去到中工牌，係去到普通工人咁。

問：咁所以個 course 嗰個長短，就可以短番啲嘞？

答：係。咁個原因就係點解呢？點解我哋有咁多 course 呢？因為嗰陣時係短缺人手，嗰陣時有啲人就話「如果一個 course 係兩年制，點解我哋轉咗由--本來開頭一年制轉咗兩年制呢？」我哋係想 comprehensive 啲嘅。跟住之後啲人就話如果兩年制，就冇人嚟讀，咁我哋 basically 就要轉番一年制，...

問：轉番一年。

答：...咁要 compact 多啲。如果第二啲有經驗嗰啲，就話畀我聽「如果我一年讀呢，我就唔讀㗎嘞。」咁所以我哋要做--跟番個市場嚟調節番嗰啲課程。

問：即係基本上整啲短啲嘅 course 出嚟，就係因應有啲人講話「其實我

已經足夠嘅資歷，你即係叫做畀番一啲 top-up 嘅一啲資料我，或者教導我已經得㗎嘞。」？

答：係。

問：好。你睇番 8(e)、(f)，8(e)、(f)就係要嚟考大工㗎嘞。又係 or 嘅，係咪？其中一個已經得㗎嘞，(e)同(f)，係咪？

答：係。

問：又係嘞，一個就十八個月，一個就九十個鐘頭，又係即係唔係個個都可以走去話「啊，我讀短啲個個」，唔可以㗎，係咪？又係睇下你嗰個人個 quali.點先嘅，係咪，又係？

答：例如，for example，8(a)嗰度，佢讀完咗之後，因為佢係未入過地盤。或者佢讀咗一年之後，佢可以走去讀 8(e)嗰個嘅。

問：係。即係你完全乜嘢之前經驗都冇嘅，你就可能個要求就係你要讀 full course，最長嗰個？

答：係。

問：如果你之前係有過啲經驗，你就可以話我唔使讀 8(e)嗰個，我讀 8(f)嗰個？

答：係。

問：但係要讀 8(e)或者 8(f)，係咪一定要有 intermediate cert.先至可以考？

答：有，係需要嘅。有啲人係未必需要，有啲人可以--for example，喺地盤嗰度係做咗好多年經驗，佢 basically 就可以走嚟考都得嘅。

問：Okay。

答：不過多數個合格率都唔係咁高。

問：但係即係條例規定，就唔係一個一定嘅規定，一定要有 intermediate cert.先得？

答：唔係。

問：即係你可以一攞就攞到大工牌？

答：係。

問：當然收唔收佢，佢合唔合格，另外一回事喇？

答：係。

問：即係(e)同埋(f)都有自己入學嘅要求？

答：係。

問：一定要考(e)或者(f)，跟住就要--可以考到嗰個 trade test cert.？

答：而家我哋開始諗緊，就係如果啲人走咗去考咗(e)同(f)，佢考唔到，不過攞到一個 certain 嘅分數，可唔可以畀個中工牌佢呢？而家傾緊呢樣嘢。

問：即係佢唔係走去考(a)、(b)、(c)、(d)，佢心頭高，佢一開始就走去考(e)或者(f)？

答：係。

問：但係就攞唔到需要 pass 嗰個分數，但係又攞到一個足夠嘅分數，你覺得大就做唔到㗎嘞，中都做到嘅咁？

答：係。

問：考慮緊好唔好咁嘅情況？

答：係。

問：就唔好好似肥晒佢咁樣？

答：係。

問：就畀番個 recognition 佢，係咪？

答：Recognition，係。

問：而家諗緊？

答：而家諗緊，點解諗緊呢？因為其實都有啲係考唔到。因為其實嗰個試題同埋盛呢都幾嚴格嘅，其實呢個...

問：都嚴格？

答：好嚴格㗎。

問：係。

答：其實好多人都投訴我哋呢啲嘢考到差唔多啲人唔合格，要考幾次，所以我哋都要好小心把關。所以如果佢考唔到嘅話，代表唔係話佢唔得嘅，有可能個導師睇完咗之後，都 okay 喎，for 中工，咁有可能就叫佢申請中工牌。

問：好。

答：不過唔係必然一定要畀到個中工牌佢，因為有可能就有啲考唔掂，唔得呢，佢都叫佢再考過。

問：我明，即係睇你--即係講得俗啲，就係睇下你肥得係咪好差啫？

答：係。

問：或者你會覺得就話某幾個 section，只要你過到嗰幾個 part，可能已經足夠做中工㗎嘞，咁可能會？

答：都唔係，佢會睇晒成個流程。

問：成份，得，好。

答：佢會睇下，如果你有啲 pass 咗，有啲肥得好犀利，佢都會肥你。

問：哦，得，好。即係總之係一個折衷嘅一個點，就係唔合格，都唔係冇晒嘅？

答：係。

問：好。第 13 段你解釋咗，就係嗰個由 provisional 可以晉身至到正式做大工嗰個。就我想睇睇第 15 段，第 15 段你就提到有呢個 CITB，Construction Industry Training Board。呢個就係--你有一個叫做 CAP，一個課程顧問組嘅組織，咁就提議咗一啲嘅課程嘅更改或者內容，就由 CITB 去 endorse。你可唔可以講一講呢一個即係

機制嘅運作係點樣嘅呢？即係先有 CAP，跟住有 CITB，CAP 就係有業界代表，係咪？

答：係。或者我講番，其實 1999 年之前，其實就未有 CAP 嘅，未有 CAP，好多時都係個導師同埋盛呢，啲同事佢哋就會 basically 就係開始 develop 嗰啲 course。嗰陣時有好多人就投訴話啲 course 就好似脫節，同出面個環境同埋盛，好似做啲嘢、教啲嘢都唔係幾啱。之後就 develop 咗一個叫做 CAP，呢個 Course Advisory Panel。

點解呢？因為我哋要睇番出面個市場，佢哋需要啲咩嘢課程，同埋點樣教法，同埋佢個手藝係點，咁成立咗一個叫做 CAP，有唔同嘅代表喺度。之後我哋覺得就係呢個...

問：呢個 CAP 唔係一個法例嘅機構，唔係法定機構？

答：唔係一個法例機構，係 through--係一個 CITB 下面，係一個好似--你可以講一個 committee or 一個 task force 咁。

問：CITB 係一個法定機構？

答：係。

問：係。

答：係 under CIC。

問：係，好。即係話 CITB 就成立咗 CAP，就作為一個即係課程嘅 think-tank 之類，可能係？

答：係。

問：就係佢即係知道下究竟其實業界，或者唔同嘅僱主佢哋有咩嘢要求，即係反映番咁解。

答：係。

問：好嘞，跟住你睇睇第 16 段，"Since about 2013, the 'employer category' was added to 水喉潔具科 by CITB"。即係 CAP 喺 2013 年之前嘅代表之中，係冇人代表僱主呢一個類別，係咪咁意思？

答：其實可以話係，可以話唔係。

問：係，請解釋下，因為我呢度我唔係...

答：我解釋下先。

問：好。

答：因為咩嘢叫 employer 呢？其實你可以講話好似 main contractor，係咪一個 employer？都可以當係一個 employer。不過，我哋嘅 employer definition 喺我哋嘅 CICO，即係 Construction Institute Council 個 Ordinance 嗰度，會指明真係好似啲 employer，例如政府，例如，for example，有啲法定機構，例如地鐵同埋盛，嗰啲就係 employer，同埋啲 developers。

我哋之後就話好似似乎--我哋每年都會睇一次，我哋所有嘅 task force committee，係咪裏面有啲不足呢？係咪有啲人係冇代表性呢？嗰陣時我係都有份睇。嗰陣時都睇到，「咦，似乎都好似有啲好似部門。」好似例如，for example Water Supply Department。因為我哋好多啲學員畢咗業之後，都去咗 Water Supply Department 做，如果發現都係冇佢哋呢，點解唔擺佢哋落去呢？咁啲同事開始就會擺佢哋落去。之後我哋喺 CITB 就 endorse 咗，會擺多一個，for example，employer 嘅 category 紀錄係。

問：哦，我明白。所以呢個 employer，就係技術性嘅 employer，你意思？

答：係。

問：就唔係老闆，因為即係老闆嗰種 employer 就實有喇，應該係？

答：係。

問：即係 main con.，諸如此類，就一定會有--喺呢一個 CAP 裏面有代表喇？

答：係。

問：嗰啲唔使講。但係即係法例規定嗰個所謂 in quotation mark 嘅 employer，反而就一路就未有？

答：係。

問：所以就 2013 年加咗落去。而頭先你所講，其實法例規定嘅 in quotation mark employer 都好多種，咁就係裏面就抽咗就係以 WSD 就作為法例規定嘅 employer 嘅一個代表？

答：唔係，其實唔係 WSD，其實我哋都有第二啲 employer，例如，for example，就係你見到 Housing Authority，好多唔同嘅 employer 都有。

問：係，係。

答：我哋點解嗰陣時--因為我哋發現到，就係其實我哋呢啲學員好多都去咗 WSD 度做嘅，我哋覺得就應該有個代表 from WSD 就喺我哋嗰個 CAP 嗰度，就係咁解。

問：Okay。但係呢個係會輪替，係咪呀？

答：會㗎，有個 term 嘅，即係佢哋會...

問：Okay。

答：...做到咁上下，佢哋要 rotate，有可能係第二個 employer。

問：第二個部門可能會...

答：有可能第二個部門可以--例如，for example，可以機場管理局都得。

問：公營機構？

答：係呀，公營機構都得。

問：得，明白。

答：Or even 發展商都得，是但一個代表都得。

問：哦，得，得，明白。好，我想同你好簡短咁樣去睇一睇，你嗰隻 DVD 裏面嗰個 print out，print 出嚟又有四個 bundle。我睇咗，就其實好多都係 2001 版本、2002 版本、2003 版本，就好多都係即係不斷地去 renew 番同一個版本，不過係唔同年份嘅一啲即係好似係個 syllabus 咁樣嘅，我會同你簡單咁望一、兩個。

你睇睇譬如話 X1，你面前，X1，X1 嘅第 19 頁，第 19 頁。呢個

就2002至2004，你叫做「2年制基本工藝課程」，「2年制基本工藝課程」，其實我諗你個證人供詞裏面嗰啲categories，都係睇番呢一拃文件，然之後執番個heading出嚟譯番。

所以呢個--即係舉個例，你睇呢個2002至2004嘅呢個「2年制基本工藝課程」，其實就係相等於你第8a段，第8a段，第6頁。"One-year full-time Basic Craft Training Course - Plumbing & Pipe-fitting"。曾經轉過two years in 2002，咁呀咁啱呢個嘞。所以呢一個叫做「2年制基本工藝課程」，其實就係8a指嗰個。

Okay，咁裏面就有提及到焊料同埋一啲基本嘅技術，你睇下71至72。佢裏面有講到錫焊。你就2008先加入，但係你加入之後，你有冇睇番之前，或者睇番一路嗰啲syllabus咁樣？定係你嘅職責其實係比較宏觀啲，係冇--即係要睇到syllabus咁仔細？

答：Syllabus其實唔係我睇，因為我哋current嘅員工都有成六百幾人。我basically就係下面都有個叫做Director of Training and Development。其實佢啱啱都join咗--佢做咗Director都有兩年，咁basically佢而家就病緊，所以佢basically--佢個職責就係我睇緊。

問：Okay。

答：不過syllabus同埋盛，因為我哋有個CAP，咁其實佢睇緊呢，因為如果我去睇埋，其實我基本係冇時間做第二啲嘢。

問：得。

答：所以我都係rely on佢哋CAP，因為好多時嗰啲CAP嗰啲代表性呢，好多時都係代表業界，佢會畀啲意見我哋同埋盛。咁之後...

問：即係所以你呢一拃嘅syllabus，你都係為咗今次呢個供詞即係睇出嚟，...

答：係。

問：...而你唔係day to day你嘅工作...

答：唔係。

問：...要緊密接觸呢個syllabus嘅內容？

答：唔係。

問：哦，可能你第一次睇，我而家畀你啲嘢可能係。你睇睇第 71 頁，錫焊你見到喇。「錫焊法有多種，例如：烙鐵錫焊、抹錫瓜、滲錫熔接法等」。跟住睇第二段，「滲錫熔接法如採用嵌有錫圈之銅配件」。你有聽過呢一種嘅 fitting，就係你要將兩條銅管合埋嘅時候，有陣時你會有一個叫錫曲嘅嘢，即係有一個嘢去 connect 咗兩條嘅銅管。

呢個 connect 兩條銅管嗰個呢，啲師傅叫做錫曲，裏面就有一浸 soldering material，即係焊料喺度。你有冇聽過呢一種嘢？

答：其實我第一次聽，其實就唔係喺呢度聽，即係喺我做緊個 job 嗰陣時。其實係嗰陣時個 enquiry 成立咗之後，其實有個律師都叫我哋--佢哋想去我哋個工場嗰度睇下點樣做法。

問：係。

答：嗰陣時有個導師，一陣間你都會問佢嘢。

問：李先生，係咪呀？

答：李生。

問：係，我哋會放佢段片。

答：佢都有教，即係 show 我哋係點樣做法同埋盛。

問：得，得。

答：唔係淨係一個導師，因為我睇咗三次，三個導師教我哋，其實佢都有解釋畀我聽。

問：Okay，得。即係簡短地講就即係你嘅日常工作就唔會牽涉到要去了解個 syllabus。

答：唔會。

問：而你對呢個所謂錫料、焊料嘅認知都係出咗呢個鉛水事件之後，你可能要準備一啲嘅回應，或者即係要了解多啲，你先至開始了解？

答：係。

問：好。我照讀畀你聽，呢個就係「接合時首先將全部接口清理，塗上助熔劑例如松香膏，即將其置入配件內，檢查及調正方向和尺寸，才用噴燈向接口處加熱（俗稱“走錫”），此時最重要是掌握熱力。加工件熱力不足，錫圈未達致熔融狀態，則無法令配件與喉管焊接。但如熱力量過高，則錫圈會熔至液態而流走，亦不能令配件與喉管焊接，或焊接效果不佳使通水後出現滲漏情況。某些情況需自行加錫於接口處才"走錫"，則管端外壁及配件內側，必須加錫均勻，才可接合及"走錫"。」

你睇睇後面，72頁，呢度就係教「各類同質料喉管的焊接」。你睇落少少就有「銅管」，見到嘛？

答：見到。

問：Copper pipe。「銅管有時亦可以以直流電焊機配電弧焊條焊接，但熔合性不甚理想，最好是用乙炔」，頭先我哋讀個「央」字，未必係，不過算喇--「氧氣銅焊。」

咁一路讀，就讀到最屘嗰段，就寫話「銅管有時亦都用錫條焊接（抹錫瓜或走錫），有些銅管零件內部嵌有錫圈，加熱使錫均勻分便便成。」咁你見到呢度有一個名詞係叫做「錫條」嘅。出呢個鉛水事件之前，你對「錫條」呢個名詞有冇認知㗎？

答：都有認知，因為我個 first degree 都喺電子嘅，咁做電嘅，咁不過我係接受水喉嗰啲我就係唔識嘅。咁電嗰啲，我哋都規定咗係有啲standard嘅係需要用錫條嘅。

問：但係你做電所需要用嘅錫條就唔係 soldering material 呢種錫條，係咪？

答：唔係。

問：唔係，okay。即係喺焊接呢個 context，你就即係對呢個錫條呢個概念冇認知嘅，係咪？

答：其實係冇認知嘅。其實都係去到議會，近期呢個聆訊開始之前，咁其實就啲同事開始教我點樣、點樣認識。

問：咁但係即係實際教嗰班，譬如話李先生，佢哋就可能會比較真係落手落腳教，佢哋會清楚啲嘞，係咪？

答：係嘞，佢哋清楚好多。

問：即係呢啲名詞。好。咁我唔會再同你咁樣去嘞。

我再睇埋呢一份嘢，最後一版，就係89頁。89 --唔係，108，sorry；internal係89，個bundle係108頁。108頁，就係一啲常見嘅名詞。咁你見到右手面嗰欄就有"solder"或者"tinman"，就係「錫焊」咁樣，即係有教咗呢個名詞喇。咁即係呢個係你哋嘅syllabus裏面即係會教過嘅嘢。

即係呢一套文件，可唔可以咁講，就係即係其實差唔多係一個範圍咁樣，到上堂教，咁啲老師就即係喺唔同嘅地方，可能佢會用口語嘅方法即係示範或者即係詳細解釋啲咁樣，但係呢啲只不過即係好似一啲即係我哋話syllabus咁樣嘅形式嚟嘅，係咪？呢啲唔係一啲講義嚟嘅，係咪？

答：其實唔係嘅。啲導師都有講畀我哋聽嘅，佢哋會basically揸住兩個，就話畀佢聽，「呢個係有鉛，呢個係冇鉛」，咁話畀佢聽嘅。

問：哦，okay。

答：不過係咪好詳細講呢，又唔係嘅；多數就咁話佢聽，「呢個係有鉛、冇鉛」，所以佢--話畀佢聽個問題，即係點解會有鉛，點解冇鉛，係咁多。

問：好。當然呢個你聽番嚟喇，咁所以我問番啲導師，我問番李生喇，一陣間。但係我想同你睇睇就係--我唔同你逐年去睇嘞，因為年年都係咁嘅。

答：係。

問：咁但係直至到2015年就有改變嘞。我想你睇睇X3，Bundle X3，1989。你睇1988。1988，就係「2015-2016年度1年制基本工藝課程」，即係呢個都係考中工嗰個course喇，basic...

答：係。

問：...嗰個craft嗰個課程喇，2015至2016。

你睇睇後面，1989頁，就係2015年8月修訂嘅，你見到，就係準備2015年9月開課用嘅。

"KBC"係乜嘢呀？

答："KBC"係九龍灣訓練中心。

問：哦，Kowloon Bay Centre咁樣，係咪？

答：係嘞，Kowloon Bay Centre。

問：麻煩你睇一睇2020，twenty twenty。呢度又係即係「錫焊」嗰個heading。即係之前睇過喇，2001又係有呢個heading，而家都有喇，咁差唔多嘅其實即係講嘅內容。但係你睇番 2021，「某些情況需自行加錫於接口處才"走錫"」，跟住多咗一段，「施工的銅管焊接物料-錫線（不含鉛及呈交焊接物料無鉛證明書）須符合水務署標準及批準後方可使用，而錫焊接駁的焊位須使用無鉛錫線焊接。」咁你見到喇。呢個係咪--即係好明顯係咪因為出咗呢個鉛水事件之後加上去嘅？

答：一，係；同埋其實我哋係收到--其實到而家係收到兩次嘅，WSD都有啲通知我哋。其實佢唔係淨係通知我哋，佢通知晒全個香港，就話有啲嘢就 basic 係要注意嘅。咁我哋啲導師同埋盛呢--之前我哋嘅director就會circulate畀啲導師，就叫佢哋有咩嘢喺個課程嗰度要更改，要加落去嘞。咁呢個就係咁做法嘅。

問：你講水務署嘅一啲通知。你睇睇2148。

答：即係啲notice。

問：你睇睇2148頁，係咪就係呢個呀？

答：係嘞。

問：係咪就係呢個？

答：係嘞。

問：即係水務署嘅通知，不能含鉛，咁所以你就即係喺呢個資料嗰度就加番呢個上去？

答：係喇。

問：咁你留意下--即係你未必可以幫到我哋，不過我想你睇睇。「施工的銅管」，睇番 2021 頁，唔該，「施工嘅銅管焊接物料-錫線（不含

鉛...）」，跟住佢再用「無鉛錫線焊接」。佢用咗「錫線」呢個名詞嚟到形容嗰啲焊料嘅。

你睇番呢頁最底嗰度，「銅管有時亦用錫條焊接」。

你見到有一度就叫焊料做「錫線」，有一度就叫焊料做「錫條」嘅。咁你有冇認知呢兩者，呢個 terminology 嘅分別在邊度呢冇？

答：冇。我都唔係好清楚。

問：冇，得。但係呢一個係邊個編寫出嚟㗎，呢一個課程會？

答：呢個就係我哋--我哋其實有啲高級經理，咁佢開始就睇番啲 syllabus，咁就同啲導師，有啲係我哋啲 superintendents，就開始坐低，就睇下邊啲課程度改同埋盛，邊啲要 update。佢哋唔係--其實唔係淨係 WSD 嗰個 notice 嘅。其實佢哋每年都會更改啲課程，睇下邊啲要 update，同埋跟番個市場嘅走勢嚟到做法嘅。

問：但係即係寫嗰個人會唔會自己教番㗎？定係寫還寫嗰個，但係教嘅，佢哋會--即係好多人，同埋教㗎嘛，李生嗰啲。即係教嗰啲，佢會唔會即係揀住呢份嚟讀出嚟，定係佢真係會即係比較自由發揮啲嘅呢？

答：其實佢都--好多時啲導師都有自由發揮嘅，不過我哋都規定咗，我哋需要所有課程都要寫得好清清楚楚。咁之後，啲課程寫得清清楚楚之後，因為我哋有個叫 CAP，C-A-P 嗰個，即係 Course Advisory Panel，咁佢哋就會久唔久睇下啲課程裏面點樣寫法同埋盛。

問：但係啲寫法就係呢啲喇，係咪？

答：係嘞。

問：但係即係當然呢度係--頭先我話齋，就係呢個係個 syllabus，但係口講就有好多--即係有啲私人嘅竅門，或者有啲詳細啲嘅解釋，嗰啲就未必會係寫咗喺度㗎嘞，或者實際嘅示範，咁就梗係寫唔到喇，係咪？

答：我唔排除會有咁喇，咁因為係自由發揮同埋盛。不過好多時啲導師有啲都會跟番個 syllabus 教。

問：同埋因為我哋見到 syllabus 就真係冇講過話 emphasise 要無鉛囉，...

答：係。

問：...即係 2015 年之前，咁所以我先至想了解，就話如果啲導師真係照讀個話呢，就冇講到有鉛、無鉛個喎。

答：係。不過有--所--我哋知道有啲同--啲導師同我哋傾過，佢哋都有教嘅，before 我哋改咗呢個 syllabus 嘅。

問：即係雖然你裏面之前--喺 2015 前係冇寫到要強調無鉛，但係你嘅意思就話你嘅了解，啲導師其實都有強調係要無鉛嘅？

答：因為佢哋知道。因為佢哋教水喉科呢樣嘢，啲水係人哋會飲落去個肚度嘅，咁所以佢哋知道係要教同埋盛。

問：Okay。好嘞，跟住再睇睇 X4。X --唔係，睇番呢個 X3 先喇，sorry。睇睇先。2193，2193。2193，就係--我畀你睇番呢一頁嘅，first page，2158，呢個就係嗰個九十天課程嚟嘅。8(b)，即係你嘅證人供詞 8(b)講到有個九十天課程，咁呢個就係嘞，「成年人全日制短課程 90 天」。

咁你睇番 2193，咁佢裏面就有教就係「滲錫（走錫）工具」。咁佢話「滲錫熔接嘅主要工具係噴燈或可油氣噴槍。操作過程係利用噴燈將銅管加熱至適當溫度，使已預藏於銅管接口處之錫圈，受熱熔解而將銅管接合，或另行加錫於接口位置。」咁呢個就係即係基本去解釋嗰個錫焊嗰個 soldering，soldering 嗰個 process 喇。好嘞，呢個就係 2011 年嘅時候嘅版本喇。同樣，我就唔同你真係即係逐年去睇，因為年年都係咁樣。

答：係。

問：但係，又係嘞，到到 2015 年嘅時候就有更改嘞。麻煩你睇睇就係 X4 呢個 bundle。X4 呢個 bundle。啊，sorry，你睇睇 2219 先。頭先嗰個 bundle 嘅 2219，都係 2002 嗰個--對唔住，都係 2002 嗰個九十天課程嘅 syllabus 嚟嘅。

2219，最底嗰度，都講番「滲錫熔接」。你見到就係「滲錫熔接：煬嘅熔點極低」喇--呢個「點」字，我諗係嗰個電腦出個字出錯咗，...

答：係。

問：...後來改番番嘅，喺幾年之後。「煬之熔點極低，一般採用火水噴

燈或石油氣噴燈，已可應付，施工時必須以砂布或鋼絲棉將管端連接部份及配件接口擦淨，塗上松香膏，組合後應複核尺寸和方向，才用噴燈加熱走錫。此乃日漸普遍之紅銅管接駁方式。」

呢個都係2001、2002嗰個短期課程裏面講到有關錫焊嘅部分，亦都係冇零零舍舍係強調無鉛個喎，我哋見到。咁你亦都係講話，你嘅了解，就係啲先生係會講嘅，係咪？

答：係。

問：好嘞，咁你睇睇--到2015年就改咗嘞。我哋睇番X4，2986。X4嘅2986。2986，就係「2015-16年度」喇，我哋見到。

答：係。

問：呢個都係8(b)嗰個九十天課程。咁你睇番裏面相應--即係相對番頭先我畀你睇嗰兩頁，就3020，「滲錫熔接嘅主要工具係噴燈。操作過程」--呢度就係冇改嘅，同之前2001嗰個一樣嘅。

但係你睇3054，3054就改咗嘞。3054，你見到"6.2.3"喇，「銅管與管件滲錫熔接」，跟住嘞，「煬之熔點極低」--個「點」字改番，「一般採用石油氣噴燈，已可應付」，咁「此乃日漸普遍之紅銅管接駁方式。」呢一句就係跟番之前㗎喇，但係加咗一句段，「施工的銅管焊接物料-錫線（不含鉛及呈交焊接物料無鉛證明書）須符合水務署標準和批準後方可使用，而錫焊接駁的焊位須使用無鉛錫線焊接。」你見到吖嘛？

答：見到。

問：Just to help you喇，你睇睇3072，亦都係有頭先我哋睇過，水務署出嗰個通函，2015年1號。

答：係。

問：咁即係你都係講番，就係即係自從出咗鉛水事件，亦都收到水務署嘅通知，咁你哋負責嘅同事就即係更新你哋嘅教學嘅材料，咁就加咗頭先講關於無鉛嗰part落去，係咪咁嘅意思呢？

答：係，喺個syllabus嗰度係加番落去。

問：但係你講就係其實syllabus expressly加，但係其實實際不嬲都有講㗎嘞？

答：其實我同咗差唔多有五個導師傾過，佢哋五個導師都有同我講過，佢哋係有差唔多教呢，話畀佢聽有鉛、冇鉛嘅分別喺邊度。

問：好。

主席：咁嗰五個導師話個分別喺邊度呀？

答：我諗問呢個，或者我唔係好清楚，因為我唔係...

主席：唔係，因為我哋得一個導師嚟之嘛，咁你問到...

石先生：係，嗰位李先生，我會問佢。我打算就係問佢嘅，一陣間係。

主席：係喇。

石先生：因為陶先生如果佢話佢唔係真係負責落手落腳去教，我諗就留番李先生。

主席：都得。

石先生：即係佢除咗講唔准、唔可以用鉛，有冇講點解，諸如此類，咁樣我都會即係跟進嘅。

問：但係，陶先生，不如即係作為一個 common sense 嘅問題，即係你自己個人有冇認知係焊料係唔可以含鉛嘅呢？

答：我自己就...

問：即係發生呢個鉛水事件之前。

答：之前我係冇嘅。我都係覺得係鉛就鉛喇，咁我都唔知道係-- for example，有啲係會太 toxic 嘅，in terms of 呢樣嘢。

問：哦，okay，好。

答：不過係即係冇注意到囉。即係唔係話係唔知，不過係唔注意係會有咁大嘅影響。

問：好，唔該。其他你嘅嗰啲 bundle 裏面有好多嗰啲 exhibits，其實我 go through 晒佢哋，基本上就係反映番你 8(a)、(b)、(c)、(d)、(e)、(f)嗰啲唔同嘅課程...

答：係。

問：...嘅 syllabus 嘅啫。咁但係即係嗰度就未必真係關我哋今日講嘅大工、中工嘅事情。我唔花時間走去同你再 go through 嗰度嘞。

石先生：咁就我冇其他問題，主席。

黎先生：我有一個問題想問一問。你嘅證人供詞嘅第 14 段嗰度講，CIC 就係提供啲中工、大工嘅嗰啲嘅訓練同埋考試喇，就係唔提供關於係 licensed plumber（水喉匠）嗰啲嘅訓練嘅。呢個係有冇特別嘅原因㗎？係一個政策上嘅決定，定係點樣樣？

答：...（聽不清）因為我哋讀完個中工同埋大工，唔係代表佢有--例如，for example，有啲-- WSD 規定咗一定要個 licensed plumber 嘅。咁如果你考到個中工同埋大工，唔係代表你可以做 licensed plumber 嘅。你要去埋、讀埋喺 VTC，Vocational Training Council 嗰度，建訓局嗰度讀多個課程，讀完咗之後，合格晒之後，你先至可以 become 一個 licensed plumber。

黎先生：我明白。我個問題就係點解你哋唔提供嗰啲嘅課程呢？

答：因為我哋係好多時都係人哋係 basically nominate or 委任咗我哋會教啲課程，同埋就好似--例如，for example，中工、大工，就係法例委任咗我哋喇；in terms of licensed plumber，就係 WSD 佢會有個-- basically 係個即係--委任咗，咁佢哋今次就委任咗 VTC 做嘅，咁就係唔係我哋做。

黎先生：即係話係因為冇委任到你哋，...

答：係嘞。

黎先生：...所以你唔做；唔係你哋做唔到？

答：其實我哋啲同事好多時個個--即係有啲導師考晒，已經 licensed

plumber㗎嘞。

黎先生：係，唔該。

主席：我想問下你，頭先石大律師都帶過你睇，譬如好似講番去X3，2219。呢個heading，我睇番個heading，寫住「房署工程嘅水喉安裝訓練課程」。點解嗰陣時會咁specific有個房署嘅工程嘅呢？

答：你見到我喺個證人嘅即係嗰個statement嗰度都有講，我哋久唔久我哋都有啲唔同嘅機構都走嚟搵我哋，就可唔可以做啲課程畀佢哋。咁其實唔係淨係房署，有第二啲，好似CSD，Correctional Services Department。

咁點解我哋會咁做呢？因為我哋都想，如果有啲idle time，啲導師唔係教緊書都好喇，咁其實我哋都想expand到我哋嘅scope同埋係做多啲嘢。咁同埋我哋水喉嗰度都係缺人嘅，咁我哋想多啲嘅即係training，令到啲人真係可以攞到牌，可以做到嘢。

主席：所以嗰陣時就房署就特登叫你哋辦一個課程就畀房署嗰啲contractors嗰啲工人？

答：係。

主席：唔該。

有冇人有問題？冇人有問題。

唔該你，Mr To。

答：Okay，唔該晒。

主席：Thank you。

係。

石先生：主席，馮女士，我嘅理解就係返咗嚟嘞。

主席，可以一係而家一個早啲嘅 morning break，跟住 call 馮女士，定係我哋而家直落做？

主席：或者我哋 break 一 break 先喇--即係叫咗馮女士先至再叫 CIC 嘅另外一位導師？

石先生：或者如果主席覺得話一氣呵成，聽晒 CIC 先，亦都可以，subject to 馮女士等唔等到下晏。

主席：因為我哋橫掂聽開 CIC，就不如聽埋 CIC，係咪好啲呀？

殷先生：因為我嘅理解就話係第二--即係完咗第一個證人，就係馮女士。如果佢方便嘅，佢就等喇，好唔好？畀我問一問。

石先生：主席，我哋之前係講過話 call 咗 CIC，陶先生，跟住就馮女士返嚟，跟住先至李先生嘅。咁...

主席：我冇所謂嘅，其實。

石先生：你冇所謂。

主席：冇所謂。

石先生：但係殷先生話想問一問馮女士。如果要等到下晝，佢又唔...

主席：咁不如我哋而家 break 一 break 先喇，跟住十一點半再繼續馮女士嘅證供喇，好唔好？

石先生：好呀。

上午 11 時 11 分聆訊押後

上午 11 時 32 分恢復聆訊

出席人士如前。

殷先生：主席，下一位證人就係馮宜萱女士。

主席：好呀。早晨。請宣誓。

香港房屋委員會第二證人：馮宜萱（房屋署副署長（發展及建築））（重召）再以本地話宣誓作供

殷先生主問

問：係，馮女士，你之前都喺呢個委員會度作過供㗎嘞。

答：係。

問：所以對個程序都應該耳熟能詳咁樣。而家我係幫你讀一次你個--做咗一份--第二份嘅書面證供。係根據委員會有啲要求，作嘅第二份口供。

答：係。

**COMMISSION OF INOUIRY**

**SECOND WITNESS STATEMENT OF**
**ADA FUNG YIN-SUEN, JP,**
**DEPUTY DIRECTOR OF HOUSING (DEVELOPMENT AND CONSTRUCTION) OF THE HOUSING DEPARTMENT**

1. 1, ADA FUNG YIN-SUEN served a First Witness Statement dated 29 October 2015 to supplement the witness statement of ANTHONY CHEUNG B1NG- LEUNG, the Chairman of the Housing Authority, addressing the Requests set out in Lo & Lo Solicitors' letters dated 12 October 2015 and 13 October 2015. 1 now make this Second Witness Statement arising out of the matters raised during my evidence to the C01 on Day 4. This relates to information and documents concerning the development of the specification in 2002 for use of copper, pipes in fresh water plumbing system of the Hong Kong Housing Authority (HA) buildings.

**Development of Specifications for Copper Pipes and Fittings**

2. uPVC-lined galvanized steel pipes had been specified for the freshwater plumbing installation in HA buildings since 1994 to replace galvanized steel pipes which had been causing a "yellowish water" problem.

3. 1n January 1999, at the 4th meeting of the Liaison Group on Construction Quality (LGCQ) of Housing Department (HD), the then Management Branch (MB) (now the Estate Management Division (EMD)) raised that they would use copper pipe after meter and uPVC-lined galvanized steel (GS) or lined ductile iron pipe before meter for re-plumbing work. Copper pipes were readily available in the market in case repair work was required. The then Senior Maintenance Surveyor/Technical Development (SMS/TD) of MB, as requested by the Chairman of LGCQ, passed relevant information to the then Chief Building Services Engineer/2 (CBSE/2) of the then Development and Construction Branch (DCB) (now the Development and Construction Division (DCD)) on 26 February 2002 for a study to follow MB's practice (memo from SMS/TD to CBSE/2 is now produced and shown to me marked **"Exhibit 1"**).

4. A report which summarized the advantages and disadvantages of the use of copper pipes and uPVC-lined GS pipes was subsequently prepared by the then CBSE/2's team. The focus of the report was on the operating pressure, jointing and durability of copper pipe and uPVC-lined GS pipe. The part of report on copper pipe jointing- covered only the soldered and compression joints with particular emphasis on their pressure rating and reliability. The discussions and review did not touch on the material aspect of soldering alloy. The report was discussed at the 7th LGCQ meeting in September 1999. MB preferred specifying copper pipe due to its ease of installation, alteration and maintenance. Members of LGCQ were requested to provide

feedback to the then CBSE/2 for further study in respect of the durability of different plumbing materials, life cycle cost and preference of end-users.

5. The use of copper pipes and uPVC-lined GS pipes for fresh water plumbing system installation was further discussed at LGCQ meetings thereafter. It was concluded at the 15th meeting held in February 2001 that the use of uPVC-lined GS pipes would not be ruled out. However, the use of copper pipes could be treated as an alternative when appropriate. My review of the documents reveals that the use of copper pipes for fresh water supply was not discussed again after the 16th LGCQ meeting held on 2 April 2001.

6. There are no records of discussion on the material aspect of soldering alloy for copper pipe joint at the aforementioned LGCQ meetings (minutes of LGCQ meetings no. 4 to 16 and the report mentioned in paragraph 4 which forms part of the minutes of meeting no. 7 are now produced and shown to me marked **"Exhibit 2"**).

7. According to records, WONG BAY, the then Assistant Director/Management (2) and Co-chairman of LGCQ, who represented HD to attend the Advisory Committee on the Quality of Water Supplies (now known as Advisory Committee on Water Resources and Quality of Water Supplies) ("ACQWS") from 2000 to 2007 had not raised any matters of the ACQWS for discussion at the LGCQ meetings.

8. Following the LGCQ's decision at the 15th meeting, a team of Building Services (BS) professionals (the BS team), led by NG TAT-KWAN (the then acting Senior Building Services Engineer/C7 and now CBSE/2 who gave evidence to the COI on 13, 16 and 17 November 2015) and reporting to the then CBSE/2, was responsible for the development of the technical specifications. The BS team drafted the specifications for copper pipes

and fittings to comply with the requirements of the Water Works Ordinance, Water Works Regulations and relevant British Standard, and also taking into consideration the trade practice and market availability.

9. A working group was set up by the then Chief Architect/Design & Standards , Chief Quantity Surveyor/Central Services, Chief Quantity Surveyor/Project and Chief Building Services Engineer/2 in early 2002 to look into the use of alternative materials in cold water supply installation with a view to enhancing their pricing competition. Subsequently, three meetings chaired by the then Senior Quantity Surveyor/Standard Block were held on 11 January 2002, 4 February 2002 and 25 February 2002 respectively to decide on the ways to provide an option for building - contractors to use alternative materials in fresh water plumbing installations. Discussions at\, these three meetings mainly focused on the preparation of tender/contract documentation for use by project teams (minutes of meetings no. 1 to 3 are now produced and shown to me marked **"Exhibit 3"**).

10. The Paper DCB 46/02 on "Use of Alternative Piping Material for Cold Water Supply Installations in HA Buildings" (as now produced and shown to me marked **"Exhibit 4"**) was submitted by the then Assistant Director/Development (AD/D) on 10 July 2002 to members of the Development and Construction Management Board3 (DCMB) to seek their approval by presumption.

11. No comments or queries were raised except one from me on 17 July 2002, as the then Assistant Director/Quality (AD/Q), concerning the timing for review of the implementation of use of alternative piping material for cold water supply installations in HA buildings (memo from secretary of DCMB to AD/D is now produced and shown to me marked **"Exhibit 5"**). Clarification made

was accepted by the then acting AD/Q on 19 July 2002 (memo from CBSE/2 to AD/Q and email from acting AD/Q to CBSE/2 are now produced and shown to me marked **"Exhibit 6"**).

12. DCMB Instruction No. 25/02 on "Use of Alternative Piping Material for Cold Water Supply Installations in HA Buildings" (as now produced and shown to me marked **"Exhibit 7"**) was issued by the then AD/D on 23 July 2002 for implementation.

13. DCMB Instruction No. P13/06 - "New or Revised Specification Clauses Arising from Feedback to Specification Library 2004 Edition (Batch 3)" was issued by the then acting Assistant Director (Development & Procurement) on 4 August 2006 (as now produced and shown to me marked **"Exhibit 8"**) promulgating, among others, the deletion of the specification clauses of uPVC-lined GS pipes in response to the following:

(a) Copper pipe was more welcome by contractors and was readily available in the market;

(b) Plumbing industry possessed much better experience and skill in installing copper pipes;

(c) Workmanship required for the installation of uPVC-lined GS pipe was more stringent and hence, it would impose more burden to the site supervision team; and

(d) Suppliers of uPVC-lined GS pipe had been gradually withdrawing from the shrinking market during the past few years.

**Consultation on Specifications for Copper Pipes and Fittings**

14. During the course of specification drafting, approval of the Water Supplies Department (WSD) had been sought

for the plumbing proposals for the active standard domestic blocks that incorporated more than one design to allow the choice of alternative piping materials (memos to and from WSD are now produced and shown to me marked **"Exhibit 9"**)

15. The draft specifications for copper pipes and fittings had been circulated on 22 January 2002 to the then Chief Architect (Design & Standards) (CA/D&S), Chief Quantity Surveyor/Central Services (CQS/CS) and Chief Manager/Management (Support Service 1) (CM/M(SS1) of HD for comment (memo from the then CBSE/2 to CA/D&S, CQS/CS and CM/M(SS1) is now produced and shown to me marked **"Exhibit 10"**). No comments were received from the then CQS/CS and CM/M(SS1). Comments on the format of the specification clauses and suggestions on minor installation requirements were received from the then CA/D&S and incorporated into the specifications '(memos between the then CBSE/2 and CA/D&S dated 8, 20 and 22 February 2002 are now produced and shown to me marked **"Exhibit 11"**).

16. The Hong Kong Construction Association (HKCA) had also been consulted and they had no comment on the materials stipulated in the draft specifications for copper pipes and fittings (minutes of the two HKCA - HD Bi-monthly Liaison meetings no. 14 and 15, letter, fax and email in respect of the consultation are now produced and shown to me marked **"Exhibit 12"**).

**Consideration re: Specifying Lead-free Solder in Specifications for Copper Pipes and Fittings**

17. As explained in the above paragraphs, the specifying of lead-free solder for copper pipes and fittings had not been discussed by the LGCQ or DCMB during the development and approval process.

18. As NG TAT-KWAN, now CBSE/2 of HD and as one of the then specification drafters explained at the COI hearing

on 16 November 2015 the major considerations of specifying lead-free solder in the specifications for copper pipes and fittings included the following:

(a) Lead-free solder was not something new.

(b) Leaded solder and lead-free solder are listed in Table 6 of BSEN 1254-1 but a footnote to this table states that soldering alloy with lead and brazing alloy with cadmium are not permitted for installations for water for human consumption (as now produced and shown to me marked **"Exhibit 13"**). It was considered that lead-free solder requirements had not been presented sufficiently clearly. As the specification drafters they had a duty to make it clear in the specifications.

19. I would also mention that the General Specification for Building 1993 Edition (issued by the Architectural Services Department) already required that solder used for jointing potable water pipes shall be lead free and to BS 864:Pt. 2 Table 17 (Bundle B15.3, item 376, page P39597 to P39599). This was long before we developed the specifications for copper pipes and fittings in 2002.

問：馮女士，你剛才聽我讀過一次你嘅第二份證人口供，你有冇嘢需要補充或者更改？

答：冇。

問：你願意採納佢作為呢個研訊入面你嘅口供嗎？

答：我願意。

殷先生：我冇其他嘢問，主席。

主席：係。

石先生盤問

問：馮女士，早晨，我有啲問題呢係關於你最新嘅呢一份證人供詞，想同你跟進下嘅。就係我想你睇下第 4 段。第 4 段呢，你講到有一個報告呢，就係去即係簡摘嘅形式寫出就係銅喉同埋 lined GI pipe 之間嘅好處，或者唔好處喇，咁呢一份嘅報告呢，就喺 40002 頁嘅。你見到喇？你面前有個 file 應該。40002，你見到，你見到嗎？40002 頁，15.4。

答：40002。

問：你面前應該有一個 file，15.4，B15.4 嘅。

答：係。

問：係。我想你睇睇 4005--你等等吓。我想你睇睇 39998。

答：係。

問：39998 嘅 4.3.1。

答：係。

問：呢個係 LGCQ 嘅第 7 次會議嘅 minute。

答：係。

問：佢話"An interim report was tabled."嗰個 interim report 嘅意思就係 40002 嗰個 report，對嗎？

答：應該係嘅。

問：係，因為佢唔係寫 interim，但係即係我唯一見到可能就係--呢一個就係嗰段所謂嘅 interim report，對嗎？

答：正確。

問：得，咁喺呢個會議嗰度，咁大家攞出嚟傾過，咁喺第 7 次會議嗰度，

咁跟住輾輾轉轉就去到第 15 次會議喇，2001 年。咁 2001 年嗰個會議嘅 minute 就喺 40055 嗰度嘅，我有一個字眼上嘅問題想問一問你。就係，個字眼就係話"not ruled out"，你睇一睇。2.2.4。"The use of G.I. pipes has not been ruled out however the use of copper pipes may be considered in the future."

答：係。

問：講得好似好唔係好確實咁樣，一路嚟講，房署嗰啲 spec.都係寫，或者容許 GI pipe，line GI pipe。

答：係。

問：咁嗰陣時嘅提議就係不如容許，或者直情寫明要求，好唔好即係考慮下 copper pipe 作為另外一種即係可能嘅物料，咁所以呢度所講話"has not been ruled out"其實佢意思即係話，仍然繼續用咁解啫，係咪呀？

答：佢即係唔排除用呢隻物料嘅可能性。

問：但係你已經用緊㗎喇嘛，line GI pipe？

答：係。

問：咁唔使排除㗎。

答：似乎我睇佢字裏行間就當年就講，係咪應該一次就轉咗佢做銅喉呢咁。

問：得。

答：咁所以佢呢個就似乎寫得係有所謂留有少少餘地，就係話可能都兩樣可以同時並存嘅...

問：所以我話即係有少少...

答：..係咁嘅意思嘅。

問：...即係留番少少餘地喇，我正想講就係。

答：係。

問：仍然繼續用GI--lined GI pipe，即係我哋唔ruled out佢，我哋唔改任何spec.話唔用嘞，但係我哋keep the options open。

答：係。

問：Keep the options open，咁所以其實喺呢個會議，2001年之後呢，其實純粹講啲spec.嚟講呢，係繼續用番lined GI pipe㗎嘛寫，係咪？對嗎？

答：對，跟住甚至乎係兩樣物料嘅規格呢，都喺合約裏面，係容許佢選用。

問：我知，呢次之後就開始有好多工作做咗，就開始寫喇。

答：正確。

問：但係由於呢個會議，咁就kick start咗一連串嘅process。

答：係。

問：走去研究呀，或者開始有唔同嘅人要去做一啲即係草擬嘅工作咁嘞。

答：係，同意嘅。

問：咁但係呢個會議之後呢，首先就唔可以咁快開始即刻就話我准你用copper嘞，因為啲specification都未諗掂。

答：係。

問：咁所以其實中間有個你叫緩衝又好，你叫做準備嘅時候又好呢，就係要嚟等呢啲spec.搞掂咗嘞，即係等嗰啲--即係technical requirement諗掂咗嘞。

答：係。

問：咁然之後先至喺啲合約度寫話我准許你用copper。

答：係。

問：咁嘅時間對嗎？即係2001年嗰開始，就去開始諗，詼與銅喉有關，相關嘅一連串嘅specification。

答：係。

問：就2001年呢個會之後開始嘅，對嗎？

答：唔，對。

問：好嘞，你嘅第9段呢，你睇番你嘅證人供詞嘅第9段呢，你就話"A working group was set up by the then CA/D&S"呢個係嚴女士，係咪呀應該係？

答：呢個...

問：當時。

答：當年可能係Chris Gabriel。

問：哦，唔緊要喇，總之呢個working group喺2002年初就"look into the use of alternative materials in cold water supply installation"，諸如此類，諸如此類。

答：係。

問：跟住就好多會開，呢一個working group開始係咪就係喺2001年後，第15次LGCQ會議開咗之後，話開始要explore，即係用，或者consider...

答：嗄。

問：...可能可以用銅喉之後引申出嚟嘅一啲工作。

答：正確嘅。

問：可唔可以咁講？

答：由第15次LGCQ meeting見到呢，當年嘅CA/D&S，的確就係Mr Chris Gabriel。

問：係。咁總之基本上你嘅證人供詞嘅第5段之後至到第9段所形容嘅一連串嘅工作，都係嗰個第15次會議引申出嚟嘅跟進？即係要study關於銅喉。

答：可能甚至之前，因為佢--如果佢嗰啲--佢開嘅會議...

問：咁你個interim report之前都做咗啲嘢㗎喇已經？

答：係，咁佢哋不斷都有啲工作做緊，但係到開會先至係確定，咁跟住再決定開一啲會，咁所以就佢哋呢幾位同事呢，就 form 咗一個 working group，就要去研究點樣將佢擺落合約裏面使用。

問：好，跟住呢就開始有一啲文件見到呢，你個人係有即係牽涉，即係提交咗一啲 comment 或者意見㗎嘞，就係嗰個 DCMB paper，40080 喇，你睇睇。

答：呢張。

問：40080。

答：呢個，係。係。

問：就係 2002 年嘅 7 月。咁 DCMB 就出咗呢一個 paper，就係即係做咗好耐嘢，做咗好多功夫之後呢，就開始佢哋覺得可以提議就係接受銅喉作為另類嘅一個建築嘅 material。

答：係。

問：水喉嘅 material 喇。咁就跳到 recommendation。

答：唔。

問：就係出 Appendix 1 嗰個 draft DCMB Instruction 喇，咁就 12 個月之後就檢討。

答：係。

問：咁你睇番嗰個 DCMB 嘅 instruction，40084 呢，就"Technical Requirements"，就 4(a)、(b)、(c)咁喇。

答：係。

問：咁就有幾種配搭喇，一係就全 GI pipe。

答：係。

問：一係就全銅喉，一係就銅喉加 ductile iron pipe。

答：係。

問：但係全銅喉係有限制嘅。

答：係。

問：因為有啲即係壓力呀，諸如此類，同埋喉管嘅大細，即係有客觀嘅 constraint。

答：係。

問：好嘞，你就有一個 manuscript 嘅意見喺度，你睇 40092，呢個就係，即係好多時候，我明白呢，就係即係做呢個證人供詞，你會係搵番一啲可能你冇個人牽涉嘅文件，但係呢一份就係你有個人牽涉嘅。

答：係。

問：40092，就係 circular 過畀你，你嘅手寫 comment。

答：係。

問：咁我讀番出嚟就係"I have reservation on this recommendation, 12 months is not long enough to draft a conclusion."我有冇讀錯？

答：正確。

問：咁所以你睇完呢一份嘢之後呢，你嘅唯一嘅意見呢，就係關於嗰個檢討期應該係等耐啲，定係 12 個月就夠呢咁。

答：係。

問：你嘅唯一嘅意見就係咁樣。

答：係，因為佢呢份文件嘅目的呢就係即係 seek Members' approval。

問：係。

答：就等我哋--等可以採用一隻另類嘅物料吖嘛。

問：係。

答：咁所以我呢個就係--係一個好即係大路嘅睇法，就睇下佢呢個時間係咪足夠呢，如果佢要--就可以分別係篩選到邊隻物料呢，係更加恰當

嘅，咁呢個就係一個好 general 嘅 comment。

問：你頭先用咗大路呢兩個字，你嘅意思係唔係即係你睇呢一個 proposal，或者呢個 draft DCMB Instruction，即係呢個建議，即係呢個 paper 就係要求啲 circular 咗嘅人士去 comment，係咪出嗰份 DCMB Instruction 吖？

答：係。

問：即係你用大路呢個即係形容詞，你嘅意思係即係你係用比較高層次嘅方法去睇就係話，係咪用呢三種 alternative，而你嘅注意力唔係在於一啲叫做細節啲嘅 soldering material 嘅--嘅--嘅嘢，你嘅意思係咪咁？

答：我嘅意思可以係咁樣理解，因為佢呢份 DCMB 嘅 paper 呢，佢嘅 purpose 呢，都講得好清楚，佢寫"seek Members' approval to allow choice of alternative piping materials for cold water supply installations in HA building contracts by contractors at time of tender and also for projects under construction."

問：唔。

答：咁呢個就係嗰個即係個文件嘅目的喇，咁當然我就有圍繞住呢個目的呢，就去畀 comment 嘅。

問：好，其實佢嘅 recommendation 係(a)同(b)嘅啫。

答：係。

問：你睇番，咁如果從你嘅角度嚟講，即係我明白你就話我大路，咁我睇(a)同(b)嘅啫，即係出唔出，或者幾耐去 review，但係從你嘅角度嚟睇，如果有任何係關於仔細，或者啲 technical 嘅 implementation。即係話用咗銅之後可能有一連串嘅技術嘅嘢要去做個喎，有冇人有異議呀，提議呀，即係呢啲仔細啲嘅嘢，係邊個情--邊個階段，邊啲人去提出嘅呢，如果唔係喺呢個 DCMB 呢個 paper approval 呢個階段？你覺得係之後會有其他嘅人負責㗎嘞？

答：其實咁講喇，可以行到呢一步呢，我哋都知道同事呢，喺經過一個正常嘅 drafting 嘅途徑呢，佢應該 technical 部分呢，佢應該係經過深思熟慮先至寫出嚟，咁但係呢 Appendix 1 呢，你就可以睇到

40093 嗰度...

問：係，嗰個 draft 就係 instruction，係。

答：係，咁跟住呢，我又手寫咗一啲嘢喺度，嗰個叫"Annexes not attached"。

問：係。

答：咁咩嘢係 annexes，就係話個 annexes 係佢嗰啲 detail 細節嘅 special processes。

問：係。

答：佢就冇喺文件嗰度呢，就夾落去。

問：係。

答：咁於是呢，我就嗰陣時都好多口，就走去問佢攞嚟睇嘅添。

問：係，因為 40097 就話呢，"Annexes A to D (not included to save paper, available on Member's request)"，咁所以就...

答：係，咁因為我問，咁呢，佢就影咗一份畀我睇。

問：係。

答：就係咁嘅情況，即係喺當年，一般運作呢，就係除非我哋特別有要求，如果唔係嘅話呢，嗰啲負責技術專科嘅同事呢...

問：唔，唔。

答：...佢應該即係經歷過一個都幾仔細嘅一個 preparation 同 vetting process，先至去到呢一步，提交文件呢，係畀 DCMB 去批核嘅。

問：唔。

答：咁喺呢一次嘅傳閱，去批核嘅情況底下呢，我就有一個 comment，就係話 12 個月，會唔會時間太短喇，第二，我哋話佢冇畀 annexes 畀我哋睇喎，問佢攞嚟睇。

問：唔。

答：就係咁樣。

問：亦即係話你睇呢一個 DCMB 呢個 paper 決定出唔出呢個 instruction 呢，就可以話係講個信字，就係一啲技術上嘅嘢，應該有人 okay 咗㗎嘞，你嘅角色就係，即係決策上或者我哋叫做，政策上，原則上，係咪去做呢樣嘢，而唔去睇比較即係仔細啲，啲技術性啲嘅，因為你覺得其他同事係佢哋嘅即係分工嚟講，應該已經係睇晒㗎嘞？

答：呢個係正確嘅理解，咁當然就係如果我哋有咁嘅負責去就係批核呢啲文件，咁當然，諗如果可能嘅話，亦都會睇睇佢裏面嘅細節，有冇啲我哋一望過去覺得可能有啲地方要跟進嘅呢咁，如果唔係嘅呢，喺程序上面，我哋都睇到呢班同事呢，佢經過技術方面嗰個研究，再加埋佢係一個採購方面，亦都顧及埋承建商佢裏面點樣去選用呢，其實佢都做咗一個頗長嘅時間，先去到呢個階段嘅，咁所以我哋有理由相信呢，佢已經係做咗一個所謂有 due diligence 嘅一個 checking process 嘅。

問：佢其中一個 annex 應該係一啲嘅 draft 嘅，即係 revised 嘅 specification，你記唔記得呀？

答：係有嘅。

問：有吖嘛？你睇番譬如話 40097--唔係 40098--40096 呢，40096 個--唔係，你睇番 40094 喇，40094 都講咗即係 Annex A 就係一啲 new 或者 revised 嘅 specification。咁即係有一啲即係合約嘅 revised 嘅 specification 係...

答：係。

問：...即係去處理由准許用銅喉引申出嚟嘅一啲物料呀，嘅要求呀，都會喺呢個 draft 嘅 spec.嗰度出現過？

答：係。

問：你就話你攞嚟睇過，咁當然即係你嘅意思係咪即係攞嚟睇，但係你就唔會話真係--係作為一個好 critical 咁樣走去即係逐 part 逐 part 去嘥咁樣去睇㗎嘞，即係你叫做知道，原來 Annex A 係一沓咁厚嘅 specification，咁就即係冇再深究，可唔可以咁講？

答：係，係。

問：好嘞，我哋睇番你嘅證人供詞裏面嗰個時序，第13段，就講到2006年，呢度跳咗一跳㗎，2006年就係你話有一套"New or Revised Specification Clauses Arising from Feedback to Specification Library"，呢度跳咗去2006年，你即係其實係咪想帶出一個信息係咪就係話2002年開始準人用copper，之後到到二零零六年呢，就即係銅喉，即係收到多方嘅採用呢，就反而其實lined GI pipe其實冇人用㗎嘞。咁所以就你直情係話要喺啲合約裏面delete咗有關嘅specification。

答：呢個係正確嘅，即係其實嗰個review period呢，就唔係一年，而係長過一年喇。

問：唔。

答：咁到2006年呢，都經過幾年嘅歷練，就大家都見到其實嗰個市場一面對呢，都用晒係銅喉。

問：係。

答：就唔再選用係uPVC-lined嘅GI pipe，...

問：咁...

答：...咁嗰陣時呢就可以將佢係由個Specification Library呢就將佢remove嘞。

問：即係直情准--即係唔會寫話容許你用lined GI pipe呀？

答：係。

問：直情淨係寫話用銅喉？

答：用銅喉，淨係用銅喉，嗄。

問：或者銅喉同ductile？

答：係嘞。

問：你睇番就係有啲draft specification，第15段喇，頭先嗰個DCMB paper呢，就係2002年7月嘅。

答：係。

問：嗄，咁而家即係 revise 番少少，就係嗰啲 specification 呢，其實係有 consult 過嘅，第 15 段，呢度我唔知道 consult 期間你知唔知道，所以我--即係你就列舉咗呢啲文件喇，咁但係即係我都想 show 畀你睇睇，睇下你當時有冇個人嘅認知，噢，你睇睇 40133 頁。40133。其實 start with 40132 嘅。

答：係。

問：40132 呢就係 S.C. Leung 佢喺 2002 年初就 enclose 咗一拃嘅 specification，就係包括咗即係銅喉同埋 ductile iron 嘅 pipework，咁呀有一啲技術嘅 specification。

答：係。

問：咁就邀請即係一啲 recipient 呢，就作出呢個啲 comment，當時喺呢個 consultation，呢個徵詢嘅過程中，你有冇參與？

答：我係冇參與到。

問：冇參與嘅，好。即係畀你望一望喇，就 40135 你就見到呢，初稿呢就寫住"Only lead-free category solders shall be used."嘅。40135 個底嗰度，你見到？

答：係，見到。

問：你見到嗰度有即係呢句咁嘅嘢喇。

答：係。

問：呢個係一個初稿嗰度嘅。咁跟住呢，就 Miss Theresa Yim 呢，CA/D&S 呢。

答：係。

問：喺 40142 就有一個 memo，就係回應 S.C. Leung 先生佢喺 1 月 22 號...

答：係。

問：...嗰個 memo 喇。

答：見到。

問：呢個 Miss Theresa Yim，恕我即係呢個問一句，佢哋兩個負責唔同範疇，但係佢哋 in terms of hierarchy 係咪叫做平排㗎差唔多？

答：全部 Chief 都平排嘅。

問：Chief 係平排嘅？

答：係。

問：Okay，所以 Chief Building Services Engineer 同 Chief Architect 就平排？

答：正確。

問：Okay，咁所以就冇話邊個要指邊個做嘢咁嘅，即係呢個係 by way of comment，而唔係一個 instruction 咁樣會？

答：其實呢個係大家有分工、有合作，需要一齊共事嘅一個過程嚟嘅。

問：得，okay。咁呢個 Miss Theresa Yim 就話，(b)嗰度，"To consider inclusion of quality tests for copper pipes / fittings (may refer to quality tests for uPVC lined galvanized steel pipe and fittings)."咁呢份應該冇 cc 到畀你嘅應該？

答：冇嘅。

問：冇，咁佢就叫梁先生，佢考慮其中一樣嘢就係要 include 一啲 quality test，即係喺個合約條款度，係要求埋即係嗰個承建商，就要提供埋 quality test，或者可能要容許個 employer 去即係 insist on quality test，你見到喇？

答：佢...

問：因為一般嚟講，如果合約冇寫嘅話，你要做就要你自己畀錢㗎嘛，如果我嘅理解。

答：我嘅理解，我問啲同事呢，其實當年所謂呢個 test，呢個 quality for copper pipes 就 may refer to quality tests for uPVC lined galvanized steel pipe and fittings...

問：係。

答：...嗰個原意呢，其實因為佢呢個係應該係指--泛指一個所謂叫中央做嘅 pipe test 呀。

問：係。

答：因為當年嘅 uPVC-lined GI pipe 呢，就冇 British Standard 嘅。

問：係。

答：咁就靠佢哋自己呢就做一啲 testing，咁佢哋其實當時就算佢轉用 specification 呢，都要 test 下佢，例如有啲 site tests for pipes and fittings，熱水會唔會冷縮熱脹，令佢有影響呀等等嘅嘢呢。

問：唔。

答：佢就叫 CBSE/2 嗰邊呢，做一做係呢一類嘅 test 嘅，咁佢呢個就唔一定係需要話擺落合約要承建商去做嗰啲 testing，而係提醒就係 CBSE/2 佢轉呢隻物料嘅時候，佢有冇一啲所謂呢一--呢啲 testing 佢要做番，等大家可以安心呢咁樣，咁據我理解...

問：即係--sorry。

答：...佢哋當時呢亦都有做咗一啲係所謂叫做 central 做一啲 pipe test 去證明呢佢全部呢一啲 specification 呢，都係合資格嘅，咁樣嘅原意嚟嘅。

問：Okay，你嘅意思就--你嘅理解，Miss Theresa Yim 佢喺呢個 memo 度叫 Mr S.C. Leung，或者叫 CESE/2 喇，因為唔係對住一個人呀，對住個 post 講喇。

答：係。

問：叫 CBSE/2 做嘅嘢呢就唔係叫佢考慮喺合約條款裏面加上一啲條文，係要求啲承建商要呈交一啲 quality test for individual 嘅 fitting。

答：係。

問：唔係咁嘅意思。

答：唔。

問：你嘅理解就係呢，佢係話當你決定喺個 specification 裏面容許某種物料嘅時候，你自己確保你見到一啲--見過一啲 quality test 嘅 result，令到你自己心安理得覺得容許呢樣物料用，係 okay 嘅。

答：係，正確。

問：就係咁解，你嘅理解係咁樣？

答：係呢個範疇，呢個比較高層次少少嘅 test 嚟嘅。

問：係，即係 before 你寫呢個落個 spec.度，你就要確保就係你有足夠嘅一啲 safeguard，test 過又好，點都好，就確保你寫得落去嗰樣嘢呢，就係 okay㗎嘞。

答：係。

問：咁但係如果我寫落去唔係寫某種牌子，我淨係寫落去話我准你用某種 solder，或者我准你用 copper pipe 咁先算喇，咁你要求佢高層次嘅 test，test 乜嘢呢咁？

答：佢例如係譬如用落熱水同冷水喇，同埋佢同 ductile iron 嗰一個 comparability 等等嘅嘢，佢好多方面呢，其實都會係佢啲同事有個要求，就係做一啲測試，確保佢呢啲 fittings 同埋佢呢啲用嘅喉管，做完出嚟呢，係唔會有一啲即係副作用，係令到佢有一啲 undesirable 嘅 effects 等等嘅嘢。咁其實 test 係 refer 好多種唔同嘅 test 嘅。咁佢呢一個即係可以話嗰個歷史，如果我睇番，佢就係 public reference to uPVC-lined 嘅 pipes 呢，嗰啲 test 的確就係有一啲咁嘅要求囉。咁但係呢，其實如果喺用銅喉嘅話呢，因為既然有 British Standards，有好多 test，係可以喺 BS 嗰度都已經參照嘅呢，咁其實佢呢一步呢，就唔係講嗰樣嘢嚟嘅。

問：唔係講邊樣嘢呀，sorry。

答：即係唔係講話，諗要寫落合約裏面，做咩嘢 test，嗰個層次嘅 test，類似係。

問：因為既然已經有 British Standard 嘅話就已經--話講得出 BS，就即係話你要跟 BS 裏面所講...

答：係。

問：...嘅嘢，係咪咁嘅意思呀？

答：係，正確。

問：我同你睇番呢個回覆，個回覆呢就係 40143。Sorry，唔係 40143，我睇番，40158，40158。呢個就係應該係 S.C. Leung 嘅下屬，Mr 伍達君（譯音）。

答：伍達群，係嘞。

問：伍達群，嗄。佢喺 point 3 就回應 CA/D&S 嗰個 quality test 嗰個 point 喇，"Regarding the request to include quality tests for copper pipes/fittings, please note that we have already included relevant international standards on the manufacturing and quality testing aspects for all pipes and fittings and specific type test for compression type fittings in the proposed technical specifications. Tests for other purposes are not envisaged at the moment."即係你嘅理解，其實 Mr Ng make 緊佢嗰個答案係咩嘢意思？即係話我寫--係咪就係頭先你所講就係話...

答：係。

問：...如果我哋要用嗰種物料，寫到明你要用某種 standard，咁嗰種 standard 就已經提供咗相關嘅一啲尺度，係你要符合嘅一啲尺度，咁所以就唔使要再做一啲中央嘅...

答：Pipe test.

問：Pipe test.

答：嗄。

問：即係我--我想跟進即係 pipe test 嘅意思係乜嘢？始終就係。

答：即係佢中間...

問：如果冇 British Standard 嘅會點做呢？如果冇 British Standard--如果有 British Standard 呢，你嘅意思就係話，我

咪已經話到明，British Standard 裏面話你要某種化學成分，你唔准有鉛，你有一大拃嘅嘢，咁所以你已經知道你要符合咩嘢要求㗎嘞，但係如果冇 British Standard 嘅話，咁你啲 pipe test 係做乜嘢，同埋可以扮演咩嘢角色呢？

答：佢...

問：即係我明白 Mr Ng 嘅答案，就話有咗 standard，所以就冇需要再做啲咩嘢 test 嘞。

答：係。

問:但係如果冇呢啲 standard 嘅話,咁嗰啲 test 會係咩嘢嘅 test 呢？

答：佢要分開一個個部分去做一啲測試囉，即係咁佢以前就係如果 uPVC-lined 嗰啲 GI pipe 呢，佢就要做好多呢啲測試去證實呢，佢係可以達到一啲--某一啲要求，或者標準，咁但係如果佢用銅喉嘅話呢,佢呢一段嘅意思即係話,佢已經係有啲國際標準,即係 British Standard，或者 BSEN 等等呢，佢已經係可能就靠嗰一啲 testing 呢，就已經足夠嘞，係咁嘅意思，所以佢話"Tests for other purposes are not envisaged at the moment."

問：即係如果冇 British Standard，純粹淨係舊時嘅 lined GI pipe，咁就做咗嗰一大拃嘅 test 之後咁點呀？就將嗰啲 test 出到嚟嘅結果，就寫落去個 spec.度，即係話--係咪呀？定係...

答：係，佢咁嘅--即係以前呢，如果佢係--譬如係 uPVC-lined GI pipe 呢，佢係日本嘅 product，佢冇 British Standard，咁但係呢，佢 different components，佢嗰個 uPVC-lined GI pipe 裏面 different components 呢就包括佢個嗰啲 pipe 同埋 lining 呢，就 separately covered by 一個 specific 嘅 British Standard。

問：係。

答：我就要再 refer 去嗰啲 standard，就抽起佢出嚟做 testing，咁變咗嗰個就迂迴好多嘅。就唔係--即係佢如果用銅喉呢，相對地呢係簡單啲,因為佢 BS 已經本身有一啲係 testing 嘅 requirement 等等。

問：唔。

答：佢呢段係咁樣嘅意思。

問：唔。

答：即係佢對比番，因為佢原本 CA/D&S 呀，當年 acting 嘅 CA/D&S 係 Miss Theresa Yim 就問佢，點解你唔係好似 uPVC-lined GI pipe 咁樣去做一啲 test 呢咁，其實佢答得係回應番佢嗰--特別係針對嗰一點呢，答番佢呢一個意思。

問：我明，我想知道，做咗嗰啲 test 之後嘅結果係點呢？譬如話我有 lined GI pipe，我裏面有好多唔同嘅部件，有條管本身，我有嗰啲 lining，我呢呢路路好多唔同嘅嘢。

答：唔。

問：咁條管本身係冇一個 British Standard 嘅，咁我要做一啲 testing，我就係要 test 乜嘢呢？

答：Test 佢 galvanized iron，係有個嗰啲 test，跟住 uPVC-lining 會有一啲 test，咁我就要將佢呢，就分佈唔同嘅即係部分，先去做各種測試，咁呢一啲測試呢，其實都需要有一啲 quality test 係同嗰個 manufacturer 一齊去發展嘅添嘅。

問：即係你意思係嗰啲 quality test，即係 contemplate 緊嘅情況，就係我如果寫呢，我就係會寫某種牌子嘅嘢咁呀，係咪呀？定係某個 manufacturer 嘅嘢？因為咁先至可以 test 到嗰個 manufacturer。如果我好 generic、好籠絡咁樣，我話我畀你用 GI pipe 咁，咁冇嘢 test㗎，因為你都唔知人哋會實質用邊種。

答：一般嚟講，我哋寫 standard 都係寫一個 generic 嘅一個 description 嘅。

問：係呀，嗄。

答：咁所以如果佢要 test 呢，就先要 test to 一啲 standards，咁當然佢呢啲標準呢，就要同當時嗰啲 supplier、manufacturer 同埋有關嘅當局呢，就去建立一啲測試嘅方式囉。

問：唔。

答：咁佢就只有將佢--佢既然呢一種 pipe 係冇一個 British Standard 呢，佢就要將佢每一個部分就將佢分拆，就去 test to 每一個

British Standard 嘅要求，係咩嘢嘅標準等等。咁我相信當年呢，都有一個比較即係可以話複雜啲嘅一個做法嘅，同埋仲有就係 uPVC-lined GI pipe 個 size 呢，同銅喉都唔同，因為佢會大條啲，因為佢有 lining，有 GI，咁佢就會大過--個 size 呀，同個同樣嘅，嘅 pour size，嗰啲水流過呢，佢嗰個出面嗰個外殼，都係會...（聽不清），會再大啲添嘅。即係好多種唔同嘅嘢，其實當年佢哋都要--點解要負責--即係有個時間，就有個緩衝區，等佢兩隻物料可以即係同時並用都做過好多工夫嘅，包括由設計階段，去到 specification，去到合約，每一步都要好仔細咁咁樣諗，所以個過程你係-- 1999 年開始傾，到 2002 年先至叫做成個過程係叫做即係 go through 晒，所以話好多係技術層面，喺當其時，咁多年都已經係可以話研究過喇，最後埋門一腳就 inform 個小組，就睇下點樣樣擺落合約嗰下，就幾個一齊坐埋傾，就係咁樣嘅一個過程同埋一個流程嘅。

問：你嘅意思係咪即係話一個 lined GI pipe 裏面可能有好多唔同嘅成分，條管本身啲 lining，GI pipe 本身呢樣嘢就冇任何嘅 relevant 嘅 standard，但係嗰啲部件本身有，咁所以就其實當日點解 mention 話類似用 GI pipe 嘅做法，就係話，啊，你逐個、逐個部件出嚟...

答：慢慢測試。

問：...test，跟住嵌埋一齊，test 睇下 function 有冇問題，咁係咪呀，你話？

答：係。

問：即係你各個部件要符合嗰個部件嘅 relevant standard，但係你嵌埋咗一齊之後，...

答：嵌埋一齊。

問：...冇一個 standard。但係你用一啲各自都合標嘅嘢，嵌埋咗一嚿之後，會唔會漏水，會唔會盛呢；如果冇，咁就 okay 嘞，咁解？

答：係，正確。

問：但係而家你就覺得因為 relevant 嘅銅嘅部件或者銅喉佢本身已經有相關嘅 British Standards，咁你就唔使再去做咩嘢 test 嘞，因為只要你 fulfil 嗰個 British Standards for the thing，

咁已經得嘞？

答：正確。

問：咁但係就冇咁考慮過係要求提供一啲嘅證明，係證明你符合咗 British Standard 嘅；that itself 就有嘞？

答：冇。我睇番呢一啲，即係來龍去脈，呢啲 correspondence 同 memo，似乎就冇咁嘅要求。

問：即係證明合標呢樣嘢就仍然都係講個信字？

答：係。

問：唔該。我想睇番你有一段，係 40128 嗰度--你嘅第 14 段。你嘅第 14 段，係 39975，你話"During the course of specification drafting, approval of the Water Supplies Department ... had been sought for the plumbing proposals for the active standard domestic blocks that incorporated more than one design"。

咁跟住你就有一個 memo，40128。你提出呢啲，同水務嘅一啲即係來往嘅公文，其實你嘅論點係咩嘢呢？你嘅意思係即係你已經知會咗水務署。咁如果水務署有咩嘢關注，或者佢哋覺得喺部件上有咩嘢值得即係提醒嘅地方，佢絕對有機會提出，係咪咁嘅意思呢？

答：係，正確嘅，呢個係嘅。佢轉物料，特別係佢轉物料嘅時候，佢呢個 SBSE/C1 當年都係做 standard domestic block 嘅同事嚟嘅，咁特別就係佢有啲水喉可能--我就...（聽不清）就話，因為佢連個 pipe size 都會唔同咗嘅，咁佢就會知會水務署，「嗱，我有啲改動」。咁同事可能有兩套圖，都同時並存嘅，咁就請佢係即係明察同埋係批核囉。即係我頭先我都--同埋一個裝置喇，佢 pipe size 都會唔同，因為兩種係唔同嘅物料，有好多嘢佢要有即係 corresponding 嘅 revisions 或者 amendments 嘅。咁呢啲 amendments 就提--可以話--或者水務署話畀我哋聽，「就現在我有兩隻物料嘞，一個就係 uPVC-lined GI pipe，另外一個就係銅喉嘅」，就係咁嘅意思。

問：但係呢個 memo，40128 呢個，其實嗰個主力係講嗰啲 drawing 嗰啲咁嘅嘢，反而就唔係講嗰啲物料嗰啲嘅？

答：係。但係物料佢都--因為同個 drawing 有關吖嘛，就係正正頭先我講，個 pipe size 都唔同，咁變咗就影響埋嗰個 drawing 嘅，咁佢一定就要即係呈交水務署，等佢係審批嘅。

問：係。不過就未必關嗰個焊料嘅問題？

答：未必。

問：可能關粗幼事，但係即係水務署未必 spot 到會有一個 point 關於焊料㗎，係咪？

答：跟住水務署都有一個回覆嘅文件。

問：40130，係吖。

答：係。咁佢提就係 GI pipe 嗰個 lining 嘞。

問：用 cement mortar lining。

答：係，就唔會用 bitumen。

問：係。但係嗰度就係關於 lining 嘅物料啫，係咪？

答：係。咁但係呢一個就係正正就係我哋轉一隻物料嘅時候，咁就大家都有一啲大家可以互相關注嘅地方去互相提點喇。

問：咁伍達群...

答：伍達群。

問：...先生佢嗰個回應，即係頭先我哋睇咗。

答：係。40158。

問：40158 嗰個回應，你個人係明白佢講乜？即係以你頭先所講嘅理解，同埋你係同意佢嘅說法嘅，係咪？

答：係。

問：我另外有幾個問題就係同你嘅證人供詞未必有直接關係，但係就係因為一啲最近我哋知道嘅發展喇，我想問一問你嘅。就係睇報紙，我哋見到，就市建局有個叫做煥然壹居嘅一個項目，你有聽過喇？

答：聽過呢個項目。

問：報紙有講過就話可能驗到啲含鉛嘅水喇，而家仲喺度查緊喇，當然係。咁但係就我哋嘅理解，可能係啱，可能係錯嘅，就係即係市建局嘅一啲項目，佢哋係唔係用即係我哋而家講緊呢啲錫焊嘅。你哋有冇認知呀，你哋？

答：我哋都係睇報紙睇番返嚟。

問：哦，okay。因為我哋嘅理解就係佢哋...

答：我哋冇第一手資料。

問：...係用嗰啲叫做銀焊枝嘅，係貴啲，...

答：係。

問：...咁但係就如果係都有鉛嘅話呢，咁--即係我哋只不過喺度諗緊，就話會唔會其實--即係其實你即係你扭得一個蓋呢，原來可能係會唔會有第二啲地方可能係有含鉛，譬如話啲部件咁樣，咁但係就呢個你本身有冇咩嘢 input 或者有咩嘢嘅睇法呢，會係？

答：據我哋睇番譬如係 BS EN 嗰啲 specification，咁如果 silver brazing，即係 brazing 嘅，就係即係 free from cadmium 嘅，用 cadmium-free 嘅 category 嘅

問：係。你睇睇 15.1 吖，唔該，15.1。呢個係嗰啲 brazing 嘅 specifications。37598，15.1，B15.1。

答：係。

問：你嘅意思係咪就係 37598 下面，"BRAZING ALLOYS FOR COPPER AND COPPER ALLOY CAPILLARY FITTINGS"呀？

答：係。

問：右面，37599，係咪？

答：係。

問：Point 3，係咪呀，"Use cadmium-free category brazing alloy"？

答：係。

問：你頭先想講嘅就係呢樣嘢？

答：嗄，即係brazing就係free from cadmium嘅。咁如果係...

問：係。佢上面(b)都有講係要lead-free嘅，都？

答：係，上面嘅(b)？

問：(b)。

答：Brazing is lead-free category?

問："A supporting document of lead free grade brazing material."

答：係。

問：即係如果用brazing做呢個焊接嘅物料就唔單只係cadmium-free，仲要lead-free嘅。

答：係。咁其實如果我哋睇番British Standards裏面佢嗰個description，佢個table 6，應該係。如果我喺第二份證人供詞嘅exhibit 13，...

問：40193。

答：...40193。

問：40193。

答：係，咁就見到嗰個BS嘅table 6，佢下面就有個note嘅。

問："NOTE"，係。

答：係嘞，寫到明"Soldering alloys"就係...

問："with lead and brazing alloys with cadmium are not permitted"。

答：係嘞，"and brazing alloys with cadmium are not permitted"，佢就咁樣寫嘅。咁所以我哋就會抄番，佢就係要

lead-free 同埋 cadmium-free 喇。咁呢個就係我哋嘅理解喇。

咁照計，我如果睇佢嗰個上面嘅 table 裏面，"Brazing"嘅成分似乎就係"Silver/copper"，咁就可能有"cadmium"或者係"phosphorus"、"Silver"等等喇；咁而"Soldering"就會有"Lead/tin"、"Tin/silver"、"Tin/copper"等等嘅嘢喇，咁就係你要用得啱個 category，先至可以確保你係 lead-free 同埋係 cadmium-free。

即係有啲咩嘢情況會令到某一啲物料會釋出啲咩嘢嘅 chemical 呢咁，咁就要真係視乎佢用啲物料係唔係正確地 specify 同埋正確地去 purchase 同埋使用。

問：最後有一個問題，可能係好哲學嘅問題。鉛水事件發生之後，咁我就見到好多唔同嘅 circular，好多唔同嘅人，就開始知道話食水含鉛，好大件事嘞，咁樣。咁但係食水都可以含到好多唔同嘅即係有害嘅物質㗎，喺呢個建築水喉系統嘅過程裏面，或者係即係大自然裏面。咁啱今次出咗事嘅係鉛喇。咁我想知道譬如話房署本身，佢哋係即係以後喺風險管理方面，佢哋係會真係比較被動地就係--今次出咗鉛，咁所以就水務署就出咗 Circular 1 of 2015，好多唔同嘅文件都改咗，叫人哋--「啊，鉛呀，鉛呀」咁樣。

但係至於其他即係潛在地可能出事嘅嘢，係咪都係即係採取一個態度，「我知道風險，甚麼、甚麼」喇，就係話即係要--嘅態度其實係咪就係話你要 pre-empt 晒，你要所謂處理所有呢啲風險呢，其實就唔得嘅，就真係只能夠有咩嘢事出咗，咁就真係先至以一個回應或者反應嘅方法去處理嘅啫？係咪咁樣呢？譬如話 cadmium 咁樣。而家冇人講 cadmium㗎，即係話可能要 test 又盛。但係即係而家大家嘅 focus 都係 on lead。可能頭先你有講 cadmium 喇，但係我哋睇過世衞，世衞裏面講過其實好多嘢都潛在有事嘅。

咁即係我諗你哋嘅取態，你哋嗰個嘅風險管理嗰個取態會係點呢？

答：不如咁講喇，世衞標準就唔係畀一般平民百姓去使用嘅。據我哋有限嘅認知或者理解，佢就係畀一啲 local authorities 去制訂佢一啲係 standards 同埋 regulations，咁跟住就一般嘅即係專業人士或者係發展嘅機構或者係用家等等就可以有法可依嘅。

咁我諗如果你話喺各類嘅物質，因為世衞裏面佢嘅物料，包括 physical、chemical、microbial、radioactive，超過一百種

的確我哋係唔認知嘅，真係唔識。咁每一個地方嘅水質係點，我哋亦都冇嗰個--即係所謂一般做發展嘅機構嚟講喇，都未必有咁深入嘅知識嘅。咁一定要就係有賴一啲係有關嘅當局去制定一啲係各類嘅要求、指引或者係一啲相關法例喇。

問：「有關當局」係指邊個呀？

答：「有關當局」應該就係 local authorities，喺即係負責譬如水質或者係健康有關嘅一啲--或者環境等等，嗰啲有關部門喇。咁房委會作為一個係所謂叫做比較 progressive 嘅一個發展嘅機構，就當然可以同好多呢啲 regulators 都攜手合作嘅。

咁但係喺我哋嚟講，我哋的確係根據個法例要求就去進行我哋嘅發展嘅工作。咁甚至我哋睇番我哋譬如建築嘅規格，我哋一定係依據香港法例同埋就依據一啲係已經係沿用得好純熟嘅國際標準喇，例如 BS EN 等等，咁去制訂我哋嗰個建築嘅規格。咁而建築規格，我哋將佢轉化為一個合約嘅要求，就等我哋嘅承建商--因為佢哋負責承造㗎嘛，佢哋係有一個責任就係負責喺佢物料供應，同埋嗰個做工，同埋係喺地盤係全程去監督嗰方面係到位嘅。

咁所以睇到我哋嘅風險就係，風險唔在於我哋睇到佢係高風險，而係我哋睇唔到佢有啲潛在風險，嗰一啲地方出問題，特別係喺個物料嗰個採購方面，我哋所講係...（聽不清）係承建商方面，佢點樣去採購物料，佢點樣去作為一個即係--收貨嗰陣時，點樣去處理；喺佢存倉，點樣處理；使用，點樣處理；點樣監督嗰度係要多做工夫嘅。

我只可以講就係話今次畀我哋一個啟示喇，就係個風險喇，除咗我哋見到佢係有高風險嗰啲地方嘅同時，有啲平時我覺得佢風險唔高嘅，但係一般嚟講大家如果認為佢風險唔高，而可能就冇全力去全程去監督嘅地方，除咗用抽查之外，可能要有個更加有系統嘅一個監督方法，咁就先至確保我哋嘅承建商同埋啲分判商係唔會出現一啲所謂採購上面嘅問題。

石先生：請等一等，係。我冇其他問題。

主席：請問有冇人有問題？係，Mr Lee。

李柱銘先生：係咪其他人冇喇？

主席：佢哋通常都等到最屘先問嘅。

<u>李柱銘先生盤問</u>

問：馮女士，其實想解決呢啲水喉嘅問題，我話畀你聽有一個好好嘅方法嘅，唔知你知唔知道，或者預唔預備用，就係而家全世界都有幾個國家用㗎嘞，德國做得好好，加拿大、美國嗰啲都用，就係擺啲化學嘅物質落啲水度，而係--譬如有個樓宇咁喇，咁就可以喺嗰個樓宇，即係出面啲街嗰啲水入去，嗰度就駁咗佢，喺嗰度放啲化學物質落去，咁然後等佢就入咗去屋裏面嗰啲水喉度，咁佢有兩個工作。第一個就係可以將水喉裏面嗰啲污糟嘅物件黐咗喺水喉裏面洗咗去，然後就同時就會幾個月內就喺個水喉內嗰度就整咗一層 coating，一個膜，好薄嘅膜。咁呢個膜就係用啲 phosphate，即係磷酸鹽，或者 silicate，即係矽酸鹽，咁嚟組成嘅。咁嗰度裏面就其實好硬正嘅，雖然好薄，咁變咗喺呢個水喉裏面可以話另外有一個喉，不過好薄嘅，咁令到就算出面嗰個係譬如銅嘅喉，有裂痕咁都好喇，會漏水嘅，本來；但係因為裏面有咗個咁嘅薄嘅 film 喺度，就唔漏水嘅。即係你聽過呢啲咁嘅方法未？

答：多謝李大律師呢個提問。其實好多唔同嘅方法我哋都聽過或者喺文憲都見過，但係其實喺香港適唔適用，係點樣用法，我哋一概都係要交番畀水務專家去作為一個即係 authority，然後先至可以考慮可唔可以用。因為每一個地區嘅水質，譬如佢軟硬度唔同，同埋嗰啲如果加落去嘅一啲添加劑，佢點樣先形成個薄膜，係咪好 even 等等，佢會唔會有第二啲副作用等等，嗰啲咁嘅影響，其實我哋的確唔係--我哋嘅認知真係、真係唔足。咁我哋一定就要搵番有關當局同埋啲專家去深入去研究，根本喺香港呢個環境係咪合用呢，先至可以考慮會唔會使用囉。

同埋呢啲物料亦都需要審批㗎嘛，咁同埋就係有咁多種唔同嘅，又化學，仲有就係微生物，等等咁多嘅要求，關於水質，的確我哋就係個認知真係唔足。

問：你哋嘅認知唔足，但係你有冇聽過呢啲咁嘅嘢呢？

答：都聽過下嘅，聽過。

問：如果聽番嚟嘅係真係嘅，咁--當然你哋唔係專家，但係如果聽到你哋嘅專家，即係水務署嗰面，都話呢啲係平正靚咁，咁你哋梗用㗎喇，

係咪？

答：假如係水務當局都係咁樣建議我哋可以採用嘅，咁當然我哋就會考慮嘅。

問：但係你好似講得有啲 reservation 咁，係因為你對頭先我提出嚟呢一停嘅物件唔熟悉，所以你有 reservation 吖，定係就算好嘢，你都唔想呢？

答：如果真係好嘢，我哋的確會想喇。咁但係我就話物料本身嘅作用，同埋仲有就係我哋嗰啲用水嘅用家嘅時候，佢係要點樣配合，先至可以成事呢咁。有好多即係關於譬如係同居民方面嗰個聯繫，譬如佢點樣配合呢，譬如係咪喺屋企要等佢做呢啲工作，等等嘅嘢，有太多呢啲細節可能要考慮囉。

問：唔係呀，就係相反呀。如果你換水喉，你就要屋企換水喉吖嘛。

答：唔。

問：佢而家就係擺明佢唔郁你啲水喉㗎，甚至可以 at source㗎。香港係水域，好似係分咗六個水域嘅，係咪？係咪？廿六個水域，你知唔知？

答：我知道有好多唔同嘅水域，有唔同嘅配水庫，咁仲就係--但係我哋嘅居民用水，譬如係咪佢一路要 running water 要 draw 啲水，佢先至可以 form 一個 coating 等等，仲有好多嗰啲細節，我諗唔係--即係唔會可以去引用，而係一定要經過好多方面嘅考慮喇，包括專家佢各類嘅研究；同埋仲有我哋睇番我哋嘅用家嗰方面，佢有啲乜嘢要配合；我就講係呢方面嘅配合啫。

問：其實好簡單㗎咋，只要你逢係用水，啲水就郁㗎喇；一開水喉，啲水就郁㗎喇；一郁呢，佢有咗嗰啲咁嘅 chemical 喺度，佢就已經一路咁就會嘞，就會 form 呢個 coating㗎嘞。即係唔需要你自己鑿爛佢攞出嚟做嘅。

答：咁變咗就即係各方面都要研究囉，我只可以就話。即係如果係真係可行嘅話，就可以研究去使用囉。

問：如果研究，即係研究得滿意，咁你梗係用喇，你嘅意思即係；研究得唔--即係唔得嘅，咁梗係唔用喇，係咪咁呢？

答：係，咁但係第一步都係要有關當局可以係即係確認呢一隻物料喺香港係可以使用同埋合用囉。

問：Okay。你或者你哋嗰個署有冇同即係做呢啲有關嘅公司傾過呢，最近？

答：呢啲公司，據我理解，都有同我哋或者同水務署都有一啲咁--即係各類嘅聯繫嘅，咁但係就因為礙於，喺我哋嚟講，我哋就根據合約，就要求我哋嘅承建商就去換番一啲係合資格嘅焊料嘅銅喉，咁所以我哋就現在都係係承建商去提交呢啲係換喉嘅一啲方案畀我哋去考慮嘅。

問：首先，你聽過呢個 product，即係呢個個名未呀？叫做 Tersa Aqua，聽過未呀？T-E-R-S-A，Tersa；Aqua，A-Q-U-A；等 smooth water，即係流得好順嘅水。

答：係。

問：聽過未呀？

答：呢個都聽過下嘅。

問：Okay。好嘞，當然你哋嘅合約上，同嗰啲公司，你可以叫佢換。但係你知唔知喺換嘅時候，對啲用戶係好慘個喎，係咪？一換水喉咁，係咪？

答：進行一個 replumbing，換喉嘅工程，係的確要部署得好好，咁就盡量我哋希望係減少對居民嘅滋擾喇，咁但係無可避免地都要入屋嗰度去進行呢啲工作嘅。

問：係吖。但係如果用呢個方法，如果真係咁好嘅話呢，係完全唔使入屋，唔使搞啲水喉嘅，唔使郁啲水喉添。即係直情佢同你搞掂咗嘞。咁嗰啲 metal，嗰啲 heavy metal，咪佢就唔入得去，唔好話 cadmium、lead，全部都唔入得去，咁咪解決咗好多問題囉，係咪？

答：就我諗呢個問題都要搵水務署或者水務當局有關去研究一下喇，因為佢係咪咁容易 form 浸 coating，同埋呢啲物料同一般嚟講譬如清水缸或者同 chloride 等等，會唔會有第二啲化學作用呢咁，咁我哋都唔係好清楚。

問：但係 chloride，chloride 就會用少啲添。

答：呢個我哋就即係唔係專家喇，咁所以今日我都未能夠可以即係畀一個完備嘅答案喇。咁我諗我一定要去請教番係有關水務當局囉。

問：係，當然喇，你咁樣就好穩陣嘅，即係變咗你個房署，唔係淨係你自己都好穩陣，唔需要你哋用好大嘅決心做一個好重要嘅決定，等佢搞掂。Okay，我明白。咁但係你都應該同時係好想呢樣嘢做到個喎，如果真係咁好？你唔話會叫佢哋，「喂，快啲試下喇，得唔得呀」咁樣，有㗎咩？我見你好似好保守、好小心，但係冇呢個熱忱嚟解決問題。

答：我哋都有試過，嘗試去叫承建商去試一啲又係即係所謂non-destructive嘅物料，咁但係就一切其實都有一定程度上面嗰個困難或者係一個風險囉。咁都要平衡番用一隻新嘅物料嗰個風險同埋佢嗰個可靠性同耐用性。咁呢隻物料，佢譬如可以係用幾耐又要有再一個即係跟進或者補救等等呢咁，咁因為好多呢啲事情其實--我唔會話佢一定唔得，不過就要有一個比較深入嘅研究，同埋一個仔細嘅分析，再經埋有關當局嘅批核，先至可以用囉。因為呢個直情係加入食水裏面，咁變咗就對水質有咩嘢影響呢，嗰一方面我哋的確就要更加小心嘅。

問：咁你即係有冇水務署傾過呢個問題呢，研究呢個product呢？

答：我個point唔係呢一個，係呢一類型嘅product，就多過一款嘅，咁我哋都會同水務署可以話都盡量緊密去聯繫，睇下有冇突破喇。

問：即係我聽到你好似對呢個product就仍然仲有啲守住、守住？

答：有懷疑嘅。

問：係。好似守住龍門咁，成日。不如我轉一句問你嘞，其實你知唔知道我而家係幫緊你哋，幫緊政府嘅呢，或者係幫埋房署嘅，係解決問題嘅？點解我哋接受到嘅待遇好似唔係咁welcome，即係我覺得奇怪。

因為我想問你，而家驗水就唔係你哋驗吖，啱唔啱？係Waterworks嗰面驗吖，Water Supplies嗰面驗吖，係咪？

答：過往嗰段時驗水係的確要水務署幫我哋去驗，即係而喺屋邨嗰啲食水。

問：係嘞，到到而家都係吖？

答：唔。

問：你哋派人去驗吖？

答：如果喺新建嘅樓宇方面，我哋就係會自己就去搵番有關嘅承建商同埋我哋嘅...（聽不清）laboratories就去驗。

問：好嘞，咁你哋驗水嘅時候嘞，係驗啲隔夜水吖，定係開大水喉啡五分鐘至驗嘅呢？

答：如果係講到即係水務署同我哋進行嗰個喺現有屋邨驗水嗰方面，就由水務署嗰邊就去建議我哋點樣驗。但係如果係現在，話屬於一個新建嘅樓宇，未入伙嗰啲，我哋就跟番即係一套既定嘅程序都係去驗，咁就會係清洗之後去抽水辦去驗。

問：清清洗之後抽水辦，即係開水喉，等佢啡咗五分鐘，然後至抽水辦去驗，係咪？

答：我諗，李大律師，你指嗰個係現有樓宇，我講嗰個就係講一啲新建，就將會落成嘅樓宇。咁所以如果係講現成，即係現有嘅屋邨嘅樓宇，嗰個驗水計劃，我哋的確係跟番水務署嗰一個做法，佢就係即係用一啲水係流咗五分鐘嗖去抽水辦去驗，嗰個方法嘅。

問：如果你將嚟起好嘅就冇水驗添。即係起好咗未有人住嗰啲，咁又點呢，係咪又係啡五分鐘至攞去驗呢？

答：咁如果跟番一個...（聽不清）laboratory 佢嗰個驗水嘅方式係點樣驗法呢，就用番嗰一套同水務署嗰個即係同意咗嘅方式去抽水辦去驗。

問：咁都係五分鐘喇，係咪？

答：係。

問：咁你知唔知道如果係要啡咗五分鐘至驗，嗰啲水根本就好少--任何嗰啲 heavy metal 都減到好少、好少㗎嘞，因為你啡咗五分鐘喇嘛；知唔知呢？

答：如果係據一啲專家嘅意見呢，似乎如果係等啲水即係流咗五分鐘呢，的確有好多沉積物係可以將佢係沖走咗嘅。

問：咁咪即係唔準確囉？

答：咁呢一個我哋只可以話我哋都係有賴一啲係專家嘅意見，同埋係專家嘅要求，點樣去驗水辦，或者點樣去即係攞水辦去驗呢，就根據專家嘅意見去執行嘅。

問：我手頭上就有個 joint expert report，係 preliminary 嘅，就係 Bundle V1，tab 1，page 1 至 44。呢個 joint export

report 就係呢個委員會係請佢哋做嘅，兩個專家，一個 Professor John Fawell，一個就係 Professor Joseph Lee。

答：係。

問：你哋知道嘅；有冇睇過呀，呢個 report？

答：呢個見過。

問：佢哋呢啲專家，你哋接受係好勁嘅專家喇，係咪？

答：係專家係一啲係國際級嘅專家喇。咁我哋都會係即係按照我哋嘅水務專家或者係即係水務署喇，嗰個要求或者個規管嘅方式去執行我哋嘅工作。

問：又唔關你事。你話水務嘅專家勁吖，定係呢兩位國際咁好聲譽嘅專家勁呢？

答：咁佢哋大家都係專家，我對佢哋好專重嘅。

問：兩個都雙方一樣咁勁，係咪？

答：大家嘅專家都係國際嘅專家，咁所以我都...

問：唔係，水務署嗰啲係國際級嘅？

石先生：我諗水務嘅大狀未起身，我都要起下身。呢個絕對係呢個委員會決定佢呢個證人...（聽不清）

主席：究竟邊一個先至係一個正確嘅測試方法，我諗我哋會喺我哋個報告嗰度會嘅。

李柱銘先生：好。

主席：不過你可以繼續用住我哋嘅 preliminary report 去問嘅。

李柱銘先：係。我諗住--我而家問呢個 report 都好穩陣嘅，唔係我嘅做嘅。

問：你睇到第 6 版。

答：係。

問：我唔想逐個字讀嘞，你自己攞一攞。

答：係。

問：如果我想睇番，你自己攞一攞喇，唔該。尤其是中間嗰段，即係第二段，大嗰段。

答：唔。

問：即係英國、美國、日本佢哋都係攞頭頭嗰啲水嘅，攞去驗嘅。咁同埋跟住嗰兩段睇埋嘞。睇完未？

答：睇完。

問：係嘞。其實好簡單啫，如果你去驗水，點解去驗水呢？就係因為你想知道住喺你哋公屋嗰啲市民佢攞嗰啲水去飲嘅，會唔會因為嗰啲食水嘅含鉛係超標，令到佢哋--係對佢哋有傷害，係咪？目的係咁啫？

答：呢度提到就"Fully flush samples on their own may serve the purpose of assessing the general quality of a drinking as supplied"嘅。

問：係吖。大家知道而家我哋啲--而家點解個社會咁驚呢？就係因為，嘩吓，我哋飲嗰啲水原來咁大件事嘅；係咁吖嘛，係咪？係咪呀？

主席：我諗李大律師嘅意思，即係我估咋吓，就係有陣時就唔需要咁保守，即係唔需要一定跟水務署嘅指示。你做水務署嘅指示嘅同時，你可以行多一步，就係譬如好似我哋啲專家咁樣樣講，「啊，不如攞多一個唔 flush 嘅 test 去試下」，咁樣樣。

答：係，咁我諗就係既然就係 COI 都有好多專家，佢最後有啲咩嘢建議咁，我諗如果喺香港嚟講，大家係點樣考慮嘅時候，咁同埋水務署嘅專家一齊再研究，究竟我哋應該點樣做法嘅呢，咁我諗我哋嗰陣時一定就會採納有關嗰個建議囉。但係現...

主席：即係同樣你之前講嗰種方法，即係--我相信李大律師嘅意思就即係

話有陣時都唔需要話等水務署話要點做就點做，可以自己冇啲創新嘅方法去自己去試下，唔需要成日等人嘅；我相信係咁嘅意思喇。即係你哋有冇 explore，有冇去探討下呢一方嘅嘢呢？

答：我諗喺一般情況可能我都會有做呢一啲工作嘅。不過今次既然係有咁多方面，有請咁多專家一齊去研究嘅時候，比方說水務署有請佢哋嘅國際級專家，咁 COI 又有請佢國際級嘅專家，咁最後我哋都相信啲專家嘅意見都可以為香港所吸納同埋係可能會受惠。咁我等--但係現在都過咗一段時間，咁據我理解，就 COI 嘅嘅報告都將會喺今年裏面都會面世喇，咁我哋喺嗰陣時都可以有更加多嘅機會大家一齊再參詳一下點樣做係最理想囉。

問：嗱，我或者畀你聽，我好多謝主席問呢個問題，幫我發問咗。但係你要問白，你唔可以永遠都坐喺架車後面㗎。我話畀你聽點解呢？因為如果係因為驗水唔妥，跟住好多居民、邨民係受咗影響，佢係多好多人會出嚟告你哋㗎。你唔好淨係坐喺後面就以為冇事呀。

驗水驗得唔好，令到你以為冇事，原來啲人要繼續係飲嗰啲水，然後出亂子嘞，你咪增加好多控訴。因為專家有啲意見就好似話唔使理，有啲專家就緊張好多。你要諗下㗎，你聽邊個話㗎，唔好淨係話聽晒嗰啲話冇事嗰啲話，到其來你要負責㗎，我而家係咁話畀你聽，你明唔明呀？呢個世界冇咁好㗎，面面俱圓。

答：我都深信專家意見對香港整體嚟講，對香港市民，包括係即係住公屋嘅居民嚟講，都會有裨益。

呢一個我就--我亦都唔係淨係話坐喺架車後面，不過當然都要睇番一個即係大環境個運作。譬如香港嘅水，香港嘅水資源，同埋個水質，同埋各類嘅測試，同埋各類嘅甚至改善工程等等，咁我哋一定會同各方面係攜手合作。咁但係--即係我嘅意思就係話當然我哋亦都唔可以話忽視咗或者係我哋亦都行得太前，包括係全部嘅規管或者全部嘅專家意見都未出齊嘅時候，我就現在係作為一個所謂即係--比較武斷，就去是但做一樣嘢。因為現在大家畢竟都行咗一段時間，咁就按大家嗰個工作，希望做到最好嘅，呢點大家都明白嘅。

問：而家其實我今日問咗你兩樣嘢。首先，你嗰個 test 喇，aqua，呢個 product；但係另外一個就係點樣抽水去驗，抽啲咩嘢水去驗。兩個問題嘅。

如果你第一個問題，你話「呢個 product，我唔係好熟，再等啲專家研究下，冇問題。

答：同埋--唔止一個 product，另外有幾種唔同嘅 product 嘅。

問：係吖，仲有幾種唔同。仲要平、貴呢啲梗係要決定喇，係咪？

好嘞，但係我而家問第二個問題，就係抽水。呢個你唔可以避免嘅，因為已經專家--世界級嘅專家話要隔夜水，咁多個國家都用㗎嘞。本地、香港嘅專家就話五分鐘先。咁你明㗎嘛，個分別喺邊度。你明唔明？

主席：等一陣先。係，Mr Chan，...

陳宇文先生：主席，就關於要點樣抽水辦，邊個去抽水辦，呢啲咁嘅程序，有唔同嘅專家，有唔同嘅意見。咁我諗呢樣，呢個問題，可能最恰當係問番啲專家證人，唔係問呢位證人。

主席：睇下究竟 Mr Lee 想問問題嘅重心喺邊度喇。

李柱銘先生：個重心就係而家我代表就係三戶人。我驚將來會好多、好多㗎，咁又點呢？因為呢個委員會，當然一方面就要解決個問--就先尋求。大家都其實差唔多知道㗎喇，點解會有咁多鉛喺啲水度，大家都差唔多知道。咁點樣補救呢？因為尤其是個 Terms of Reference 第三個，就唔係淨係公屋嘅，係所有啲私人樓宇都係嘅。咁嘅時候，而家驗水，呢啲係點驗呢？冇個喎，私樓冇人知個喎，冇人驗個喎，自己驗㗎咋喎。

主席：係呀。

李柱銘先生：係嘞。咁你--咁即係我幫--委員會要解決呢啲問題嘅。咁所以如果佢成日都係五分鐘、五分鐘、五分鐘，學校又係五分鐘、五分鐘、五分鐘，咁可能對個社會造成好大嘅傷害個喎。一方面你要聽晒啲證供，你至可以寫報告㗎。咁但係同時係好多嘢發生㗎嘛，不停咁發生㗎嘛。咁你每日係人都會聽佢哋話要啡咗水喉五分鐘至攞去驗，好多人真係信咗個喎。咁你淨係啡咗五分鐘，乜嘢都流晒去喇。咁但係佢哋係朝頭早起身係咪啡五分鐘呢？呢個好大問題喎。如果朝頭早啡五分鐘，水費就多咗個囉喎，咁又點先？

呢啲所有嘅問題，咁而家--當然而家我問呢位女士，呢個證人，佢就淨係房署嗰啲屋，咁公道吖。咁但係而家都好多人會受影響㗎嘛，好多人受影響㗎嘛，咁所以我唔--覺得任何反對嘅呢，我都堅持要問落去㗎嘞，睇下畀唔畀我問嘅啫。

殷先生：主席，我就聽咗李大狀嘅問題都一段時間，我係保持緘默嘅，因為我唔係反對佢提出有關驗水方面嘅疑問。但係個問題就係係唔係適當問馮女士呢？因為馮女士，第一，只係代表房委會出席呢個聆訊；第二，我哋知道而家出咗事嗰啲屋邨係已經做咗啲跟進嘅補救嘅方法，即係係譬如話用過濾個方式去過濾嗰啲食水嘅，而且係會跟住落嚟有動作去更換個水喉嘅。咁所以呢一個所謂係唔係沖淨咗先至去驗水呢一個方面嘅嘢，雖然係一個係好有趣同埋大家公眾可能有知情權嘅嘢，但係係唔係一個合適嘅問題去問呢位證人，而證人呢，我就有個質疑嘅。

李柱銘先生：主席，如果咁樣，我問第二個問...

問：跟住問一個問題，就係你哋嗰方面有冇同水務署嗰方面係好高層次嘅開會，係問清楚佢點解堅持要五分鐘後至驗，有冇呢啲咁嘅會？高層次嘅，即係張炳良局長，即係好重要嘅，有冇啲咁嘅會？你自己去，有冇？

答：首先就我哋嘅常任秘書長就有，嗰陣時喺驗水嘅時候，就都會好緊密咁樣就同水務署署長，甚至係政府化驗所等等，就一齊就去進行呢啲探討嘅工作。跟住其實成個政府，包括政務司司長同埋有關嘅局長同埋署長同埋常任秘書長都坐埋一齊，都有傾過呢一啲課題嘅。

問：唔係探討嘅工作呀。而家係分分鐘係救人命呀。你哋有冇話「喂，點解成日都要五分鐘、五分鐘、五分鐘？」你咁樣就變咗驗得唔準確嘅時候，多好多人中招㗎嘛，咁點搞先？

主席：我諗其實叫馮女士答呢就唔係幾公平嘅。呢個問題就應該就直接向水務署署長發問。

李柱銘先生：當然，我相信你一定問佢添。你都會問佢添。

主席：係。因為水務署署長--當然喇，佢嘅總化驗師有咁嘅建議，咁水務

署署長就接受佢嘅建議，就話咁樣樣做喇。即係政治上就一定係呢個水務署署長負責，啱唔啱先嘞？

李柱銘先生：係，我同意嘅。咁但係馮...

主席：咁所以其實你問馮女士，「詼，點解你哋唔跟我哋個 expert 個 preliminary report 裏面嘅方法去驗水？」咁佢可能有好多原因嘅，係，我唔知喇，係咪？不過就佢而家就話「啊，我哋而家根據水務署嘅指引，水務署話咁樣樣驗，咁咪咁樣樣驗囉。」

咁水務署，如果你有睇報紙報導，因為出咗呢一個初步嘅報告之後，就有傳媒朋友就問水務署有咩嘢回應。咁如果我冇記錯，水務署當時候嘅回應就係話「啊，兩個 tests 都係 compatible 嘅，冇問題嘅」，咁樣樣。呢個就係佢哋嘅解釋。啱好，錯好，我哋遲啲會決定。

李柱銘先生：都唔會點啱㗎嘞。

主席：政治上，即係唔係我--我唔係講政治上。即係問責上，究竟係應該要邊一個--因為係佢哋--因為成個驗水嘅程序，點樣樣驗，驗嘅方法，驗嘅次數，點樣樣驗，就基本上就唔係房署去決定，就係水務署話點樣樣驗，同埋水務署話點樣樣抽水辦，諸如此類。抽咗之後，其實政府化驗所都只不過係做一個 technician 嘅角色，係同佢驗嘅啫。實際上嗰個 methodologies 就全部係水務署去決定。

李柱銘先生：係，我明白。

主席：咁所以其實合適嘅人選去問呢啲問題就應該係水務署。咁我明白，李大律師，你嘅意思。喺呢一個階段，如果水務署個方法係錯嘅話，咁即係換句話嚟講有啲居民可能--譬如第二啲所謂未受影響嘅屋邨嘅居民，又或者私人屋邨嘅居民，佢哋可能而家係會繼續係飲用緊一啲含鉛嘅食水。

得，如果呢一方面嘅問題到最後--咁佢就一定係--馮女士係答唔到嘅。呢方面，政治上，就水務署負責囉，係咪？因為佢哋認為咁樣樣係冇問題吖嘛。

李柱銘先生：但係--主席，你呢個分析係正確嘅。不過我想你另外睇睇嗰個。如果一個家長佢個仔或者個女有病，一個醫生就話飲多啲水，瞓多啲覺就冇事㗎嘞；另一個醫生就話「唔係喎，好大件事喎，要開手術喎」咁。咁佢話「我唔係專家，咁而家有兩個專家，咁點搞呢？」

個家長，喂--家長問佢自己嘅爹哋、媽咪。佢爹哋、媽咪話「冇事嘅。嗄，你睇中醫都話冇事㗎嘞。」咁佢係好似唔緊張咁呀，而家個問題就係。咁如果真係出事，點呢？如果啲居民，真係好多人出事，咁點呢？同埋佢哋都有話--頭先馮女士都話佢哋都有驗個喎，不過佢又跟番住...

主席：水務署嘅指引，係呀。

李柱銘先生：...水務署，嗰度話五分鐘。點解要跟啫？你自己去驗吖嘛。點解你唔驗？驗啲隔夜水，加埋五分鐘，咁睇下都好吖，冇個喎。

石先生：主席，其實有兩個論點。第一，就係其實呢拃嘢全部李大律師已經問過多過一次。如果用美國法庭...（聽不清）嘅術語係叫 asked and answered，asked and answered umpteen times。即係我明白李大律師想問乜嘢，但係而家冇人畀佢問呀。佢已經問到我哋都識背個答案出嚟，就係話 COI 就嚟會有 report 出，佢唔係一個適當嘅人去判斷究竟邊個 expert 好啲，大家都可能係同等嘅重要。咁佢全部已經講過晒。

如果李大律師係相信不斷地問，有人會 buckle under pressure 嘅話，咁呢個係佢嘅理念。咁主席同埋委員可能要作出一個判斷，就係話容唔容許不斷地問，希望搏一搏就話馮女士會喊，會 confess，會有個好戲劇嘅場面，就係民主鬥士李大狀成功地令馮女士 break down；可能呢個係個目的，我唔知道，但係呢一個我不斷地重複，...

李柱銘先生：我反對。

主席：等等，等等。

石先生：...就係呢個唔係委員會嘅。

我亦都可以肯定將來會有人提出呢個委員會應該政治問責嘅，呢個問題。咁我諗呢度我諗不如我就而家事先講定，就係呢一個係一個調查委員會，佢嘅職權係由 Terms of Reference 去負責，咁所以就--李大律師可以儘管反對，但係到頭來都係主席先生去決定准唔准佢繼續問嘅啫。

正如李大律師頭先所講就話「但係任何人反對，我都繼續問㗎嘞。」

李柱銘先生：到我問未呀？到我講未呀？

石先生：到嘞。

李柱銘先生：主席，我好反感頭先講嗰啲說話。

主席：不如咁喇，不如咁...

李柱銘先生：我唔係為出名而做呢件案嘅。

主席：得。我哋冷靜一下先喇，好唔好？

李柱銘先生：我希望佢道歉。

石先生：我唔會道歉。

李柱銘先生：主席，如果係咁樣呢，係咪要叫水務署啲人快啲出嚟呢？因為每日我哋喺度咁樣拖住呢--我唔係話你拖呀。你唔叫水務署，冇人做出呢個決定，咁係咪越嚟越多年受苦呢？我哋可唔可以咁樣做呢？

主席：所以我哋出咗個 preliminary expert report 出嚟。

李柱銘先生：係喇。

主席：係喇。

李柱銘先生：咁佢又唔睬你喎。

主席：係呀，咁佢唔睬我，我都冇辦法個喎。

李柱銘先生：咁但係啲人，越嚟越多人中招，又點樣呢，主席？

主席：係咪呀？咁咪到最後--石大律師有道理嘅。

我哋個 Terms of Reference 就係咁樣樣㗎嘞，政治上高我哋冇呢一個咁樣樣嘅 term of reference，話要點樣樣政治上高要負責。即係我哋唔可以咁樣樣做，係咪先？

我哋將所有嘅嘢公開晒，擺晒出嚟，上晒網，喺呢一個階段個個人都睇到。咁你鍾意點樣樣做，你自己某程度上都要做一個決定，係咪？

我哋--譬如嗰個 preliminary report 出嚟，房署睇到嘅，係咪？咁如果房署認為，「啊，我繼續跟水務署嘅」，咁咪繼續跟水務

署囉，係咪？

咁至於你頭先話，你頭先講嗰啲問題，「喂，你可能畀好多人告你個喎，跟住」，咁我幫佢哋唔到。我亦都唔需要幫佢哋，唔關我哋事。

李柱銘先生：咁即係好多市民可能中招個喎。

主席：喺呢個階段，你明唔明呀？

李柱銘先生：我明。

主席：喺呢一個階段，...

李柱銘先生：我明。

主席：...我只係可以講晒我頭先要講嗰啲嘢出嚟。

李柱銘先生：所以我希望馮女士就唔好仲係採取呢個態度囉。

主席：係咪？

黎先生：咁李大狀，你都表達咗你嘅意見喇。

主席：係喇。

黎先生：係咪？

主席：係喇。

黎先生：咁我哋而且實際上，根據我哋嘅時間表，我哋好快脆已經係會傳召係水務署嘅代表出庭嘅，係事實上過幾日就已經係嘞。

主席：係喇。

黎先生：過多一、兩日--就應該兩、三日就...

石先生：其實下個禮拜已經係，如果李大狀有睇嘅話。

黎先生：下個禮拜已經係水務署嘅代表出庭。

李柱銘先生：我知。

主席：我哋而家要講嘅就係講住咁多。咁就請各方食飯時間唔該冷靜。

李柱銘先生：我食飯嘅時候好冷靜嘅，因為石大律師唔喺度吖嘛。

主席：咁同埋就--基本上頭先嗰啲咁樣樣嘅 discussions，其實就係喺我哋呢個專責委員會裏面基本上就喺呢一段階就唔應該發生嘅。喺呢個階段就不過係問問題嘅啫。咁你哋到最後，我哋到最後，你哋可以書面陳詞又講又得，你哋鍾意用口講又得，咁我哋到時先至再喺呢一方面，你可以代表居民係作出陳述。

咁我哋而家午膳先，兩點半再繼續，唔該。

下午 1 時 06 分聆訊押後

下午 2 時 31 分恢復聆訊

出席人士如前。

香港房屋委員會第二證人：馮宜萱（房屋署副署長（發展及建築））（重召）宣誓繼續作供
李柱銘先生繼續盤問

問：馮女士，喺呢個鉛水問題，我而家正式向你指出房署嘅立場就係唔想知道個問題究竟係去到咩嘢程度，因為如果嗰個係愈嚟愈多人係受到一啲鉛水嘅影響，你哋可能畀人告嘅機會就增加，所以因為咁，你至同意水務署呢個要沖水五分鐘至攞去驗呢個咁嘅意見，你同意定唔同意我咁講法？

答：其實喺房委會一發現呢啲所謂有呢個問題嘅時候，其實我哋本身亦都係由房屋署即係局長帶領底下，其實我哋係完全係好開放咁樣去處理呢件事，任何可以幫得到啲居民嘅方法，我哋都會用，例如係即時提供一啲係水務署嘅水車、提供樽裝食水，跟住就要承建商就去每一座裏面就要提供一條臨時嘅水喉供水到每一層樓等等，然後跟住就要佢全面係去換晒嗰啲水喉嘅，喺我哋嘅立場嚟講，我哋一定係會係秉住係最關心我哋居民嗰啲食水嗰啲水質嗰個角度出發嘅。

問：但係你有冇關心到--頭先我問你個問題就係希望盡量減少住公屋嘅人中招呢所謂？

答：我諗我哋只可以話我哋係根據我哋專家畀我哋嘅意見，認為點樣去測試、點樣去化驗係最恰當嘅做法，就循嗰個途徑就去採取有關嘅行動。

問：你所謂嘅專家就即係水務署嘅專家，係咪？

答：喺香港嚟講，當然我哋係以水務署專家為依歸，我亦都理解到水務署喺佢哋嘅調查嗰個過程裏面，佢自己亦都有再係聘用一啲國際級嘅專家嘅。

問：當然接唔接受專家嘅意見，喺公屋嚟講就係房署，係咪？

答：房委會亦都係需要同有關嘅水務當局，即係水務署，以佢哋所謂一個即係水務科嘅權威，一個規管者嗰個建議或者決定係為依歸嘅。

問：但係你哋要自己都作出獨立嘅考慮，佢嗰個意見係咪合理，你都要作出一個決定嘅，係咪？

答：如果喺香港嗰個現時嘅運作，的確就即使我哋有一個獨立嘅所謂運作，但係一切都應該係以水務當局水務監督嗰一啲規管作為我哋一個所謂即係奉公守法嘅情況底下要去接納嘅一啲專家或者係當局嘅意見嘅。

問：但係法律上冇話佢嘅意見你一定要接受，啱唔啱？同唔同意？

答：法律上面，我哋的確應該係遵照係水務監督嗰一啲法例同埋個要求係去運作嘅。

問：係啱呀，即係法律嚟，你一定要跟，但係...

答：係法例嘅，當然我哋係需要跟從。

問：但係佢而家話抽水樣本，要開咗水喉五分鐘呢一個咁嘅係意見嚟啫，佢認為咁樣就好，咁樣就啱，只係一個意見嚟啫，係咪？

答：當然我哋都會尊重水務監督佢嗰個法定嘅權威，同埋佢哋亦都有足夠嘅經驗或者係足夠嘅一個論據去建立或者支持佢一啲現行既定嘅各類嘅抽水或者驗水嘅方法嘅。

問：啱呀，既然你哋亦睇到呢個國家專家做嘅一個臨時嘅報告，而佢哋就同你收到本地嘅水務局嘅意見係唔同，係咪？

答：（沒有可聽到的回答）

問：你點樣決定仍然係開咗水喉五分鐘至攞去驗呢？

答：多謝李大律師呢個問題，其實我哋頭先都提及過，就係話我哋一定就會參照水務監督或者水務署嗰個指引先，首先就係，至於其餘嘅專家，我哋理解到就係 COI 都有請好多專家，水務署有好多專家，跟住落嚟嘅工作，我諗大家都有啲報告會出嚟，跟住香港應該點樣去繼續執行各方面嗰啲工作嘅，我都相信專家同埋各位負責一啲各類嘅調查等等嘅人士都會作出一個最恰當嘅一個建議或者決定。

問：好喇，呢個國家專家嘅意見書就擺咗喺度，水務署嗰度有冇研究過之後仍然話佢錯，再另外一個報告畀你呢，有定冇呢？

答：其實李大律師頭先你問你嘅問題，食飯之前，陳呢位即係...

問：主席。

答：...主席都已經提及過似乎現在都有好多報告，有好多專家，大家繼續跟住自己現在嘅工作繼續進行，我哋相信就日後我哋都有一個比較明確啲嘅一個指引嘅。

問：對唔住，你聽唔聽到我題目，明唔明白？我唔係問呢度，我話國家專家出咗個報告，但係而家你哋嘅水務署仍然係話五分鐘然後至攞去驗，你有冇叫佢哋「咁你都等人哋個報告出咗之後，你都起碼話番畀我哋聽點解佢錯、你啱。」有冇做出呢個報告呢？

答：咁就...

問：有定冇啫？

答：多謝李大律師嘅提問。

問：唔使多謝我，有定冇啫？

答：水務署應該都已經係參考過呢一份嘅中期嘅報告，我哋現在亦都係繼續係參照佢嘅建議去運作嘅。

問：佢有冇話畀我聽個理由？點解人哋出咗嘅嘢，佢唔同意？有定冇？唔使多謝我喇。

答：呢個可能水務署...

主席：你直接答佢個問題，快好多㗎會，有定冇？

答：其實如果有...

主席：冇咪冇囉。

答：冇，冇嘅，係沒有嘅。

主席：吓？

李柱銘先生：沒有。

主席：沒有，得。

問：好，好。我而家問你另外一類嘅問題。就以前你上一次畀口供，你就話係銀焊嘅問題，係 silver brazing，你記唔記得講過啲口供係點樣講？我提一提你，你睇下同意或者唔同意，如果呢啲，我可以畀番你睇。我而家就將上次關於呢一方面嘅你嘅口供就而家話畀你聽，你就話嗰個銀焊就喺嗰啲公屋嗰度就冇用嘅，因為呢啲水喉就係細嘅，係銅造嘅，你有冇講過呢啲說話？

答：不如應該澄清啲，就係話...

問：好，你講。

答：...其實 silver brazing 係用喺一啲大口徑嘅銅喉，所以我哋係有用，就唔係冇用，我意思即係話冇用，用喺一啲所謂...

問：細喇。

答：...細口徑、細嘅銅喉嗰度，就係 soldering，就唔係用 silver brazing。

問：你就話因為如果用銀焊，就因為嗰個熱度要好高嘅，所以就唔適合用一啲係口徑細嘅銅嘅水喉嗰度，因為會變咗脆，記唔記得咁講？

答：呢個我都記得，因為的確我哋喺地盤都曾經做過一啲測試或者一啲試驗，睇過佢哋用 brazing 或者用 soldering 去焊接一啲細口徑嘅

銅喉嘅時候嗰個現狀嘅，如果係用 brazing，佢個溫度係比較高好多，就唔同用 soldering，soldering 大概二百零度嘅啫，但係如果用 silver brazing，就需要用風煤樽，就唔係用一啲比較細嘅，嗰啲所謂 torch 嗰類咁樣嘅比較溫度低嘅一啲焊接方法，變咗佢需要嘅時間會長咗。

同埋佢做完之後，嗰條喉我睇得到佢就的確就即係所謂通紅同埋就會可能有機會係變脆等等嗰啲現象，的確喺地盤嗰度我哋睇到就係似乎呢啲係適宜用喺一個大嘅口徑嗰啲銅喉，就唔係用喺一啲所謂細口徑嘅銅喉嗰度嘅。

問：你話可能變咗脆，可能咋喎，係咪？

答：一般...

問：你唔係即刻搣，就斷㗎嘛？

答：呢個唔係即刻搣，而係我哋睇到一個佢受熱同埋跟住佢冷卻嘅時候有可能出現嘅現象啫。

問：邊個話畀我聽有可能會脆？

答：呢一個係根據我哋當時即係做示範嗰一啲所謂老師傅，佢哋做慣做熟見到嘅一啲現象嚟嘅。

問：呢啲老師傅係咪你當係專家，當唔當係專家？

答：我哋都係除咗係睇佢哋係作為一個係所謂熟手嘅一啲專業嘅技師嘅同時，都會靠我哋平時睇到佢哋講嘅說話係唔係合理。

問：但係用銀焊係咪貴啲呢？係定係唔係呢？

答：據我哋嘅理解，銀焊應該係貴啲，銀焊都要小心用，因為佢如果--佢有啲唔同 category 嘅，例如係有一啲可能有 cadmium，即係如果買料買得唔啱，亦都可能有第二啲 side effects 會出現，即係如果佢買料嗰個都係不慎，買咗一啲錯嘅物料，都係會有一啲問題會出現嘅。

問：所以用銀焊除咗佢買嘅時候會貴，仲要人工方面可能會多，要耐咗，係咪呢？

答：佢燒嘅時間係耐咗，所以我哋睇就係割雞係焉用牛刀呢？

問：我記得你用過呢個，我預備提你㗎喇。

答：係。

問：但係業界--因為跟住你嘅口供之後，跟住好多業界啲人嚟畀口供，佢哋唔同你嘅意見㗎喎，我而家問番你，睇下你聽番佢哋嘅意見，睇下你同唔同意，好唔好？

答：或者你可以介紹一下。

問：好呀。第一個就係蕭健煌，蕭健煌先生，佢個 transcript 就係 12 月，即係舊年 12 月 4 號，第 10 頁，...

主席：或者唔需要去每一個證人，不過--我 summarise，好唔好呀？

李柱銘先生：好，好，咁最好喇。

主席：因為我聽咗咁多證人嘅證供，佢哋基本上就話你剛才所講嘅現象理論上係會出現，不過實際上係唔會出現嘅，而且就仲有基本上好多私人發展嘅屋邨都係用銀焊，而佢哋--因為如果真係好似你咁講，因為佢--尤其是私人發展屋邨添，因為佢哋嗰啲水喉就全部係入牆嘅，所以漏水對佢哋嚟講，係非常之大件事同埋成本係非常之高昂嘅，因為要拆過晒或者啲買家唔高興諸如此類，所以你嗰個現象就話要用銀焊就唔係好適合用啲細口徑嘅銅喉，可能就係理論上係存在，不過佢哋就話實際上係完全冇呢一個問題嘅。

問：你同意定唔同意佢哋咁講？

答：我只可以講話呢個係一個選擇，我唔可以話佢係對與錯，或同意或者唔同意，即係佢係一個選擇，如果係用一隻貴嘅物料，用嘅時間--做嘅時間又會長咗...

主席：唔係，唔好講選擇先，即係當然佢如果要用貴就佢嘅事，時間長咗，物料貴，時間長即係人工高，呢個就係成本上高係增加，係咪先？不

過我哋唔好講呢一啲成本，即係純粹講材料上高嘅使用，其實銀焊係完全可以用嘅，你同唔同意？

答：我只可以講，如果喺咁嘅論據底下，我就覺得銀焊同埋係錫焊，即係用 soldering 或者 brazing 一樣可以用，只要你買得啱，用得啱，係兩樣都係同等合適，而唔係一隻就比另外一隻更加優勝，因為我哋睇番譬如係就係 BS 裏面個 table 6 嗰度，如果你用錯料或者係提供錯嘅物料，brazing 一樣可以譬如含有 cadmium，甚至唔知可能有 lead 都唔定，所以就最緊要就係會係點樣去搵一隻係合乎規格嘅物料，而...

主席：我明你講乜嘢，不過即係我哋--我諗李大律師嘅意思即係尤其是私人發展商添，係咪？如果又平又靚又好嘅，佢點會唔用，梗係有啲原因喇，你明嘛？

答：我只可以話你聽到返嚟係咁嘅現象，但係實際情況係咩嘢一回事，其實要問一問嗰啲物料供應嘅人或者係行業裏面做嘢嘅人佢點樣睇，我只可以話喺用 soldering 嚟講，佢係一隻係合乎 British Standards 或者 BS EN 合規格嘅物料，係可以用嘅物料，只要佢係選擇得一個--即係買啱貨，係冇問題。

問：你嘅意思即係用銀焊好，用嗰啲 soldering 都好，只要佢買嗰啲冇鉛嘅，唔含鉛嘅，就兩樣都好，係咪咁嘅意思？

答：只要唔含鉛，唔含 cadmium，兩樣都一樣係咁合適，即係佢係一隻焊接物料，佢主要就係令到嗰啲銅喉係可以變為 seamless，唔會漏水，唔會滲水，唔會爆喉，做得到呢個工作嘅，佢就係一隻適合用嘅物料。

問：所以你上次講，就話因為嗰個直徑係細嗰啲銅喉就唔適宜嗰啲，佢哋個行業就唔係咁睇嘅？

答：正確，係喇。

問：你同意，okay。

答：但係如果係大口徑嗰啲銅喉，作為焊接物料，我哋都係用 silver brazing 嘅，呢個都係事實嚟嘅。

李柱銘先生：我冇問題。主席，我想講多一句，就係你記性咁好嘅，我相信唔使點幾多嘅陳詞，將來。

主席：仲有冇人有嘢問呀？

殷先生：我有一個好短嘅覆問。

<u>殷先生補問</u>

問：馮女士，我有一點想同你澄清嘅，係關於今朝石大狀問過你一樣嘢嘅，你記得今朝石大狀同你講過，有一啲呢個信函上或者呢個 memo，就係 Theresa Yim 同埋伍達群先生嘅通信嚟嘅，就係講係話改用銅喉嗰陣時需唔需要做一啲 test 嘅，你記得吖嘛？

答：記得。

問：如果我冇記錯，你解釋到就話其實嗰陣時就係因為要睇下想選用嗰隻物料本身有冇一個譬如 British Standard 嗰停咁樣樣嘅嘢規範，如果冇嘅，可能佢入面某啲部件就有呢啲規範，但整件嘢冇嘅話，你哋就要去做一啲 test，你記得嘛？

答：記得。

問：問完你呢啲答案之後，石大狀就有一句就話「但係你決定咗話寫咗個 spec.係要啲咩嘢嘅時候，究竟選用個物料合唔合規格嘅，咁就唔使 test，得個信字？」你記唔記得佢咁同你講？

答：有少--係，係。

問：我就想同你澄清，其實唔係得個信字，因為如果你個 spec.講明話要跟一個 British Standard 咁樣，你哋係會選用真真正正選用物料做一個項目嘅時候，係會問嗰個供應商攞番一啲係 lab test 嗰啲報告，啱唔啱？

答：正確嘅，所以我話信就係信佢個 testing method，係跟佢個 BS EN 裏面所 specify 嗰啲 testing method，我哋就信佢嗰個 test，所以就淨係要求提供係嗰一啲 test 嘅啫。

問：譬如好似我哋見過呢個 FRY 99C 咁，呢個 Cookson Electronics 都有個 new tech laboratories 嗰啲咁嘅文件㗎嘛？

答：正確嘅，呢個就係 test to British Standard 裏面要求嗰啲測試。

問：當然我哋知道 lab test 就 test 一件嘢嘅啫，test 個辦嘅啫，究竟佢 test 完咗之後，嗰個生產線上面係咪做出嚟一路都嗰個水準係咁平穩呢，呢樣嘢就係工廠入面嘅物料嗰個質量管理，呢樣嘢你哋係做唔到㗎喇？

答：正確嘅。

主席：係咁多喇，係咪呀？

殷先生：係咁多。

主席：唔該晒馮女士。

答：唔該晒。

主席：走得。

Ms Chow。

周小姐：主席，而家 CIC 就第二位證人，就係李祥安先生。

主席：好。

周小姐：佢嘅證人供詞就喺 X4 bundle 3125。

<u>建造業議會第二證人：李祥安（建造業議會測試監督）以本地話宣誓作供</u>
<u>周小姐主問</u>

問：李生，你喺 2015 年 12 月 14 日就做咗一份英文嘅證人供詞嘅？

答：係。

問：喺 bundle X4 3127 頁有個簽名，你確認嗰個係你簽名？

答：係，我要睇--係，係我簽名。

問：好，我而家會將你呢份供詞讀出嘅，如果你需要翻譯，就聽番個...

答：係。

**COMMISSION OF INQUIRY INTO EXCESS LEAD FOUND IN DRINKING WATER, HONG KONG**

**WITNESS STATEMENT OF LI CHEUNG ON,**

**TRADE TEST SUPERINTENDENT OF THE CONSTRUCTION INDUSTRY COUNCIL**

1. I, LI CHEUNG ON of 15/F Allied Kajima Building, 138 Gloucester Road, Wan Chai, Hong Kong, provide this statement in respect of the Commission of Inquiry into Excess Lead Found in Drinking Water (**'COI'**) and in response to requests 6 to 11 of a letter of request dated 18 November 2015 from Lo & Lo, the Solicitors for the COI.

2. I am one of the three Trade Test Superintendents of the Construction Industry Council (**'CIC'**), a position I have held since August 2014. I completed the Construction Industry Training Authority (**'CITA'**) Basic Craft Course in Plumbing in 1981 and have since that time worked in the construction industry. In 1989 I qualified as a Grade I Licenced Plumber and in 2009 obtained the High Diploma of Building Services from the Vocational Training Council (**'VTC'**). In November 1996 I joined the then CITA as Plumbing Instructor and at CITA's Sheung Shui Training Centre taught mainly

basic craft courses in plumbing and pipe-fitting, as well as the plumbing module in Construction Supervisor / Technician Course. On 1 January 2008, the CIC amalgamated with CITA and after the amalgamation CITA ceased to exist as an entity. My employer was then the CIC until 2011 when I resigned due to personal reasons. I re-joined the CIC in 2012 as Supervising Instructor (Plumbing) and was promoted to Trade Test Superintendent in 2014.

**COI's Requests**

**Request 6 - '*from the evidence currently available, the use of copper pipes gradually became popular since around 2002, particularly in the context of public housing developments. With the extensive use of copper pipes, the method of soldering for the purpose of jointing pipes was also widely adopted. Describe whether and if so, how the plumbing courses and programmes offered by the CIC have made corresponding changes to cater for the popular use of copper pipes and fittings in the construction and installation of the fresh water plumbing system.'***

3. To my knowledge, the use of copper pipes for fresh water plumbing systems was already common in private works prior to their more widespread use in public housing developments in about 2002. To my recollection, the courses offered by CITA prior to 2002 already provided training in copper pipe jointing by different methods, including lead-free solder wire capillary fitting and compression fitting. I therefore do not recall any particular change in the content of such courses in response to the increased use of copper pipes in public housing developments since about 2002.

**Request 7 - '*confirm whether students were/are taught the different components (and the composition thereof) and***

***materials used in the construction and installation of the fresh water plumbing system.'***

4. In the courses offered by CITA / CIC, the students were taught, amongst other things:

   (a) the various types of pipes such as copper pipes, ductile iron pipes;

   (b) the names of various components such as capillary fittings, straight coupling, elbow and their functions;

   (c) the tools and machines used for pipe bending and cutting; and

   (d) the different connection methods such as lead-free solder wire capillary fitting and compression fitting.

5. Instructors would demonstrate the relevant skills and students would have the opportunity to practice.

**Request 8 - '*confirm whether soldering and soldering materials used in jointing of pipes for fresh water supply were/are topics covered in the courses run by the CIC during the Material Period and whether students were/are taught the different types and brand names of solder materials available on the market, including materials which are lead free and those which contain lead, and the differences (in components and functions) between solder wire (錫線) and solder strip (錫條).'***

6. Both solder wire and solder strip were introduced to students to demonstrate the difference between the two and to my knowledge, solder strips in general contain lead. The CIC uses lead-free solder wire for instruction purposes and does not use solder strip. Lead free solder wire capillary fitting is taught to

students for use during pipe installation in fresh water supply systems. There is no specific requirement as to brand of solder wire, apart from the solder wire being lead-free.

**Request 9 - '*confirm whether you or the CIC is/are aware of a soldering material (which is in the form strips) by the brand name of "50力扁錫條", provide a sample of such material and describe the composition (particularly the lead content) of such material.*'**

7. I was not aware of soldering material by the brand name of '50力扁錫條' until there was media coverage recently arising from the lead water incident.

**Request 10 '*confirm whether during the Material Period, students were/are taught that plumbing materials including solder should be of a lead free category and the risk of using plumbing materials which contain lead.*'**

8. During the courses by CITA / CIC, I would mention that all materials to be used for fresh water supply systems, including those for solder wire capillary fitting, have to be lead-free. The risk of using plumbing materials which contain lead is not taught since instructors are not medically-trained.

**Request 11 - '*confirm whether, during the Material Period, students were/are taught the skill of soldering for the purpose of jointing copper pipes, and if so, describe the method of jointing pipes properly by soldering. For the purpose of demonstrating the jointing of pipes by soldering, provide a softcopy of a video as an exhibit to the witness statement.*'**

9. Students were taught the skill of soldering for the purpose of jointing copper pipes. There is now produced and shown to me marked **'Exhibit A'** a Digital Video Disc (DVD) containing videos demonstrating the method of jointing pipes by lead free solder wire capillary fitting, compression joint fitting and press copper fitting.

10. The contents of this statement are true to the best of my knowledge and belief.

問：李生，我剛才讀出就係你嗰份英文書面供詞，你係是否願意接納作為你今次研訊嗰個證據？

答：願意。

問：我就係有啲問題就係會問你，你呢份證供喺第 2 段嗰度就話你 1996 年就開始喺呢個建造業議會嗰度做導師嘅？

答：係。

問：直至到 2011 年？

答：冇錯。

問：即係你做導師就成十五年？

答：係。

問：現在係咪亦都係有教呢啲課程？

答：而家就主力喺--都係喺議會工作，但係就唔係主力教學生，我而家喺工藝測試中心做一個測試嗰部分嘅一個測試監督。

問：即係 2011 年之後就冇教，係咪呀？

答：冇教喇，係。

問：你喺十五年你教嗰個課程，我哋今朝早陶先生畀證供，我哋就知道議會嗰度有不同嘅課程，你主要係教邊一個課程呢？

答：我主要係嗰十五年裏面都係教一啲基本工藝課程，一年制又有，兩年制都有教過。

問：而你教呢啲課程係咪跟番有個守則，有個 handbook，有個大綱，根據裏面所講嘅嘢，就教裏面提及啲嘢？

答：係。

問：你會唔會教啲個 handout 裏面冇提及啲嘢，你都會教嘅？

答：會。

問：你喺你供詞第 6 段，第 6 段你就話錫線同錫條都會畀啲學員--即係畀啲學員睇，即係教佢哋錫線同錫條個分別嘅？

答：係。

問：你喺第 6 段亦都話一般嚟講就係錫線通常就係有鉛嘅？

答：錫線，唔係。

問：對唔住，錫條，錫條，一般錫條係會有鉛嘅？

答：係。

問：你呢個講法係咪--根據我了解，係咪錫條同錫線嘅分別就係錫條係有鉛，錫線冇鉛呢？

答：唔係咁樣計嘅，就我哋錫線喺建築嚟計，同今朝陶生所講嘅，佢電子嗰種錫線係唔同嘅，嗰隻錫線好似頭髮咁幼，即係做電子嗰隻，中間佢有松香喺入面添嘅，一點到焫雞，佢就兩樣一齊熔解落去個線路板，而我哋建築用嘅錫線就係比起頭先所講嘅係粗好多倍嘅，我哋慣常用嗰隻大概係 5 毫米直徑嘅，都比支原子筆幼少少--比支鉛筆幼少少，都頗粗下，個情形係咁。

錫條，就我形容嗰隻錫條就係話，我哋教畀學生，介紹畀佢睇嗰個時間係條狀，大概 200 mm 長左右嘅，佢裏面就係寫明咗係"40-60"嘅，即係寫明咗係錫同鉛嘅比例添嘅，嗰隻就係唔係用喺供水系統嘅，係用喺另外一個，較另外一個受惠項目嘅，就我哋會攞出嚟教焊

錫嗰個時間，就會刻意同學生講一講，呢啲就係無鉛嘅錫線，呢啲錫條就係有鉛嘅，唔可以用落去供水系統度咁樣。

問：所以你喺第 6 段嗰度話錫條係有鉛，你指係你頭先所講嗰啲粗嗰啲錫條？

答：係。

問：就唔係話一定係凡係錫條就一定有鉛？

答：唔可以概括而論。

問：即係你喺上呢啲課程，你就係有同學生講呢啲--學員講呢啲嘢，係咪呀？

答：有。

問：呢樣嘢就係話有分別有鉛同冇鉛個分別，喺你嗰個課程嗰個 handout 嗰個守則裏面有冇提及到？

答：冇好刻意寫明係冇鉛嘅，嗰個年代係冇嘅，就只係話用「錫條」去形容，因為寫個 handout 嗰個同事、嗰啲管理層佢形容--因為錫條佢可能形容為--我哋一卷錫線之後，我哋要攞長佢之後，如果 cut off 咗出嚟之後，你揸住嗰一條 5 毫米直徑嘅一條錫條，佢都可能認為呢條係錫條嘅，但係實際佢喺嗰個一卷卷裝嚟計，我哋內行有啲人叫做錫線，因為寫 handout 嗰個就唔係我哋啲師傅寫嘅，但係我哋明嘅，我哋每一個師傅都明。

問：你喺第 8 段，你個供詞裏面，你話就喺你上呢啲課程嘅時候，你就會同啲學員講，就係需要用嗰啲無鉛嗰啲焊料嘅，係咪呀？

答：係，冇錯。

問：呢一樣嘢喺嗰個守則個 handout 裏面有冇講明要咁樣同學員講呢？

答：Handout 裏面就淨係講錫條，但係就我哋就個認知裏面就知道係無鉛嘅先用得喺供水系統，所以喺我哋嘅--即係所以每一個師傅嘅經歷都唔同，咁我哋嘅--入得去議會做，一定係有番咁上下年資同埋有水喉牌，個課程裏面會將師傅嘅認知會教授畀學員。

問：所以你本人你就會同啲學員講就唔可以用啲有鉛嘅焊料，係咪呀？

答：冇錯。

問：即係你喺十五年做導師，每一個課程你都會同啲學員講嘅？

答：係，一去到教授嗰個項目嗰個時間，我就會帶出呢樣嘢教學員。

問：你知唔知道其他嘅導師會唔會都有講同樣嘅嘢呢？

答：就以我所見，因為我自己本身喺上水教，佢都有四位導師一齊嘅，喺同一個 workshop 裏面，個過程裏面，我所見佢哋都係用緊我用緊嘅同一種焊料去做教學員，至於講嗰方面，有時都會聽到一個、半個同事有講嘅，但係就當然唔係全部同事聽到晒嘅。

周小姐：我冇其他問題，主席。

<u>石先生盤問</u>

問：李先生，你嘅證人供詞後面就夾咗一個 DVD 嘅，就係裏面有一個示範各種嘅焊接嘅方法。

答：係。

問：我哋安排咗就即係好短嘅啫，我就放番出嚟，跟住我可能有啲問題即係接住嗰度可能會問你。

答：好，可以。

問：我哋放一放出嚟，睇一睇先。

答：好，唔該晒。

（法庭播放各種焊接方法示範的數碼光碟）

問：李先生，四個都係你本人嚟嘅？

答：係。

問：我想有啲關於嗰四種辦法，我都問一問，澄清咗先。

答：可以，可以。

問：第一種就係唔使用焊料嘅，第一種係純粹擰嘅啫？

答：壓接，係喇。

問：係咪叫揸瓦，嗰種--有一種叫法？

答：我哋行業上叫做壓接。

問：第一種喎？

答：係，第一種，用個六角士巴拿去卡住壓嘅。

問：第二種呢？

答：第二種係--睇下先，係...

問：第二種先係壓入去？

答：用嗰個槍嘅，嗰個槍我哋叫卡壓式。

問：卡壓式，係，okay。

答：係喇，卡壓式嘅接駁方法。

問：頭嗰兩種都唔係用焊料嘅？

答：唔係用焊料嘅。

問：所以頭嗰兩種其實...

答：用機械式去令到嗰個喉去唔漏水，同埋改變咗個角度。

問：所以連接兩條管中間嗰個部件裏面都唔會有焊料喎，應該？

答：唔會有。

問：唔會有嘅？

答：係。

問：好喇，第三種就係用錫線㗎喇，第三種？

答：係。

問：直情就係攞住一卷錫線咁走去熔落去㗎喇？

答：冇錯。

問：我想問你，就係即係我哋頭先都見到實際嗰個情況，就係你燒熱咗嗰個部件，即係你唔係燒條線，你燒熱個部件，跟住條線慢慢吼落去，咁就睇下等到佢夠熱熔為止，你就等佢慢慢順住就撻落去，等佢慢慢燒熔？

答：係。

問：我想知道就係你燒熔嘅過程之中，嗰啲焊料係會變成液體狀嘅？

答：係。

問：會滲入去嘅？

答：你講喺條喉度放上去嗰時吖嘛？

問：係。

答：喺條喉上面，你已經係見到佢熔咗喺喉嘅表面。

問：佢熔咗喺喉嘅表面啫，但係佢有可能會喺啲空位滲咗入去銅喉同埋個部件中間嗰啲虛位，會入咗去㗎嘛？

答：哦，你講後面嗰個階段，即係話我接駁咗個 elbow 之後，然後再滲錫入去嗰時？

問：係。

答：係有咁嘅可能性，所以就要睇下你個技術同埋...

問：係喇，我想問你，就係而家我哋大家聽見成日講就係話食水含鉛就係因為用咗一啲含鉛嘅焊料，如果你嗰啲焊料純粹係包住外面嘅話，理論上就唔會走咗入去條管入面影響到啲水嘅，所以即係其實我純粹用

一個街外人嘅諗法，就梗係你嗰啲焊料用嘅時候滲咗入去入面係可以同銅喉裏面嘅食水接觸到，咁先至嗰啲鉛可以釋出入到啲水度嘅啫，係咪，可唔可以咁講？

答：咁講，如果你係放啲錫焊料入去嗰個時間，其實就佢都有一個接觸面嘅，佢會同我哋出面見到嗰個銀色個圈咁上下大細，即係佢喺內部裏面個曲同埋條喉都有個接駁口，啲錫都會熔到去嗰個位嘅，如果你唔係孿得太多入去，佢基本上就係黏到嗰個位就收啖喇。

問：好，咁所以...

答：如果你繼續加熱，繼續放錫條，佢當然會有部分流出嚟，有部分會入咗條喉入面。

問：係喇，所以有一個問題就大家都有興趣嘅，就係用咗含鉛嘅錫嘅焊料，唔係是必嗰條管一定會釋出啲鉛份入去啲水度嘅，係咪？都會同你嘅手勢有關？

答：個接觸--如果你個手勢個技術做得好嘅，個接觸面會細。

問：即係好簡單，如果我個接觸面細或者你淨係喺外面嗰浸，而你唔會成擘唧咗入去，佢滲咗好大擘入去條管入面，嗰個釋出鉛份入水嘅機會就會細啲，可唔可以咁講？

答：你可以咁形容，係喇。

問：可以咁講？

答：接觸面係細咗。

問：你哋教嘅時候有冇教埋呢樣嘢，就係就算你唔好講有冇鉛，你教嘅時候有冇講就話「唔好咁重手勢，一擘入咗去，因為啲料」？

答：有，我哋會教學員，因為我哋每一次教之後，我哋要示範，示範嗰個期間，我哋會示範個關鍵點，好似頭先咁樣，我哋一路講一路教嘅，如果過程裏面留意乜嘢，或者如果我哋見到佢練習嗰個時間佢係不顧一切咁係狂燒或者狂落錫條落去，我哋會糾正佢咁樣係唔啱。

問：但係狂落會唔會有個好處，就係話一定夠料，一定唔會唔夠喇？

答：呢個係一個工人嘅信心問題，佢嘅技術如果掌握得好，頭先你見到我，我都冇加到錫條，喺第四個 step。

問：第四嗰個係用錫曲㗎嘛，嗰個係？

答：嗰個錫曲，嗰度，係喇，嗰個就都唔需要加添，咁...

問：因為裏面已經有喇？

答：係喇，如果你第三個嗰個示範，就會見到我淨係加少少喺面頭嘅啫，我就已經收喇。

問：但係第三個示範，佢嗰個曲入面有冇焊料？

答：冇。

問：冇㗎嘛？

答：冇嘅。

問：因為...

答：所以我就需要抹錫爪，喺條喉預先落咗錫落去先。

問：呢度我要講一講，錫爪呢個名詞之前冇聽過，錫爪係咩嘢㗎其實？

答：喺個--係呀，...

問：好老派嘅叫法，我有人話畀我聽係。

答：我哋一路--啲師傅一路教落嚟，我哋都學師出身，我哋啲師傅係講呢一個名詞係叫錫爪，抹錫爪。

問：係咩嘢㗎？錫爪係咩嘢㗎？

答：即係話你喺條喉燒熱佢，預先加咗啲錫落去，因為你個曲入面係冇錫㗎嘛，如果你話完全--而家出面嘅做法就係話完全唔抹嘅，之後就接駁，喺外面燒熱就靠滲入去，咁滲到幾多入去、均唔均勻，係呢個我哋要睇呢個技術拿捏到邊度。如果我哋係事先--我哋教學員，我哋教全套，喺我哋議會嚟計，我哋就會教佢抹錫爪，如果用親呢隻配件，抹錫爪，當然時間會用多咗嘅，但係你事先你眼見到個喉已經係全部個位置接觸面已經有錫，我只要加少少落去，佢就已經黏貼埋，將個曲同埋嗰個...

問：得，得，總之我哋而家仲係講緊第三種，我哋唔好講錫曲內裏--已經

個曲裏面有焊料嗰種我哋唔好講，嗰個係第四種。

答：好。

問：第三種，第三種就係你嗰個曲入面係冇焊料嘅？

答：係。

問：就一種做法就係你插咗個喉入去嗰個曲裏面先，然之後先喺外面加一浸落去？

答：係。

問：但係你講話要錫瓜呢個方法就係你將條喉插落去個曲之前，你省乾淨個喉嗰個面，然之後就喺上面已經燒定一浸焊料落去？

答：冇錯。

問：對嘛？

答：係。

問：燒咗嗰浸落去就凝結咗，係咪呀？

答：係。

問：凝結咗，跟住就即係有一浸錫料喺嗰個喉嘅嗰個終端嗰度喇？

答：係，冇錯。

問：所以你就將佢插咗落去嗰個曲入面之後，嗰個曲同埋條喉中間已經有一浸焊料，係咪咁解？

答：冇錯，啱。

問：當你再加熱嘅時候，嗰浸已經存在喺裏面嘅焊料都會熔，係咪呀？

答：係。

問：即係你都係想佢熔嘅，係咪呀，其實？

答：我想佢熔。

問：你想佢熔嘅？

答：係。

問：即係你加一浸錫入去，佢凝結咗，但係你再燒，佢就喺入面熔，所以你外面加嗰浸焊料就唔使加好多，因為你靠入面已經喺度嗰浸，熔咗佢，...

答：冇錯。

問：...就已經係即係封實咗入面個口，可以咁講，係咪呀？

答：係，冇錯，加少少已經毛細管作用入咗去。

問：行外嘅說話係咁講，啱唔啱？

答：啱嘅，啱。

問：得。你叫做錫瓜，係咪呀，呢樣嘢？

答：我哋叫做抹錫瓜，行業上。

問：抹錫-- okay。

答：如果我哋改變呢個名詞...

問：個瓜係咩嘢嚟，其實即係有冇得解？

答：個名詞嚟嘅咋，其實唔係一種形容--形--係一個動作。

問：抹錫瓜總之就係將一啲焊料包咗喺嗰個管嘅尾嗰度？

答：係喇，係喇，呢個動作。

問：得。最後一種就係嗰個叫做錫曲喇？

答：係。

問：錫曲就係街外買番嚟已經裏面含有咗焊料嘅嗰個接駁嗰個部件？

答：係，正確。

問：我哋叫曲或者嗰個轉彎嗰個位喇？

答：冇錯。

問：街外買番嚟嗰個錫曲入面嗰啲焊料其實係咪全部已經係保證無鉛，定係你真係要去到買嘅時候，真係要指明話「我要無鉛嘅錫曲。」㗎？

答：冇指明係無鉛嘅錫曲嘅，行業上都冇...

問：你去買錫曲嘅時候，人哋畀啲咩嘢焊料你？

答：咁要睇下個牌子，你買嗰個時間個信心喇，如果譬如我哋買過有啲英國牌子嘅，我哋都確認佢應該係無鉛嘅，但係當然我哋唔會走去試，我亦都冇咁嘅能力去買一個曲而走去試佢啲錫有冇鉛。

問：因為我哋有陣時之前問過好多師傅，我哋問過話「你考牌嘅時候用咩嘢㗎？」好多都話「我哋考牌或者學嘅時候用錫曲嘅。」個個講到順理成章好似講到用錫曲就實安全咁，但係即係我想知道其實你用錫曲入面嗰啲料都唔係是必擔保你係無鉛㗎嘛？

答：係。

問：如果你唔講定要某種牌子或者某種嘅含料嘅話，淨係走去買錫曲，佢真係隨便畀一隻你，可能裏面含咗鉛㗎喎其實？

答：呢個可能性嘅，我唔...

問：有可能嘅？

答：係，唔敢保證。

問：好喇，我問番你一啲個人嘅資歷先，你就喺證人供詞裏面--你唔使睇，我講畀你聽。就係你裏面就講過你喺 1981 年嘅時候就考過一個嗰個基本嗰個技術嗰個課程嘅，叫做係 Basic Craft...

答：我係前身建造業訓練局嘅基本班嘅學員嚟。

問：基本班，嗰個基本班就其實係咪即係相等於而家考中工嗰個基本班？

答：係而家嗰個訓練--...

問：即係我知道事情可能變咗好多。

答：...訓練嗰個課程係一樣嘅，...

問：即係等於而家考...

答：...但係考中工就係另外一個--唔係一個訓練嚟，佢係一個考試。

問：Okay，但係不如咁講，你考如果當年嗰個基本嗰個試，你當年1981年考嗰個引致到你攞咗咩嘢資歷，係咪考咗個牌？

答：我係攞咗一個證書，係一年制嘅建造業訓練局嘅畀嘅證書。

問：但係引致到你有冇繼續中工牌定係點㗎？你攞住...

答：嗰陣時仲未有中工牌呢樣嘢生產嘅。

問：未有嘅？

答：係。

問：好，你就攞咗嗰個叫做Basic Craft Course，嗰個基本...

答：係，trade test考試呢個制度喺1995年先開始。

問：得，好，你就係1989年，你就攞咗個資歷，就係叫做一級嘅水喉匠，一級持牌水喉匠，係咪呀？

答：Sorry，...

問：Grade one，1989年...

答：1989年...

問：...你係攞咗一個grade one，一級嘅持牌水喉匠。

答：差唔多，係喇，咁上下時間。

問：當年未改制，即係呢個持牌水喉匠係水務署嗰啲條例要求嘅持牌水喉匠，對嘛？

答：係，去水務署度考嘅。

問：當年就仲有分級嘅，而家就得一種喇？

答：係，而家得一級。

問：當年就有兩級嘅，應該係，冇記錯？

答：如果我冇記錯，係兩級，係，一級、二級咁樣好似。

問：兩級，grade one、grade two 咁樣嘅，你就攞咗一級？

答：係喇。

問：我嘅理解就係應該九十年代初嘅時候，唔好話邊年，九十年代初，呢個一、二級制嘅持牌水喉匠就冇咗嘅，係咪呀？呢個制度，應該係，變咗得一種啫？

答：呢個我唔清楚幾時開始冇咗二級嗰個制度考，通常都係啲人一考就考個一級，因為一級可以申請到水錶，二級唔可以，咁樣。

問：即係簽紙嘅就要一級喇？

答：係，冇錯。

問：即係可以好籠統咁講，可唔可以就係話你當年如果考咗個一級，你而家就根本就係做番而家嗰個 LP 要做嘅嘢可以？

答：冇錯。

問：即係過度到就係而家嘅 LP 喇？

答：冇錯。

問：當年嘅二級可能就而家冇咗嗰個簽紙嗰個能力？

答：呢個我唔清楚。

問：唔清楚？

答：係，因為我冇攞過二級。

問：好，呢個可能講--呢個--唔係，其實睇番法例，我哋要即係追番可以追嘅，不過即係你行內人，我睇下你有冇呢個認知嘅，要睇番當年嘅法例，逐個逐個咁追，可能追到，水務署可以睇到，不過唔緊要。

答：係。

問：你就 96 年開始就喺 CITA 嗰度就負責教喇？

答：係，冇錯。

問：你就頭先講就話你教嘅時候係有向啲學員介紹有錫條同埋錫線兩者嘅分別嘅？

答：係。

問：你亦都有同佢哋講過就係錫條唔係是必含鉛，但係好大機會都會含鉛？

答：係。

問：咁喇，但係你實際上教人哋做焊接嘅時候，食水焊接，你就話係用錫線嘅？

答：無鉛嗰隻錫線，係。

問：係一卷卷呢一種，係咪呀？

答：係，冇錯。

問：係咪其實行內講親用無鉛錫線都係用呢一種"FRY"嘅...

答：牌子我哋唔敢講係咪一定係呢隻牌子，應該係呢隻。

問：一卷卷嘅？

答：係，比較粗身呢啲，係喇。

問：你頭先話即係5毫米直徑，咁就...

答：大概嘅啫都係，大概5毫米。

問：大概5毫米直徑就係呢隻？

答：係。

問：我就想同你就睇一睇嗰啲教學嘅材料，麻煩你睇一睇就係X1，文件夾X1 71至72頁。

答：71、72，係。

問：呢一個就係好耐以前，2001、2002年嗰個年代用嘅一套教學材料，

即係一個教學範圍咁樣嘅，如果你想睇真啲，你睇番就係第 11 頁，呢個文件夾嘅第 11 頁就係 2001、2002 年度一年制基本工藝課程。

答：係。

問：你睇番第 71 頁，呢度就有講錫焊係乜嘢，即係基本上係講咗一啲技術性啲嘅嘢。

答：唔。

問：跟住就 72 頁，銅管，銅管，就話「銅管有時可以用直流電焊機」如何、如何咁樣，睇到最屘，「銅管有時亦用錫條焊接（抹錫瓜或走錫）」咁樣，你見到喇？

答：係。

問：首先我想問你，就係行內其實大家都叫圓形一卷卷呢停嘢做錫線嘅，係咪呀？線係因為可能佢幼啲，所以叫佢做錫線嘅，係咪呀？

答：個人個觀感喇，因為就錫線佢而家一卷卷，我哋叫錫線，但係如果你有啲行家就有時唔方便成嚟喺個棚度做嘢，佢會攞咗出嚟，cut 咗佢，可能呎零、二呎咁樣形成一條條狀，有啲人都形容佢係錫條咁樣。

問：好喇，即係其實你係咪嘅意思係話畀我聽其實行內冇話有一個約定俗成嘅叫法，就係逢親一卷卷呢啲好幼嘅線，無論係卷狀、定係攞咗出嚟，剪成咗直線狀，都係叫做錫線嘅，就冇一個咁嘅約定俗成嘅叫法嘅？

答：可以咁講，係冇嘅。

問：冇嘅，因為卷嘅時候就叫線...

答：個個人觀感囉。

問：Okay，所以其實行內其實有陣時你口嗡，即係都未必知道你講緊邊種嘢㗎喎其實，因為頭先你話卷狀嘅時候就叫做線，但係有啲行家就係你攞咗出嚟之後，為方便，攞直咗佢，剪咗一條條攞去開工，佢都會叫剪咗出嚟嗰啲做條嘅？

答：係。

問：嗰啲條就冇鉛嘅，但係你有冇見過呢一隻呢？長形嘅呢一隻，唔好講

牌子，長形咁樣係可能係粗啲嘅，咁樣，你有冇見過？

答：見過。

問：見過？

答：喺出面嘅五金舖有散賣嘅，見過。

問：散賣一條條長啲嘅呢啲嘅？

答：係。

問：你哋有冇認知，就係你哋會叫呢啲做咩嘢呢？

答：我哋叫佢做錫條。

問：叫做錫條？

答：係喇。

問：所以線就係一卷卷幼嘅就叫做線，跟住一條條直條狀嘅就變做條㗎喇，無論佢個化學成分係乜嘢都好，係咪咁講？即係你哋咁樣叫法？

答：名稱上可以咁講，但係如果你話出面有啲師傅會唔會揸住嗰個錫線，剪咗出嚟嗰一條叫錫條呢，就我頭先都講咗，係個人觀感問題，個人感覺佢係一個條狀，咪就係錫條囉。

問：好，即係其...

答：就唔係因為個名詞而令到佢--話佢係有鉛定係冇鉛。

問：即係話有啲人會選擇叫呢停嘢做錫線，無論係卷狀定係直線狀，但係有啲人頭先你所講就係卷狀嘅時候就叫做線，但係攞直咗就叫做條，就因人而異嘅，你嘅意思係話？

答：係，冇錯。

問：行內就冇話大家即係一套既定嘅叫法，就冇嘅？

答：冇，係。

問：以你嘅認知？

答：係。

問：你介紹呢啲唔同嘅材料，即係舉個例，你要上去班房，或者你喺個工場嗰度介紹，你會介紹--因為你個證人供詞就話你會介紹錫條同錫線喇？

答：我講個錫條--供詞裏面嘅錫條係一條--頭先我所講，大概 200 mm 長，成個 10 両重金條咁嘅大細嘅一啲條狀，佢裏面仲有個刻度寫住"40-60"嘅。

問：Okay，呢個就 50 力就 50，但係即係嗰個係百分比，總之就係類似咁樣一條條既定好長，剪咗嘅？

答：我哋唔係講呢隻。

問：唔係講呢隻？

答：供詞唔係講呢隻。

問：供詞唔係講呢隻？

答：係。

問：就 200 mm？

答：大概 200 mm 長嘅。

問：200 mm 即係 20 cm 嘅。

答：兩頭係圓嘅，直條形，銀色，係喇。

問：得。

答：有啲字嘅，即係佢倒模出嚟嗰時有啲字喺度添。

問：好，40-60 喇，個鉛嘅百分比係 40，係咪呀，應該？

答：係，冇錯。

問：好，唔係 50 力，唔好講牌子喇。但係嗰隻你就會同同學講「呢一隻我就叫做錫條。」但係你介紹畀佢嗰個焦點唔係在乎佢叫條定線啫，你介紹畀佢個目的係因為裏面有鉛，係咪呀？

答：有鉛，同埋另外一隻係冇鉛，用喺供水系統。

問：即係你介紹呢兩種嘢畀同事就唔係話畀佢聽名稱嘅唔同，個重要性就係在於佢內裏包含嘅嘢嘅唔同？

答：冇錯。

問：你介紹畀同學聽錫線嘅時候--我講你本人，你介紹畀同學聽錫線嘅時候就攞住一卷咁嘅嘢，係咪呀？

答：係，冇錯。

問：你點樣介紹畀同學聽去分辨，即係用牌子分辨，定係用樣分辨，定係點呢？定係純粹同佢講話記住有啲嘢叫有鉛，有啲嘢叫無鉛？

答：係，話畀佢聽有啲有鉛，有啲冇鉛，我哋用喺供水系統裏面一定用啲無鉛。

問：咁就同佢哋講話無...

答：而家見到呢條就係有鉛嘅，就千祈唔好攞嚟用喺供水系統裏面。

問：就你示範就係用一條條咁樣嘅畀佢喇？

答：係喇，係喇。

問：但係頭先學你話齋，一條條嘅唔係是必一定有鉛㗎喎，你用呢啲卷裝嘅剪直咗都係無鉛㗎喎，你點教佢哋分辨呢？

答：我而家就--當其時我哋係得兩種嘢喺度，我就淨係話到畀佢聽呢樣嘢。

問：即係直嚟嘅，本身天生出嚟直嘅就係有鉛嘅，...

答：唔係。

問：...天生出嚟一卷嘅就冇嘅？

答：唔可以咁講。

問：唔係，點介紹？我想知道。

答：你手揸呢卷，「我哋見到佢係寫住係無鉛嘅，我哋做喺供水系統嘅，呢隻係無鉛，但係另外一隻喺中心裏面係有嘅，呢一隻寫住〝40-60〞

嘅比例嘅，呢隻係有鉛嘅，唔好用喺供水系統裏面」。

問：Okay，就...

主席：你哋 40-60 嗰隻愛嚟用喺乜嘢系統上高？

答：我唔係用喺系統嘅，嗰隻喺我哋訓練中心裏面其實喺水喉呢個行業，喺英國呢個年代一路帶落嚟，係水喉匠係要做埋白鐵嘅。

主席：做咩嘢話？

答：白鐵，做白鐵，嗰個開啲剪開圖，屈成一啲形狀，然後扣骨，扣完骨之後，譬如做一個漏斗，做一個漏斗，個漏斗裏面譬如斟火水，你要用漏斗吖嘛，嗰個時間你摺完一個形狀嘅嘢之後，你扣完骨之後，扣住啲骨係會漏啲液體出嚟，所以喺個扣骨嘅過程側邊，就要焊一啲錫落去，焊啲錫落去將佢接駁。

主席：咁呢啲...

答：咁嗰隻就會用嗰隻 40-60 嗰隻...

主席：呢啲就唔--呢啲係水喉匠會做嘅嘢吖，抑或咩嘢話？我唔係好...

答：係。

主席：係水喉匠要做嘅？

答：係我哋學師嘅年代一路教落嚟都有呢樣嘢，所以我哋識...

問：就英國傳統水喉匠都要包埋做埋呢啲嘢嘅，你話頭先，係咪呀？

答：係呀，喺我哋啲師傅一路教落嚟都有呢樣嘢，所以我哋識嘅嘢，我哋都會全程教晒畀啲同學--啲學生。

主席：你嘅意思即係焊料就有好多種用途嘅，就視乎你愛嚟做乜？

答：唔一定係做供水。

主席：如果用供水，就一定要無鉛。

答：冇錯。

主席：就係咁簡單，但係個問題係咁，石大狀，譬如頭先佢講到，譬如好簡單，一個學員去到一個地盤，焊料就由老闆供應嘅，一條條㗎喇，又冇印，又冇牌子，咁點分呢？

答：咁就分唔到㗎喇，你畀一個行家，你就咁放兩條形狀一模一樣嘅，你叫佢分辨，你同我都分辨唔到，用肉眼，如果大家造成一模一樣嘅形狀，一定係靠一啲而家嗰啲快速嘅試劑或者一啲光譜儀，咁先至能夠可以分辨得到。

問：即係可唔可以咁講，實際運作起嚟，如果嗰個水喉工人，就算佢攞大工牌都好，佢打份工，去到個地盤，老闆畀咗一拃嘢佢，剪好晒一條條，剪好晒一條條唔係是必一定係錫條或者錫線，學你話齋，原裝一卷卷，可能個老闆好手勢，幫你剪定一條條，你唔知㗎嘛，所以佢就真係又未必方便開聲話「我要調查你係含鉛與否。」所以就真係可能畀乜就用乜，但係你教佢話「你要分辨有鉛、無鉛。」可能就係第二時佢做咗採購或者佢做咗話事嗰個，佢可以開始有啲影響力去決定用咩嘢，咁就方便佢第二時高級啲嘅時候就知道「我要訂無鉛嘅。」...

答：無鉛，係喇。

問：...係咪咁解呢？

答：啱。

問：就其實你教佢哋分辨有鉛、無鉛，就唔係真係好刁鑽地講話邊一個形狀就一定係有鉛或者無鉛，咁啱你用開嗰隻...

答：唔係，呢個 main point 唔係講佢嘅形狀係點樣。

問：得，我了解。

答：個 main point 係用喺食水系統裏面唔可以用啲有鉛嘅成分嘅錫條。

問：明白，咁啱你嗰卷係咁樣卷狀？

答：冇錯。

問：但係你嘅 main point 就唔係形狀？

答：係。

問：得，我理解。咁所以你望下呢個 72 頁，你話「銅管有時亦用錫條焊接」，頭先你所講，周大律師引領你畀證供嘅時候，你就話就其實寫呢份嘢嘅同事就唔係落手落腳教嘅同事，所以其實佢所指嘅錫條可能係一個統稱，同埋你哋教嘅時候可能直嘅就係錫條，...

答：係。

問：...彎嘅一卷卷嘅，你會叫做線嘅？

答：我諗嗰個同事講嗰樣嘢都係嗰隻無鉛嗰隻錫線嚟嘅，只不過佢寫出嚟就係錫條咁嘅啫，我哋啲師傅亦都明白佢寫嘅嘢係乜嘢。

問：但係我哋聽到啲證供，有啲師傅話就佢哋訂貨，佢哋想要乜呢，就係想要無鉛嘅就叫錫線，想要有鉛嘅就叫錫條。

答：唔得㗎，咁樣唔得㗎，我哋一定要寫明--如果我哋--即係以我哋 CIC 嚟計，我哋訂貨，一定係寫明「無鉛錫線」，咁就係無鉛錫線嚟囉，同埋我哋更甚...

問：即係你教埋啲人「如果你有朝一日做到話事嗰個，你就要咁寫」？

答：...我哋會喺採購嗰面，就話我哋會將我哋用過嗰啲形狀，即係可能有一餅 spare 喺度嘅，我哋就會影埋相，「我哋要呢隻形狀、呢隻牌子嘅無鉛錫線。」咁。

問：即係你教佢哋就會教埋？

答：即係會夾埋落去個採購單畀採購部去...

問：即係你教佢哋應該咁做嘅？

答：即係你講學員？

問：係，係。

答：學員，冇講到咁深入嘅。

問：唔係，我明，你頭先話「我哋採購單」，你係咩嘢「我哋」？即係你

自己實際做嘢嘅時候，係咪呀？你意思係？

答：係，我哋做嘢嗰陣時。

問：Okay，okay，就影埋相嘅，採購嘅時候就話「我要呢隻」？

答：驚採購會買錯，我哋咪唔想即係送咗貨嚟又唔啱，又退貨，我哋會影埋相，有時。

問：哦，okay，因為我哋聽到啲證供就係話地盤嗰啲話事人、打理，佢就心諗就話錫條就係一條條嘅、有鉛嘅，錫線就係冇鉛、一卷卷嘅，所以佢哋寫請購單，send 番寫字樓就講「錫條、錫線」，寫字樓啲人就原封就「錫條、錫線」就 send 畀個 supplier，...

答：我唔知道地盤嗰啲做法點...

問：...supplier 佢哋內部就覺得一卷卷就叫錫線，一條條就叫錫條，照供應，就係咁喇。但係你哋不嬲你教啲工人，有冇教佢採購步驟？

答：學員，我哋教採購唔係咁 detail 教到話錫線，呢個專門教錫線，我哋會教譬如我哋喉管幾長，5 米 8 長，有啲呢一隻 6 米長，...

問：就要預幾多料咁，係咪呀？可能要教佢？

答：係喇，預料嗰陣時你計咗個 metre 數幾多，你就要除番呢個數，就知道用幾多之後去訂料，我哋會教呢樣嘢，但係就冇好刻意仔細話錫線一定要訂卷裝各樣嘢。

問：即係你話你個 focus 唔係 on 一條條定一卷卷，一定要你--一定要講無鉛啫，你嘅意思就係話？

答：係，冇錯。

問：但係你睇番呢一個就係 2001、2002 年嘅一個 syllabus 嚟嘅，嗰個範圍，範圍有陣時就就咁寫嘅啫，老師口講就可能有啲自己加嘅發揮落去會，對嘛？

答：冇錯，啱。

問：頭先你所講，就係話呢度寫就係咁寫，但係你哋教可能會有實際嘅示範或者會解清楚有鉛無鉛喇？

答：冇錯。

問：好喇，但係你睇番到到 2015 年，即係我哋出咗呢個鉛水事件之後，呢啲嘅 syllabus 就有更改，我畀你睇一睇更改之後嗰個樣係點嘅，就係 X3，X3 嘅 2020 同埋 2021，2021 就係左面，呢份我話畀你聽係咩嘢嚟嘅，可能你都見過，呢個就係 2015 年 9 月開班嗰個基本工藝課程嗰個範圍，你都知嘅，你負責教...

答：我唔係，而家我冇負責教。

問：你負責測試，sorry，你而家負責考核、測試嗰部分？

答：係。

問：但係你都要知道個 syllabus㗎，係咪，即係？

答：其實個 syllabus 我就--我唔係做訓練，我唔需要知嘅，但係點解我會知道有呢樣嘢嘅改動呢，你係咪話講加咗「無鉛」嗰個字眼？

問：對，對，對，對。

答：嗰個因為係我哋個總監梁總監收到即係政府--因為佢都始終係一個專業人士，係一個工程師嚟嘅，同埋我哋持牌水喉匠，水務署定期會有啲通告落嚟，有啲例修改咗，會發畀啲專業人士、學會，我哋梁總監就知道咗有呢方面嘅事件發生咗之後，佢都好著緊，叫我哋喺個課摘裏面，負責訓練嗰啲同事要修改番啲字眼，要好刻意係講番畀啲學員聽，教畀佢聽--雖然我哋平時都有教，但係字面上都一定要標番落去係無鉛嘅咁。

問：得，你睇番 2148 頁，2148 頁。

答：2148？

問：2148，2148，你頭先所講話佢係專業人士，會收到一啲就係--即係佢哋會收到呢啲咁樣嘅通告，係咪呀？

答：係，冇錯。

問：你嘅意思係？

答：係。

問：好喇，即係呢份嘢更改唔係你更改嘅？

答：唔係。

問：不過你有呢個認知就更改咗，因為係順應水務署方面出咗嘅呢啲通告？

答：係，因為總監發電郵出嚟畀所有同事。

問：好，咁你睇一睇 2021 頂嗰度，「施工的銅管焊接物料-錫線（不含鉛」呢句係新加嘅，你睇一睇 2021，...

答：你講...

問：2021 頁。

答：2021？

問：2021，佢嗰度寫住「施工的銅管焊接物料-錫線（不含鉛及呈交焊接物料無鉛證明書）須符合水務署標準和批準後方可使用」，「錫焊接駁的焊位須使用無鉛錫線焊接。」見到喇，呢段就係新加㗎喇，係順應...

答：Sorry，我未跟到嗰個位--哦。

問：2021 頁頂嗰度。

答：見到，見到。

問：「施工的銅管焊接物料-錫線（不含鉛及呈交焊接物料無鉛證明書）須符合」一路咁嗰三行，你見到喇？

答：係，見到。

問：佢話用錫線或者佢用錫線嚟形容嗰個物料嘅，你睇番呢一版最底嗰度，「銅管」嗰度。

答：係。

問：「銅管」最屘嗰兩行，「有時亦用錫條焊接（抹錫瓜或走錫）」咁樣，係咁寫，呢個就係現有，即係以前一路盤古初開都係有呢句嘢㗎喇，「錫條」？

答：係。

問：即係以我外行人睇，就話呢度同埋一版，你哋自己嗰啲教學文件都好似將呢兩樣嘢分開，錫線就講明係無鉛嘅，錫條就零零舍舍分開講，即係會唔會其實根本即係你哋心中錫條同埋錫線嘅分別就係一個有鉛、一個無鉛呢？

答：唔係。

問：唔係嘅？

答：應該我估計係同事去糾正番呢樣嘢，加番呢樣嘢落去嗰陣時睇漏咗呢一度呢個位置，佢亦都唔會--個同事冇意會到錫線同錫條係--大狀你所講係作為一個分別佢有鉛定冇鉛嘅界定。

問：你要原諒我哋，因為我哋聽咗我哋啱啱嗰兩個禮拜就枕住聽就係好多師傅都同我哋提到有陣時啲人叫錫線、錫條，採購嘅人又講錫線、錫條，供應商又講錫線、錫條咁樣，所以有陣時我哋一睇望落去，就第一個反應就話「咦？係咪編寫呢啲教學材料嘅人，其實佢哋都係咁樣去分辨，無鉛嘅錫線，有鉛嘅就錫條呢？」咁？

答：我相信係個同事--因為而家編寫呢一個課摘嘅同事已經係退咗休，嗰個時間佢--而家新接手，2015 去改呢個課摘個同事可能跟嗰個時間冇咁仔細跟到下面，佢亦--話錫條變錫線呢個問題，我相信嗰個同事亦都唔會話用錫條、錫線個形狀去界定佢有鉛定冇鉛。

問：好喇，你喺證人供詞嘅第 8 段就有提過，就係話你哋教嘅時候或者你教嘅時候，就會叫佢哋食水就用無鉛，但係你就冇教佢哋用咗含鉛嘅焊料會有乜嘢風險、有咩嘢危險，你就冇教嘅？

答：冇嘅。

問：因為你哋冇醫學嘅訓練咁樣？

答：係喇。

問：但係常理，我叫你做一樣嘢，唔好用某種材料，通常梗係因為嗰種材料有啲問題唔用嘅啫，即係你教人嘅時候，你同佢講，你話「唔好用含鉛嘅。」你冇順手講就話如果含咗鉛就會有乜嘢問題，亦都唔會有人問番你「點解呀？」咁？

答：我未見過即係啲人飲咗大量嘅鉛落肚會有咩嘢反應，所以我唔會講呢

樣嘢。

問：即係你純粹知道就係話唔應該用含鉛嘅嘢，但係你--其實當時你自己有冇考究過點解唔應該含鉛呢？

答：冇考究過嘅，因為佢一路個經驗帶落嚟，我未入建造業訓練局教書之前，我喺出面都做咗十幾年嘅，嗰個時間我哋見到佢哋不鏽會上啲sample board，上啲物料各樣嘢，佢上嗰啲錫線落去都係寫住係「無鉛」嘅，所以我認知到佢無鉛係應該--鉛可能係對個系統飲落肚有影響。

問：即係呢個就係你...

答：但係有啲乜嘢影響，飲咗落去會唔會四肢無力吖，定係話對個血有事吖，定點，我就完全冇呢個醫學常識。

問：即係你上堂就冇教過你嘅，你係自己推論一定係對身體唔好，對邊部分唔好就唔知？

答：係。

問：但係總之就係唔好嘅嘢。

主席：知道係對身體唔好？

答：係，因為始終...

主席：不過就點樣樣對身體唔好就唔知？

答：係。

問：亦都唔係特別教嘅，不過你自己用常理推論出嚟嘅，對嘛？

答：係喇。

問：但係你知唔知道其實唔可以用一啲含鉛嘅焊料係即係有合約標準或者有法例去規定嘅呢？有英國標準咁規定嘅呢？

答：據我所認知，我哋學師嗰個時間師傅有講過嘅。

問：即係有例規定唔得嘅？

答：有講過有啲標準入面有寫明，但係邊一個標準，師傅就冇好刻意去講。

問：而你哋實際上落手落腳做，亦都唔會咁刁鑽走去考究究竟係法例定係合約，總之你哋一路嘅做法，你所講就係總之就係唔好用含鉛㗎喇，係咪咁解呢？

答：係。

主席：咁我想問一問，你喺教你啲學生嗰陣時候，你就話畀佢哋聽「一定要用無鉛㗎。」係咪？

答：係。

主席：你點樣樣可以話到畀佢哋聽「呢隻就係無鉛、呢隻就唔係無鉛嘅，睇 label 喇。」咁樣樣？

答：我哋都係即係買番嚟嗰卷係寫住係「無鉛」，我哋真係可以咁講，我哋買番嚟係無鉛就係無鉛，但係認證唔到嘅。

主席：我知，因為你嗰啲學生程度唔知㗎嘛，有啲可能係讀完中學，有啲可能係啱啱喺內地嚟，係咪？

答：唔。

主席：即係英文程度有限，好參差，你點樣樣話到畀佢哋聽「你哋要用無鉛。」你同佢哋講番用無鉛，你都要話畀佢哋聽點樣先至係無鉛㗎？

答：當時我哋教係有兩種嘅喺度，一卷就係嗰啲錫線，嗰度已經寫明係無鉛，另外仲有一種就係錫條。

主席：我知，唔係，咪住先，我知，你知，因為上高寫住"lead-free"，啱唔啱？

答：啱。

主席：好喇，而家我求其喺街度搵一個人出嚟，佢未必知㗎喎，你點樣樣

可以話到畀--即係你點樣可以將呢個訊息傳遞到畀你啲學生呢？

答：我其實主要個灌輸個訊息畀佢，就係話畀佢聽含鉛嘅一啲物料唔可以做喺供水系統裏面，主要個 main point 喺呢度啫，我哋係冇即係話好刻意去--現有個環境裏面就係得兩樣嘢，可以畀到學生真係親眼睇嘅，但係呢兩樣嘢或者你改變咗佢個形狀或者你撕咗個標貼黏咗喺第二度，去刻意去整蠱個學生，我哋就唔會咁樣做。

主席：因為其實--即係我睇番嗰啲供應商嗰啲咁嘅 brochures，其實錫--即係有鉛無鉛都好，其實嗰啲物料係可以唔同嘅 shapes and size，係咪？

答：我明你...

主席：可以一嚿嚿，可以成個金磚咁樣樣都得㗎。

答：我明主席嘅意思，即係話喺內地我買隻錶，你鍾意 Nike，等一陣間，五分鐘即刻變 Nike，你要 Adidas，五分鐘即刻變 Adidas，我明你嘅意思嘅，但係以我哋一個工人個角度，就算我哋做到師傅做咁多年，我哋都能夠分辨到一個鉛--如果你真係改變個形狀，改到好似個卷咁樣，而又將一個 label 咁刻意去黏落去隱瞞...

主席：唔係，我哋唔好講假嗰啲先，我哋講真嗰啲先，你唔好當佢有假，因為可能太平嗰啲，唔值得去做假。真嘅，你點樣樣傳遞個訊息畀個學生聽「你要用呢隻，就唔好用呢隻，lead-free」，我唔知喇，「呢度寫住，呢個就係"lead"，後面就"free"，嗰啲就紅色有個 label 寫住「有鉛」，"contain lead"。」，你點話到畀佢哋聽先得㗎？

答：我淨係用嗰個--而家現有--頭先我所講，講多次，就係嗰個錫條，嗰個錫條嘅形狀，呢隻係有鉛，錫線係無鉛嘅，呢隻，我講得到呢樣嘢，即係如果你改變咗形狀，我唔會...

主席：我明，我明。

答:...我唔會憑空想像到第二日啲人會改變形狀，搣 label 黏落去做假。

主席：唔好講嗰啲搣 label。

答：我哋唔會教到學生呢樣嘢。

問：唔好講做假喇。

主席：唔好講嗰啲，唔好講做假。

問：就算正正經經攞嚟，即係你唔會排除有一啲唔含鉛嘅焊料，係一條條直嚟嘅，有可能㗎嘛，如果聽你咁講？

答：係呀。

問：咁啱你用開嗰啲一卷啫，如果聽到你咁講，其實有可能係有啲直條嘅、唔含鉛嘅焊料㗎喎？

答：當其時教嗰陣時，我哋個年代就未有光譜儀，亦都未有 3M 嗰時鉛棒咁快速，所以我哋係冇--唔可能會教得到呢啲嘢。

問：即係可唔可以咁講，就係你哋教嘅焦點就真係唔係教佢辨認，你教嘅焦點就係教佢哋一個知識？

答：係呀，灌輸佢入咗腦。

問：佢去到，老闆畀咩嘢佢，佢就惟有即係講個信字喇真係？

答：係喇，主要係灌輸個知識，話畀佢聽鉛係喺個食水系統裏面唔可以用落去，對人體係有影響嘅。

黎先生：但係事實上用起上嚟嗰陣時，係分別到嘅？你應用起上嚟嗰陣時，個熔點大家好大分別㗎嘛？

答：用起上嚟，如果你技術高係認到嘅，我哋如果技術睇得到，佢做落去，佢有黏力嘅，有鉛嗰隻。

主席：有咩嘢話？有咩嘢？

答：有少少黏力，個附著力嘅，如果係純錫，100 個 per cent 無鉛嗰隻，佢熔解起上嚟好似水咁樣流得好快。

主席：再講多次，唔該。

答：如果係一個無鉛嘅錫線，當你熔解--同一支火槍嘅熱力熔佢嗰個時間，佢會好似水狀咁流得好快，如果相對有一啲含鉛嘅一啲物料，佢燒起上嚟，佢係好似一嚿嚿咁嘅，有啲黏力嘅，好容易做成一個形狀。

問：即係杰啲，可以咁講，係咪可以叫做杰啲？

答：係，可以咁講，係，冇錯，塑造一個形狀落去撻住嗰道口。

問：但係不含鉛嗰啲燒熔之後就係稀啲，即係流得快啲？

答：稀啲，好快咁流走，好難塑造到個形狀出嚟嘅。

黎先生：但係佢兩個熔點都唔同嘅，有啲佢要比較高溫，然後先熔嘅？

答：呢個熔點就我冇真正去考究過佢幾多度先熔，即係我哋--如果我哋係做咗好多年嘅師傅，其實你揸起上嚟燒，係有時有感覺嘅。

問：因為我哋聽好多人講，都係話含鉛嗰隻就容易啲燒熔嘅，熔點係比較低嘅。

答：呢個我冇考究過。

問：你冇考究過？

答：係喇。

問：即係你嘅認知，實際上用起上嚟嘅分別反而唔係在個熔點，而係在於...

答：我係睇佢個形態，熔咗出嚟個--...

問：...熔咗之後嘅形態？

答：係喇，杰啲同埋稀啲。

問：你覺得杰啲同稀啲，邊樣好啲，用起上嚟？唔好講佢有冇含鉛，方便或者好唔好，你覺得邊樣好啲？

答：兩樣對我嚟計都冇影響，靠呢個技術上面。

問：因為我哋就聽到有啲師傅講，就係有啲--即係有可能就係含鉛嗰啲焊料就因為容易啲燒熔，因為熔點低啲，咁可以快手燒完，因為容易熔，容易熔嘅話，就快快手手可以焊完，即係呢個蹋--不含鉛嗰隻就要燒耐啲嘅，因為熔點高啲嘅，可能好多師傅覺得係即係麻煩...

答：我冇去深究過呢個問題，個時間性都好快嘅咋，其實燒嗰道口個時間。

問：但係即係話雖然--但係你頭先所講嗰個特性，即係所謂熔咗之後一個比較杰啲，一個比較...

答：稀啲。

問：...流動性高啲，即係稀啲，呢一樣嘢你就上堂冇教嘅？

答：吓？

問：你上堂唔會教到嘅？即係你上堂冇提呢樣嘢嘅？

答：冇嘅，呢個係一個--即係我哋燒咗好多年，然後先會感覺得到呢樣嘢，喺教學個過程裏面，我哋冇同學生講到呢樣嘢。

問：好，可唔可以咁講，就係你教咗佢純粹就係一個知識，佢得到咗呢個知識，唔應該用含鉛嘅焊料嚟到做食水，佢點樣去運用、佢點樣去應用就真係佢各自自己即係做人嘅判斷，...

答：同埋佢第二日出到...

問：...佢第二時做到採購嗰個，佢有--即係佢識嘢嘅，佢就會寫話「唔該畀無鉛嘅我。」佢打...

答：同埋一樣嘢-- sorry，唔好意思，打斷你。

問：請講。

答：同埋好似學生出到嚟做嘢，喺個社會上面，佢搵到一份工，好好彩喇已經，老細畀到乜嘢佢燒，佢有時都好難抗拒，我講真實話，即係如果你身為一個學生，你搵到份工之後，你話呢樣、話嗰樣，個老細可

能叫你第二日唔使返㗎喇。

問：係喇，即係我話你--佢都未必真係走去考究「咪住，你係咪唔含鉛嘅先？我唔做呀。」咁，...

答：係，冇錯。

問：...即係佢未必會做--未必會咁樣，個學生出到嚟。就算佢用咗嗰樣嘢之後覺得「我經驗話畀我聽咁易--即係稀爛爛嘅」，或者咁杰嘅，可能「我經驗話畀我聽其實可能係含鉛嘅。」佢可能會覺得「我做到咩嘢啫？」可能都無奈地都要繼續用，係咪有啲咁嘅情況，有陣時會？你嘅認知。

答：未聽過學員反映返嚟。

問：但係即係你頭先所講，就係啲學員出到嚟，老闆畀乜都要用㗎喇，有陣時？

答：即係個環境因素，被逼係咁樣，即係如果打份工。

問：但係你就教學就真係冇教到咁仔細，即係道德取捨，「如果個老闆畀啲含鉛嘅，你點。」就冇教到咁仔細㗎喇，你淨係教個知識，就唔應該用含鉛？

答：我哋畀佢個知識，灌輸咗佢，就係話第二日如果佢真係做老闆，佢要買一啲無鉛嘅，或者佢可以選擇嗰時，選擇一啲無鉛嘅去買咁囉。

問：各種唔同嘅接合方法，頭先睇嗰啲，我想你講一講第二種，第二種即係嗰個壓嗰個。

答：卡壓式，有支槍嘅。

問：卡壓式？

答：係。

問：佢純粹係靠即係力學咁樣將一樣嘢壓到好實咁樣嘅咋，係咪呀？

答：其實入面佢仲有一個 O ring，有一個膠圈喺入面嘅，咁呢一隻配件係源自歐洲，都用咗好多年，但係香港比較上係近年先開始打入香港，但係礙於嗰個價錢比較上貴，同埋佢支槍比較貴，嗰支槍要20,000 釘過外嘅，同埋佢 count 住，你用到超過某個次數之後，佢

支槍就會失效，...

問：就要換㗎喇？

答：...自動停嘅，就要返番原廠...

問：自動停嘅？

答：係呀，返原廠再 cal.過，所以就喺市場上可能都未夠普遍。

問：因為我即係純粹以所謂我哋完整啲嘅認知，就係我哋聽啲工人講，即係你要接合呢啲喉管，就係一係就用錫曲，裏面已經有錫焊嗰啲，一係就用 soldering，直情係用錫條或者錫線，一係就我哋叫揸瓦嗰啲叫做，即係...

答：壓接。

問：即係第一種，頭先所講第一種？

答：係，第一種。

問：即係你接埋咗之後，就擰擰擰擰擰咁樣，係叫做。

答：另外仲有一啲焊接方法嘅，就係用風煤做一個銀焊接駁，同埋一啲叫做銅焊接駁都得。

問：得，但係純粹以接駁嘅效果嚟講，你頭先所講嘅種種，即係用卡壓式又好，你話用銀焊又好，你話用錫焊又好，或者你用第一種，頭先你個片裏面第一種也好，邊一種個效果會好啲呢？定係其實樣樣都你只要做得好就好嘅呢？

答：其實樣樣都有佢嘅優勝之處，如果--每一樣有佢嘅缺點同埋優勝嘅，例如我講第一隻，第一隻佢需要用個架生，佢要收...

問：揸瓦，我成日都會--係，叫...

答：嗰個叫壓接式。

問：壓接式。

答：佢需要搵嘢卡實咗個配件，然後先扭嘅，如果有一啲空間就話唔係咁方便用一啲架生去旋轉，會撞到個牆角，就相對走錫嗰啲配件就會方

便。

問：因為唔使揦住個嘢擰，係咪呀？

答：但係佢亦都有佢嘅好處嘅，就係話佢唔需要有松香膏，唔需要有錫喺入面，喺洗喉個過程，即係成個喉管做完晒，水務署都需要洗喉，個過程裏面唔會有太多雜質喺入面，呢個就係嗰個壓接嗰個問題。但係走錫嚟計，相對佢就只係話佢做完晒所有，省呀，落松香膏，插咗落去，佢埋到個死角個位置，我只要嗰支燈個熱力度，佢就能夠完成嗰個工程。

問：因為方便，幼細吖嘛。

答：佢又唔需要發力，咁...

問：因為佢幼吖嘛，係咪呀？嗰個。

答：係。同埋過往--講番我自己經歷，就我曾經做過一啲政府樓，啲高級公務員宿舍，嗰陣時都係用一啲壓接式嘅銅喉，但係就會有一個問題，同走錫嘅相比，就係話如果我做喺個樓面裏面，喺落石屎之前要做好，之後再扣石屎，壓接嘅動作，你收緊咗之後，如果支震筆震落去條喉度，落石屎會落震筆，可能會令到嗰個模會鬆，個震動。

問：但係如果用焊料呢？

答：如果用焊料，就唔會，焊料一焊咗之後，佢有個特性，就係話你就算攞錘仔撳佢，佢都會一齊跟住佢變形，未曾一定會流水。

問：因為佢已經成為咗--熔為一體，咁講？

答：係喇--唔係，又唔可以講熔埋一體嘅，即係中間有個界質，啲錫將兩樣嘢黏實咗。

問：好，好，好，明白。

答：同埋以大家用嘅工具唔同，以地盤嚟計，而家好多時係用錫焊嘅，因為佢可以有石油氣燈，方便啲，但係如果一個維修嘅工人，佢淨係喺住家裏面做少少維修，佢唔可能會帶支石油氣燈，買一啲嘢，佢可能就兩把士巴拿，自己買個壓接配件就搞掂，佢唔同嘅...

問：呢個就係維修嘅方便與否，呢個就係？

答：係喇，方便與否，同埋佢會唔會畀人破壞到嘅問題。

問：我想問多你最後一個問題，銀焊，我哋頭先有聽過--即係之前都有人講，就係銀焊就會貴啲喇？

答：銀焊做個工序上，要求嗰樣嘢係高技術啲。

問：因為高技術啲，同埋銀焊本身啲料都貴啲嘅？

答：銀焊啲料--調轉講嘅，銀焊嘅曲同一個錫嘅曲，銀焊個曲平嘅，因為佢唔需要喺工廠加工做嗰條坑，唔需要落啲錫入去個配件度，佢相對平嘅，但係相對佢嘅人工就要貴啲。

問：因為爛整啲，同埋要燒耐啲？

答：佢同埋要燒個技術，佢要用風煤，一支風煤，風煤我哋叫乙炔氧，嗰個時間要帶到支風煤去到嗰個位置燒，燒嗰個工人仲要有一啲氣焊嗰個牌，先至能夠燒嘅。相對燒錫焊就唔使嘅。

黎先生：點解技術高少少？點解技術高啲，你可唔可以解釋下？

答：佢因為要燒風煤，佢有啲...

黎先生：燒風煤就技術高...

答：有啲工人係連點風煤都未識嘅，調校個火焰都未識嘅，好多工人係會咁嘅，對於一個風煤，佢哋係一個有少少抗拒嘅，但係對一支石油氣燈就簡單，就一個火機喺前面一點，就已經可以...

問：即係頭先睇用嗰個--頭先睇你哋示範，你搵個嘢，搵個火機喺前面點嗰個就係石油氣，係咪呀？

答：嗰個石油氣，同埋佢輕便啲，比較上，你見佢係好細嚟嘅嗰啲，你帶去唔同嘅位置，擒到上去天花頂做又得，如果你話我要用一支風煤，我要嚟到呢個現場，搬到對風煤，同埋要一對喉嚨住，上到上面嚟燒，嗰個工序同埋個技術都係要高啲。同埋有法例管制。

問：用風煤。

答：因為風煤喺一個場所裏面唔可以超過有兩對，如果你同一時間有好多人開工，咁就唔得嘅。

問：同埋我哋有聽過，又係，即係最後一個問題，成日講最後，就係銀焊，我哋聽見有人講係唔可以用喺一啲直徑太過細嘅喉管嘅，你有冇聽過呢個說法？

答：我冇聽過，但係我知道...

問：銀焊，主要有人話係用嚟做一啲比較粗啲嘅喉管，有冇聽過？

答：唔係嘅，喺我哋接觸到出面嘅地盤其實有好多--有啲地盤係靚啲嘅樓，例如嗰啲酒店，佢好細嘅喉都係用風煤，燒銀焊嘅，佢成個地盤嘅銅喉接駁都係燒銀焊嘅，無論大喉細喉，但係當然個成...

問：我哋聽好多私人樓都係咁做㗎嘛，聽講。

答：私人樓都係㗎，有啲私人樓係貴價啲啲私人樓，就會用呢啲方法，同埋...

問：點解呢？點解貴價啲嘅私人樓會選擇用銀焊，有咩嘢咁好呢？

答：因為其一，就係話關於我哋個供水系統裏面，我哋有分凍水同熱水，如果熱水，你行喺一啲貴價樓，佢係用一啲中央熱水系統，或者係一啲酒店、醫院，佢行中央熱水系統嗰啲水嘅溫度往往係超過 100 度，隨時，所以佢如果用錫焊，佢加埋內在嘅壓力，水喉入面，水有水壓，加埋佢個溫度，如果你用錫焊，個技術又做得唔好嘅，嗰道口隨時就會因為咁樣而漏水或者爆裂。

我亦都聽過一啲工友講，就話喺某個屋苑，私人屋苑，因為試過藏咗喺牆身入面嘅喉--係佢用錫焊嘅嗰陣時，因為做得技術唔好，試水嗰刻間係用凍水去試嘅啫，但係當佢交完樓，冇漏㗎喎凍水，但係去到行熱水嗰一刻間，就開始漏水，所有都全部要鑿番晒出嚟再做過。所以汲取呢個教訓，有啲發展商就不如用貴少少嘅銀焊，可能唔相差得好多。

問：就保險啲，你入咗牆就唔使一定要拆開做過，就好...

答：同埋一個信心嘅標誌，同埋一個，即係你知嗰個口碑好緊要，如果你買咗層樓，成日個發展商嚟鑿你嗰層樓嘅，可能個口碑都會好差，咁所以就會導致咗有啲發展商會用貴少少嘅銀焊。

問：我哋亦都有聽見有啲師傅講，就係用含鉛嘅焊料就係要嚟做一啲幼啲，就係要嚟做一啲直徑幼身啲嘅管，不含鉛嘅焊料就係要嚟做啲直徑可能粗身少少嘅管，有冇聽過呢樣嘢？

答：我冇聽過。

問：即係用直徑粗幼嚟決定用含鉛定唔含鉛，你冇聽過呢樣嘢？

答：冇聽過。

石先生：主席，我應該就冇第二啲問題問，但係就而家係咪都係四點半，我打算可能今晚我返去--除非第二啲律師冇問題問，我就...

主席：即係你想返去再諗諗先？

石先生：係，冇錯。

主席：好，咁我哋聽日繼續，有冇人有問題其實？

周小姐：我會有少少覆問。

主席：有人有問題嘅，得。

石先生：有。

主席：我哋聽日再繼續。

石先生：好。

主席：麻煩你可唔可以聽日--李先生，聽朝早早上10點鐘再返嚟？

答：可以嘅，主席。

主席：好，唔該晒。我哋今日就暫時休庭。

2016年1月26日

下午 4 時 27 分聆訊押後

Tuesday, 26 January 2016

(10.02 am)

(Transcript of simultaneous interpretation except where otherwise specified)

MR SHIEH: Chairman, the first witness today is Mr Christopher To.

My understanding is that Ms Monica Chow represents CIC, so Ms Chow will lead the evidence-in-chief.

MS CHOW: (In English) Thank you.

(Via interpreter) Chairman and members, I represent the CIC, and the CIC's two witnesses today, Mr Christopher To Wing and Mr Li Cheung On. We will first call Mr Christopher To.

MR CHRISTOPHER TO WING (affirmed)

Examination-in-chief by MS CHOW

MS CHOW: The witness statement of Mr Christopher To is in bundle X1, pages 5 to 10.

(In English) Mr To, you wish to use English?

A. Chinese will do.

Q. Mr To, on 14 December 2015, you prepared a witness statement in English?

A. Right.

Q. I am going to read out your witness statement:

(Statement read in English)

Mr To, the evidence I read just now, at the end of

the witness statement there's a signature; is that your signature?

A. It is my signature.

Q. Just now, the statement that I read, could you confirm the contents?

A. Yes. It's true.

Q. Is there anything that you wish to amend or supplement?

A. No.

Q. Do you wish to submit this as your evidence?

A. Yes.

Q. I have some questions. I would like to direct you to the training courses. Have you taught students to differentiate between leaded and lead-free solder?

A. I did not personally teach these courses, but I did ask all my colleagues and they all told me that they did teach that.

MS CHOW: I have no other questions.

Cross-examination by MR SHIEH

MR SHIEH: Mr To, good morning.

First of all --

INTERPRETER: Speaker is not speaking directly into the microphone.

MR SHIEH: You are a barrister?

A. Not yet. I have completed all my courses but I'm not registered.

Q. You have a legal background. Could you give us a summary of your legal background?

A. I have an LLB, LLM, MA, PCLL, and I am teaching legal courses at three institutes.

Q. Previously, you were at the HKIAC, you were the Secretary General there, so from 2008 you started work at the CIC as executive director. First of all, you are the spokesperson for the CIC in this Commission, so first of all I would like you to help us understand -- in Hong Kong we have semi-skilled labourers and skilled labourers and provisional labourers, so I would like you to help us understand the division of labour, the background.

I would like to refer you to A2, tab 33. Here, we have the Construction Workers Registration Ordinance. So when we talk about the skilled workers, semi-skilled workers, this is the legal background for that?

A. Yes.

Q. So, as executive director of the CIC, you should have some understanding of the legal background as well, so you can help us?

A. Yes.

Q. That might be obvious to you, but let's look at page 939. Clause 38, it says, "Register of Construction Workers". So that is in effect?

A. Yes.

Q. So, to put it simply, this Ordinance has gone through many amendments. At least this section, 38, is in effect?

A. Yes.

Q. Some had gone through the Legislative Council but have not been enacted, but this has been enacted.

So in a previous amendment, there were similar arrangements, we had semi-skilled, skilled registration for quite a while. So, previously, in 2005-07, we had even earlier versions of this clause, referring to a registration regime?

A. Yes.

Q. So you see, in subsection (e), we have the registration -- well, it includes a designated trade division, and we have registered skill workers, and we also have a bracket "(provisional)" workers, we have "registered semi-skilled worker" and "registered semi-skilled worker (provisional)". We have four types. We won't talk about the registered general worker; that's just a regular worker.

So in our Commission, we are talking about plumbing works, so that's a special skill, so that should include (i) to (iv) but not (v). That has listed four types of workers, and if you look at section 40, "Qualifications

for registration", that is also in effect. That's legal notice 14/2015. We have qualification requirements and the previous versions of all that requirement have been listed?

A. Correct.

Q. So regarding skilled workers and semi-skilled workers' qualifications, you can refer to subsection (2). That says under what circumstances the registrar must register a skilled worker. There are four conditions, (a), (b), (c), (d). We won't talk about irrelevant parts. Schedule 1 is relevant to the CIC, so in schedule 1, that's on page 964, it refers to a column. Let's take a look at page 963. To the left we see "Plumber", item (19), and if you look at the fourth column and then the third column, it describes the work. In another column, it says, "(In English) Any one of items (a), (b) and (c) -- trade test certificate for plumber issued by CITA or Council". So that is relevant to the CIC. It refers to the CIC or CITA.

Then we have items (b) and (c). We have apprentices. In (c), it says you need to have a plumber's licence. So if you are a licensed plumber, you can become a skilled worker.

So is it difficult to get a licensed plumber qualification?

A. You can get a skilled worker licence and you can become a licensed plumber.

Q. I understand. But if you have sufficient experience to be a licensed plumber, then you should be able to be a plumber.

So, taking a look at the right, it refers to semi-skilled workers. We have an intermediate trade test certificate for plumber issued by CITA or Council. So that lists -- that's what you said in your witness statement. When you take a trade test, you can become a skilled worker; if you take an intermediate test, you become a semi-skilled worker.

A. Yes.

Q. Another item, it says "provisional". So let's take a look. In paragraph 13 of your witness statement, you say one course by the CIC is for those people holding a provisional skilled licence, so they can upgrade themselves to get a proper skilled licence, which is described in paragraph 13 of your statement.

So the legal authority for that, how you can become a skilled worker, you have to take the trade test certificate. And the CIC can also help a person become a skilled worker, if you look at page 940, section 40, subsection (2). So what kind of people can become skilled workers? If you look at (2)(c), it says:

"(In English) Holds a certificate referred to in section 41(1)(b) --

(i) in respect of a training course that the council specifies under section 41(1) in relation to the registered skilled workers (provisional) for the trade division."

So the council has the authority to designate a certain training course. After you take the course you can upgrade from provisional to skilled worker.

A. (Nodded head).

Q. So that is your witness statement, paragraph 13.

A. Correct.

Q. So, basically, CIC helps construction workers grade themselves or help them become qualified as skilled workers. This is a trade test, there is an intermediate trade test. Another alternative is the test mentioned in paragraph 13 of your witness statement; that is, to apply from the status of a provisional registered skilled worker.

We understand that sometimes, after amendment of legislation, the previous version would be repealed. So, if we look at page 924, section 3:

"(In English) (1) A person shall not personally carry out on a construction site construction work unless the person is a registered construction worker."

So this is just normal. So unless you are a registered worker, you are not allowed to work on a construction site. Then in italics, subsection (2), more details: unless you are a skilled worker, you are not allowed to engage in the work required to be done by a skilled worker. Also, the same applies to a registered semi-skilled worker, subsection (3). But it's in longer in operation -- it is not yet in operation. But it doesn't mean that there is a vacuum here because in the previous version there should be a similar provision.

A. Previously, there isn't a clear, explicit provision, and now we have the dedicated trade, and all the workers are required to be registered. So this provision has to do with registration of workers.

Q. So you mean before this version there wasn't a clear provision?

A. There was a clear provision but not yet effective.

Q. So there is this provision but not yet in operation?

A. Right, because in the construction industry, there is a manpower shortage. We need to have a transitional period. And after the transitional period, we will make it a compulsory requirement.

Q. In other words, a person that registers is this. There is this system, mechanism, of trade test for skilled

workers, but there is a legal backing ready?

A. But workers may sometimes wish to register as general workers rather than semi-skilled or skilled workers, because it's easier for them to work on the site.

Q. So let's say there is a personal legal consequence, if I am not a registered skilled worker and I engaged in work required to be done by that worker?

A. Well, there is legal consequence, because as I said just now in my witness statement, I mentioned that if the trade, say if the WSD requires the work to be carried out by a licensed plumber.

Q. Right, but that applies to licensed plumber, not to skilled or semi-skilled workers?

A. Right.

Q. And also sometimes there will be a contractual requirement that there should be a certain percentage of skilled or semi-skilled workers, and registration would be useful here. But at present there is no effective provision in operation prohibiting somebody who is not a skilled or semi-skilled worker to engage in that sort of work.

Because if we turn to page 925, "(In English) Offences in relation to prohibitions under sections 3 and 5", and then:

"(In English) A person who contravenes section 3(1),

(2), (3) or (4) commits an offence ..."

However, it says subsections (1), (2), (3), (4) but subsections (2), (3) and (4) are not yet in operation.

A. But we have a transitional period which will end in the middle of this year, and after this transition period, if you do not have the registration, you will commit an offence.

Q. Let's go back to your witness statement. You refer to some courses. Paragraph 8, (a), (b), (c), (d) are the four courses offered by the CIC. If I understand your statement correctly, these four courses -- that is, a candidate may take one of these four courses in order to take a trade test?

A. Right, but it depends on the level of the candidate.

Q. What do you mean?

A. For example, for a 90-day full-time course, under (b), sometimes the candidates may already be general workers who have some experience already. It may not be necessary for a one-year or two-year course, because those courses are actually for candidates aged around 16.

Q. Because I would like to ask you this question. If I want to take an intermediate trade test, sometimes these courses may last for a year. So who would be permitted to take the intermediate trade test would

depend on the relevant experience.

A. Right.

Q. So it is not the case that everybody can go for the shortest course, the 90-day one, in order to take a short-cut.

A. Yes.

Q. So you would consider the qualifications and experience of the candidates, and the candidate will need to take one of the four courses to take the intermediate trade test?

A. No, the candidates can take a trade test without taking these courses but very often, they will fail.

COMMISSIONER LAI: For 8(a), basically for someone who has no background at all, who has no knowledge --

A. Yes, who hasn't worked on a construction site.

COMMISSIONER LAI: -- will take this course. For other courses, they are for candidates --

A. With some sort of experience. But not at the level of a semi-skilled worker; only at the level of a general worker.

MR SHIEH: So the duration of courses may be shorter?

A. Yes. We had so many courses because at that time there was a manpower shortage. At first, there was a one-year course and we changed it to be a two-year course as we wanted to be more comprehensive. Then it was said for

a two-year course, nobody would take it because it would be too long, and then it was reverted back to one year. So we adjusted according to the market situation.

Q. Basically, shorter courses were there in response to candidates who have had some experience and they only required some top-up knowledge.

A. (Nodded head).

Q. What about 8(e) and (f), these courses are for skilled workers, trade test?

A. Yes.

Q. So either of the two?

A. Yes.

Q. Again, 18 months and 90-hour. So not all candidates can go for the shorter course? It depends on the qualification; right?

A. For example, after 8(a), because the candidate after taking a one-year course may not have worked on the site, so the candidate can then take an 8(e) course.

Q. So if you have no prior experience at all, then the requirement is that you would need to take a full course, but if you have had some experience, then you may go for 8(f) instead of 8(e). But one would need an intermediate certificate before taking (e) or (f); right?

A. Not necessarily. Some candidates may have had many

years of experience on a construction site, so they could just immediately take this test, but the passing rate is not very high.

Q. So the requirement is that 8(e) or (f) may not be mandatory? One could immediately take the test for skilled workers. But then intermediate trade test would be required for 8(e) and (f)?

A. We are considering that after scoring certain marks in 8(e) and (f), even before passing the test, we may give the intermediate or skilled worker licence to these candidates.

Q. So, if the candidates obtain certain marks, you are considering whether, instead of outright fail, you would give them the qualification of semi-skilled workers?

A. Right, because the test is stringent and we often receive complaints that the candidates need to take the test several times before obtaining the qualification. So we need to be the gatekeeper very carefully. So sometimes, if the candidate fails a number of times, we may ask the candidate to apply for a semi-skilled worker qualification instead, or ask the candidate to retake the exam.

Q. So, in other words, it depends on whether it is a bad fail?

A. Yes.

Q. Well, the whole course would be considered, for somebody who really scored very low marks.

A. No. (Chinese spoken).

Q. That means the goal is that one would not lose everything if one fails.

Then the third part, from provisional to formal registered skilled worker. Then in paragraph 15 you talked about CITB, Construction Industry Training Board. That is, there is this panel, CAP, the Course Advisory Panel on plumbing and pipefitting, which made recommendations on the core syllabuses, and the CITB endorsed the curriculum.

Can you explain which went first, the CAP or CITB?

A. Before 1999, CAP hadn't been set up, and very often instructors and colleagues would basically develop courses.

At the time, there were a lot of complaints saying that the courses were out of touch with the market situation and the courses were not really suitable for the market. That is why we had the CAP, to assess the market situation, and how the instruction should be given.

Q. So CAP isn't a statutory organisation?

A. No. It's a committee or a Task Force under CITB.

Q. So CITB is a statutory body?

A. Yes, under CIC.

Q. In other words, CITB set up CAP as a think-tank for course curricula, so as to understand the market situation and employers' requests?

A. (Nodded head).

Q. All right. Then paragraph 16:

"Since about 2013, the 'employer category' was added to ... CAP [Course Advisory Panel on plumbing and pipefitting] by CITB."

So before 2013, for CAP representatives, there was no representative of employers; right?

A. The answer is partially yes and no. Let me explain. For employers, we can say that the main contractor can be an employer, but according to the CICO's definition, that is the Construction Industry Council Ordinance, the definition of "employer" is genuine employers such as the government or statutory organisations, such as MTRCL and developers. We review it annually. All the task forces, committees, we check whether it is representative enough, and I was also participating in the review. For example, for the Water Supplies Department, many candidates upon graduation worked in the Water Supplies Department, and then it was found to be not being representative, the CAP, and gradually the employer representative of WSD was put there.

Q. So it's technical? For main contractor bosses, so to speak, of course they would be represented in CAP, but for the "employer" category, all along there wasn't any representative, and in 2013 it was added? For the "employer", as you explain, it comprises a wide scope, then the WSD was recommended as the employer representative?

A. In fact, apart from the WSD, we have HA and other bodies, because we discovered our students worked in the WSD, so we felt we needed a representative from the WSD on CAP.

Q. But they have to rotate?

A. Yes. They have a term, and then another department that would --

Q. (Chinese spoken).

A. Yes, any public body, such as the Airport Authority or even a real estate developer.

Q. I would now like to take a look at the print-out of the DVD. There are four bundles, and we have a lot of 2001 and 2003 versions. It's the same version but coming out in different years. I will take a look at this material.

For example, in X1, page 19, this is from 2002 to 2004. This is a two-year basic curriculum. So, in your witness statement, those categories, they are based on

this material.

So, to use this example, 2002 to 2004, a two-year programme, that is equivalent to paragraph 8(a), "(In English) One-year full-time basic craft training course -- pipefitting and plumbing", changed from a one-year course to a two-year course. So this is 8(a). It mentions solder material and some basic skills. Pages 71 and 72. It talks about solder.

So you joined in 2008. So, after joining CIC, did you review the syllabus, or were you tasked more on a macro level?

A. I wasn't responsible for the syllabus. We have some 600 staff and I have a director of training and development, and he's been in the post for two years, but he is on sick leave now. We have CAP. So, if I were to look into this, I wouldn't have time to do other work. We have to rely on CAP, and at CAP, they represent the industry, they will provide a lot of input.

Q. So all of this syllabi, this is not in your day-to-day work, you had to dig out all this material. Then you might be reading this for the first time. If we look at solder, we see we have different types of solder, and then in the second paragraph we have components, copper rings that contain solder. Have you heard of this? When you join two pipes, sometimes we have an elbow

joint, something that connects the two pipes, and that connection, they call it an elbow, and it already contains built-in solder material; have you heard of this?

A. The first time I heard of that was not here. It was during a job, after the Inquiry was established, a lawyer had wanted to visit our workshops to see and at the time an instructor, you can ask him, Mr Li, he had showed us how it works. It's not just one instructor, I had viewed the process three times and they had explained on the different occasions.

Q. So to put it simply, your day-to-day work does not involve looking at the syllabi and your knowledge of solder material, it was in preparation for the Commission, after the excess lead in water incident occurred. I will read it out to you anyway.

When you join the joints, you have to clean the joint areas, you have to apply flux, and then you insert the elbow joint. You have to inspect the sizes and the direction, and then you need to apply heat to the joint and you need to grasp the temperature. If the temperature is not high enough, then the solder cannot melt, and therefore it cannot connect the joint. But if it's too hot, then the solder ring -- the solder would leak out and it also would not lead to a proper joint,

and that would lead to leaking water. Under certain circumstances, you need to apply extra solder to prevent leaking of the solder.

Let's take a look at page 72. It refers to the different types of tubes and pipes. We have copper tubes later on. So, with copper tubes, sometimes you can use a direct current arc welding strip. But the joint is not very ideal. It's best to use an oxyacetylene torch.

So, when you read the last paragraph, sometimes copper tubes would also have to be joined by solder strips, and sometimes the elbow would have built-in solder, and applying an even heat would connect the joint.

So, prior to the excess lead in water incident, were you familiar with the term "solder strip"?

A. Yes. My first degree was in electronics. But I didn't know much about tubes, copper tubes and water supply tubes. When you do electronics, we do use solder strip.

Q. But the solder strip, it is not this kind of soldering material?

A. No.

Q. So, in terms of solder, you have no knowledge of solder strip?

A. No. It was only prior to this Inquiry that colleagues

started to show me.

Q. Mr Li, he is the hands-on person; he would know much more?

A. Yes.

Q. So I will not go into further detail of this area.

I will look at page 89 now. Page 108 of the bundle. At page 108, we have some common terms. To the right, we have "Solder, tinman", so that's part of your syllabi and the material they teach.

So this document, can you say it's quite comprehensive? The instructors at different points would give demonstrations or give verbal instructions? So this is the syllabus; this is not the course material?

A. The instructors did tell me that they would show students what is leaded solder and what is lead-free solder. But whether it's detailed, that might not be the case. They would just say, "This has lead, this is lead-free". They might say why it contains lead and why the other one does not contain lead.

Q. We can follow up with Mr Li, so I won't go through it year by year. It's the same every year, although in 2015 there have been some changes.

If you look at bundle X3, page 1989. Let's look at page 1988. This is the 2015 to 2016 one-year basic

course for the intermediate skilled licence.

2015-2016, you can look at page 1989, it was amended in August 2015. It was for -- what's "KBC"?

A. That's the Kowloon Bay Centre.

Q. Please take a look at page 2020. Under the heading "Solder welding", it's similar. If you take a look at page 2021, under certain circumstances you need to reapply solder, and we also have an instruction or a proof document that indicates that it is lead-free. Do you see that? Is it because of the excess lead in water incident that was added?

A. That's one reason. And we have received some two notifications from the WSD. It's not just us, they notified the whole of Hong Kong that we needed to pay attention, and previously our instructors would receive a circular from our director and add that to the curriculum.

Q. So you are saying the WSD had some notices? Let's take a look at page 2148. Are you referring to this notice?

A. Yes. Yes.

Q. It says that you cannot use leaded solder material, so you added that information.

So you can help us here. At page 2021, "The solder wire does not contain lead". Then they refer to lead-free solder wire. They are using the term "solder

wire" here. If you look at the end of the page, "Sometimes pipes are corrected by solder strips". So here we have a reference to solder wire and another reference to solder strip. Are you aware of the difference between the two terms?

A. I am not familiar.

Q. Who drafted this document?

A. We have senior managers. They would inspect the syllabi and they would talk with the instructors and superintendents and see what needs to be changed and updated. It is not just because of the WSD notice; every year they will amend the courses, they will update the courses, to follow market trends.

Q. So the person who wrote the material, will he be teaching the material, the courses; for example, Mr Li? The people teaching, will they just read out from this document, or do they have a blank cheque?

A. They are free to teach, but we require the course material to be written very clearly, because we have the CAP, the Course Advisory Panel, so every once in a while they will look at the course material.

Q. So this is the course material you are referring to?

A. Yes.

Q. As I said just now, that is the syllabus, but it's taught verbally. They might have detailed explanations

or some tricks they would share, demonstrations that cannot be written?

A. I cannot rule that out. The instructor might interpret the material.

Q. So there was no emphasis before 2015? So if they just read the course material, there was no mention of lead or lead-free?

A. Our instructors had talked to us, and they told us that before we amended the syllabus they had taught the lead-free concept.

Q. Even though there was an emphasis on using lead-free material, you are saying that the instructors had emphasised?

A. Well, when they teach plumbing, they know that people will consume the water and therefore it should be lead-free.

Q. Let's take a look at X4. Let's go back to X3 first, page 2193.

Let me show you the first page first, 2158. This is about the 90-day course. In paragraph 8(b) of your witness statement, you mentioned the 90-day adult course. This is the 90-day full-time adult short course.

If you look at page 2193, here there is a section on tools for soldering, and the soldering process is

carried out with the use of LPG torch, that is to heat the pipe to appropriate temperature, or to heat the tin coil at the joint of the copper pipes. So this explains the soldering process, and that is the 2001 version.

I am not going to go through the course content with you year by year, but in 2015 there is this change. Let's look at bundle X4. Sorry, please look at the previous bundle, page 2219 first, also from the 2002 90-day course.

On page 2219, at the bottom, it talks about soldering using tin. "Tin has a very low melting point" -- I think there is a typo here in relation to the Chinese term for "melting point". "Usually, using an LPG torch or another type of torch would be able to melt the tin. During the process, the joint should be cleansed first with gauze, Powerflux applied, and then the torch can be applied to heat the solder materials."

So this is about soldering in the context of the 90-day course. Again, no description of using lead-free solder wire. But your understanding is that the instructor would give this instruction.

Now let's turn to X4, page 2986. Page 2986 refers to the course in the year 2015-2016, again a 90-day course, and if we look at the corresponding paragraph, that's on page 3020. "Major tools for soldering"; this

part is the same as that in 2001.

But when you turn to page 3054, this part has changed. You can see 6.2.3, "Soldering of copper pipes and fittings":

"The melting point of tin is extremely low. Usually an LPG torch would be used."

Then the same description but one sentence added:

"For soldering material for jointing copper pipes, solder wire, which should be lead-free, there should be a lead-free certificate, should comply with the WSD standards. It can only be used after the WSD has given its approval."

Just to help you, this is page 3072, a circular from the WSD, circular 1/2015. So, after the incident happened, your colleagues updated the course content and added that sentence in relation to lead-free solder wire?

A. That's in the syllabus, right.

Q. So it's expressly added in the syllabus, but all along the instructor would tell the candidates?

A. In fact, I have talked to at least five instructors and they have told me that they would instruct candidates to use lead-free soldering materials.

CHAIRMAN: So what's the difference, according to the five instructors, because we have only one instructor as

a witness?

MR SHIEH: I am going to ask him, because if Mr To says he was not actually the one giving instructions, then he cannot tell for sure. I will follow up on the point why only lead-free material should be used.

But just a follow-up question, Mr To: do you have personal knowledge that soldering material should be lead-free?

A. Before the incident, I did not have this knowledge. Before the incident, I did not know that some soldering material could be extremely toxic. I did not pay attention to that. I mean, it is not the case that I didn't know; I just didn't pay attention to the fact that there would be such a huge impact.

Q. In the bundle, there are many other exhibits, basically illustrating the different courses mentioned in paragraph 8, but not all of them are related to the skilled or semi-skilled workers that we are looking into today, so I am not going to spend time on that.

No further questions.

Questioning by THE COMMISSIONERS

COMMISSIONER LAI: I have a question. In paragraph 14 of your witness statement, you said that CIC offers only courses to attain semi-skilled or skilled levels but does not offer any courses for qualification as

a licensed plumber. Any particular reason why? Is it a policy decision?

A. Because after undertaking the semi-skilled or skilled courses -- because for WSD, sometimes the requirement is that the worker should be a licensed plumber, so after taking semi-skilled or skilled courses, one would have to take another course offered by the VTC before one is qualified as a licensed plumber.

COMMISSIONER LAI: I understand that, but I don't understand why you do not offer courses.

A. Basically, we would be commissioned or nominated to offer courses. For semi-skilled or skilled, we have these courses nominated or commissioned, and for WSD's licensed plumber requirement, the WSD commissioned the VTC instead of the CIC.

COMMISSIONER LAI: So it's not that you can't offer these courses, but that you are not commissioned?

A. Because sometimes our colleagues have all the qualifications from semi-skilled to skilled and licensed plumber.

CHAIRMAN: A question. Mr Shieh, the counsel, walked you through that just now. Let's go to X3, page 2219. The heading is "Training course for plumbing installation or pipe installation for Housing Department projects." Why is it so specific that it's in relation to Housing

Department projects?

A. It's in the witness statement, from time to time, different organisations would entrust us to operate courses. Apart from the Housing Department, we also have, say, the Correctional Services Department, because if the instructors have idle time, we would like them to widen their scope and to take up more work, and we would like to offer more training for people to get a licence to work.

CHAIRMAN: So the Housing Department then commissioned you to offer a course for HD's contractors' workers?

A. Yes.

CHAIRMAN: Any other questions? No?

Thank you, Mr To.

(The witness withdrew)

MR SHIEH: Chairman, I understand that Ms Fung is here, so maybe we can take a morning break earlier.

CHAIRMAN: You will be calling Ms Fung first, before calling another instructor of the CIC?

MR SHIEH: Or perhaps if chairman would like to hear from the instructor of the CIC first, we can interpose.

CHAIRMAN: Since we are on CIC, I think it would be better if we hear from another witness from the CIC.

MR YIN: My understanding is that after finishing the first witness, it will be Ms Fung first.

MR SHIEH: Or previous arrangement is that we would have Mr To followed by Ms Fung and Mr Li. Let me ask if it's all right for Ms Fung to wait until the afternoon.

CHAIRMAN: Let's take a break first. We'll hear from Ms Fung at 11.30.

(11.12 am)

(A short adjournment)

(11.32 am)

MR YIN: Chairman, the next witness is Ms Ada Fung.

CHAIRMAN: Good morning. Please take the oath or give affirmation.

MS ADA FUNG YIN SUEN (re-sworn)

CHAIRMAN: Please be seated.

Examination-in-chief by MR YIN

MR YIN: Ms Fung, you gave evidence before the Commission earlier, so you should be familiar with the procedure.

I am going to read out your second witness statement, on the request of the Commission.

A. Right.

Q. (Statement read in English).

Ms Fung, you have just heard the statement that was dated 14 December 2015. Do you wish to adopt that as your evidence?

A. Yes.

MR YIN: I have no other questions, Chairman.

Cross-examination by MR SHIEH

MR SHIEH: Ms Fung, good morning. I have some questions regarding your second witness statement. I would like to direct you to paragraph 4. In paragraph 4, you refer to a report. It says the advantages and disadvantages of copper pipes and uPVC-lined pipes. Do you see that? There's a file in front of you. Page 40002 of B15.4.

I would like to direct you to page 39998. 4.3.1, that is the 7th meeting of the LGCQ, which says an interim report was taken. So the interim report is on 40002.

A. That should be the one.

Q. It doesn't say interim, but that is the only paragraph that could be an interim report?

A. That is correct.

Q. So, in that meeting, you had discussed, in the 7th meeting, and then subsequently, on the 15th meeting in 2001, the minutes of that meeting are at page 40055.

I have a question here for you. It says it is "not ruled out" -- at 2.2.4, "(In English) ... the use of GI pipes has not been ruled out however the use of copper pipes may be considered in the future."

A. Yes.

Q. It doesn't sound very certain, and all along the Housing Department specifications had allowed for lined

GI pipes?

A. Yes.

Q. So at that time the suggestion was let's allow or request -- maybe we can consider copper pipes as possible material. So when it says, "(In English) has not been ruled out", it means they are continuing to use GI pipes?

A. That means they don't rule out the possibility of using this material.

Q. But it's already in existence. They weren't using lined GI pipes; you don't have to rule it out.

A. Well, it seems that at that point, should there be a one-off change to copper pipes, so it seems to leave some room there, so the two can exist together.

Q. It's not very certain, so they are leaving room for manoeuvreing. They are continuing to use lined GI pipes. We won't rule it out. We won't change the specifications. We will keep our options open.

A. (Nodded head).

Q. So, in that meeting, in 2001, subsequently, just talking about specifications, they were continuing to use lined GI pipes?

A. Well, it seems that the two material specifications had been allowed and they could choose.

Q. So after that there was a lot of work done?

A. Correct.

Q. But in that meeting, to kick-start it, a series of processes -- you did studies and different people had started different drafting work.

A. I agree.

Q. But after that meeting, first of all, they couldn't immediately, even though they were permitted to use copper pipes. So in the interim, whether you call it a transition or buffer or preparation period, you had to wait for the specifications to be finalised, so the technical requirements had to be finalised and then you could provide it in the contracts and you could allow them to use this material.

So in 2001 you started to think about it, think about specifications regarding or relevant to copper pipes, and that was after 2001?

A. Correct.

Q. In paragraph 9 of your witness statement, you say:

"(In English) A working group was set up by the then [CA/D&S] ..."

Is that Ms Theresa Yim?

A. It might have been Chris Gabriel.

Q. They looked into the use of alternative materials in cold water supply installation.

A. Yes.

Q. Then there were meetings.

So, after that working group, was that the 15th LGCQ meeting after 2001 where they decided to explore the use or consider the use of copper tubes and work arose from that?

A. Correct. Well, after the 15th LGCQ meeting, the CA/D&S had arranged for this.

Q. So your description in paragraphs 5 to 9 was a description of work arising from the 15th meeting and it related to studies of copper pipes?

A. (Chinese spoken).

Q. Prior to the interim report, you had done some work?

A. Yes, we had ongoing work and it was only confirmed after the meeting and further meetings were called, and these colleagues formed a working group to study the use of this material.

Q. So we now see documents where you are personally involved. It's the DCMB paper, page 40080.

A. Yes.

Q. It was July 2002. The DCMB issued this paper, that is after the working group was formed. They felt that they could suggest using copper pipes as an alternative piping material. Let's jump to the recommendation. There was a review in 12 months' time.

If you look at 40084, the technical requirements,

there's (a), (b), (c). There's some combinations. It could be all GI pipes or all copper pipes or a combination of copper and ductile iron pipes. But there are some limitations. There are pressure requirements and so on, pipe diameters and so on; there were some constraints.

A. Yes.

Q. So you have manuscript opinion. At page 40092 -- I understand that in preparing your witness statement, you would refer to documents that you weren't personally involved in, but you were involved in this one. We have your handwritten comments there. It says:

"(In English) I have reservations on this recommendation. 12 months is not long enough to draw a conclusion."

So your opinion was that regarding the review period, you should wait longer or whether 12 months was sufficient; that was your only comment?

A. Yes. The purpose of this document was to seek members' approval to adopt this alternative material, so that was the mainstream view, whether the 12 months was sufficient, whether they could decide which material was appropriate. It was a general comment.

Q. You mentioned mainstream. So do you mean that when you look at this proposal, a draft DCMB instruction, it asks

for comments to the circulated people, and you described it as mainstream. So you are looking from a macro perspective, and you are saying that there are three types of materials, and your focus is not on details such as soldering material; is that what you mean?

A. Yes, you can interpret it that way. The DCMB paper, the purpose is stated very clearly, to seek members' approval to allow choice for alternative piping material for cold water supply installations in HA buildings, and also by contractors during the time of tender and construction. So that's the purpose of the document, and I generated some comments in the light of this.

Q. So we have recommendations (a) and (b). So from your perspective, I understand you are saying it's a mainstream issue. But from your perspective, if we have any detailed technical implementation, that is after using copper pipes there are a bunch of technical issues, so at what stage who would raise these issues, if it is not in this DCMB approval stage? So subsequently would there be other people responsible?

A. Well, at this step, we are aware that colleagues have gone through the normal drafting process. So the technical part should have gone through thorough consideration.

But in appendix 1, you can see, in 40093, the draft

instructions, and I have some handwritten comments, "Annexes not attached", and the detailed special processes were not included.

I even asked for copies of that material.

Q. It says, "Annexes not attached", in order to save paper?

A. I asked for a copy and I was given a photocopy. So that was the situation.

Back then, the general procedure was that unless I had specific requirements, otherwise the colleagues responsible for technical specifications would have gone through a thorough preparation and vetting process, and they would submit the paper to DCMB for approval.

So, under this vetting exercise, I heard some general comments, whether 12 months was too short, and the annexes were not attached.

Q. When you look at this DCMB paper, whether to issue these instructions, so you had to place your faith that the technical specifications had been handled by the professionals and you were just looking at it from a policy level; you wouldn't look at the technical details, because that was the responsibility of other colleagues?

A. That is a correct understanding. Of course, if we had that responsibility to approve these documents, then of course, if possible, we would also look at the

details. There might be some areas that needed to follow up. Otherwise, procedure-wise, we could see that these colleagues had gone through the technical study, they had looked at procurement, they also looked at how contractors would choose this material. So they did this over quite some time to reach this stage, so we had reason to believe that they had done their due diligence.

Q. One of the annexes is a revised draft specification. Do you have it?

A. Yes.

Q. For example, page 40094. Annex A is a new or revised specification, as you can see. So you have revised specifications in the contract, to deal with material specification requirements after copper pipes are approved to be used as alternative materials. So do you mean that you asked for these documents but you didn't read it very critically; you just understood those as a thick stack of revised specifications, without further dwelling into details?

A. Correct.

Q. All right. In your witness statement, let's take a look at the chronology of events. In paragraph 13, you talked about the new or revised specification clauses arising from feedback to the Specification Library 2004

Edition, and that instruction was in 2006.

So do you mean to say that starting from 2006, copper pipes were allowed to be used, and instead lined GI pipes were less popular, so the specification clauses were deleted?

A. Well, the review period was more than a year, and after several years, in 2006 -- over the years, we understood that in the market, copper pipes prevailed over uPVC-lined GI pipes. So it was deleted from the specification.

Q. So, in the end, the GS pipes clause was deleted; only copper pipes were left?

A. Yes.

Q. If we look at paragraph 12, about draft specifications, the DCMB paper was in July 2002. That was shown to you just now.

For the specification, in fact there was a consultation. I don't know whether you were aware of the consultation. You cited these documents in your witness statement, but I want to know whether you had personal knowledge.

For example, page 40133. In fact, it starts with page 40132. In early 2002, SC Leung enclosed a series of specifications, including that for fresh water pipe materials, copper pipework, et cetera, and there are

technical specifications, and recipients were invited to make comments.

Now, the consultation process, did you take part in it?

A. No, I did not.

Q. Let me show you page 40135. The first draft, only three categories of solder should be used, at the bottom of page 40135. That's in the draft.

Then Ms Theresa Yim, CA/D&S, on 40142, responded in a memo to SC Leung. This memo is dated 22 January. That's Ms Theresa Yim. They were in charge of different areas. But in terms of the hierarchy, they belong to the same rank. All chief architects and chief BSE -- well, the same rank. So it's by way of comment, not actually an instruction?

A. As they co-operated and worked together, there were memo exchanges.

Q. Then (b):

"(In English) To consider inclusion of quality tests for copper pipes/fittings (may refer to quality tests for uPVC lined galvanised steel pipe and fittings)."

This memo was not cced to you?

A. No.

Q. So she asked Mr Leung to consider this, that is to include quality tests in the contractual terms, that is

to require contractors to provide quality tests or to allow employers to insist on quality tests, because usually, if it is not included in the contract, you need to make extra payment.

A. My understanding from my colleagues is this. The quality test -- and here it may refer to quality test for uPVC lined galvanised steel pipes and fittings -- the reason was that it was a kind of centralised-type test. For uPVC-lined galvanised steel pipes, there was no BS standard and we relied on our own testing, and tests were required. For example, site tests for pipes and fittings, whether there would be any expansion when hot water passed through, the tests would be conducted by the BSE, not necessarily included as a contractual term for the contractor to conduct the test, but to remind the BSEs that when the other type of materials was used, the quality test should be conducted.

So central-type tests were conducted to confirm that they were up to standard.

Q. So your understanding is that Ms Theresa Yim in this memo asks Mr SC Leung or CBSE/2 -- he is actually in the post of CBSE/2 -- not to add contractual terms requiring contractors to submit quality tests for individual fittings, but (2), when deciding to use certain materials in the specification, make sure that the

quality tests have been seen, to reassure yourself that the materials could be used.

A. It's sort of a higher-level test.

Q. That is before you included this in the specification, you should ensure that there were sufficient safeguards to ensure that what was included in the specification would be all right. But what if I didn't include a certain brand in the specification but only that certain solder or copper pipe could be used? So what would be required in the high-level test?

A. For example, for hot water or cold water supply and ductile iron pipe, and so on and so forth, on various fronts colleagues would be required to conduct tests, to ensure that the fittings and pipes would not cause any undesirable effects, and the tests covered different types of tests, because it says "may refer to quality tests for uPVC-lined galvanised steel pipe and fittings", and that was a requirement.

If copper pipes were used, because there was already a BS standard for reference. So this part didn't refer to that test, not that level of test.

Q. That is, when there is a BS standard, then one should follow the BS standard; right?

A. Yes.

Q. Let's take a look at the reply. Page 40158.

This is Ng Tat Kwan, the subordinate of SC Leung. In paragraph 3, it responded to the previous point:

"(In English) Regarding the request to include quality tests for copper pipes/fittings, please note that we have already included relevant international standards on the manufacturing and quality testing aspects for all pipes and fittings and specific type test for compression type fittings in the proposed technical specifications. Tests for other purposes are not envisaged at the moment."

So your understanding is that -- what is your understanding of Mr Ng's reply? My understanding of your previous answer is this. If you want to specify certain materials to be used, you need to specify the standard. The standard provides requirements that should be met, and as a result, no central-type test is required. I want to know what "type test" means. What if there isn't a BS standard for the material? If there is a British Standard, then, say, in the BS standard, the chemical ingredients would be stated and it should be lead-free, and so on and so forth; there are requirements you should follow. What if there is no BS standard, what role would a central-type test play? I understand Mr Ng's answer that there is already a BS standard so no central test is required.

A. For uPVC-lined GI pipes, a series of tests would need to be conducted, to confirm that they could meet certain standards or requirements. However, this paragraph means that there is already a BS standard for copper pipes. So these standards can be relied on.

Q. So, if there isn't a BS standard, for the old one, the uPVC-lined GI pipe, after conducting a series of tests, what happens? The test results would be included in the spec or what?

A. For uPVC-lined GI pipes, because it is a Japanese product. There wasn't a BS standard for the different components of the uPVC-lined GS pipes, including the lining and pipes. They had separate EPS standards, so they would be taken out for separate testing. So it was way more indirect.

By comparison, copper pipes would be much easier, because there were already BS standards applicable. So that's what this paragraph means. Ms Theresa Yim was the acting CA, and she asked why there wasn't this test, and that paragraph essentially responds to her question.

Q. Say if I have uPVC-lined GI pipe, with a lot of components, including a lining, the pipe itself. The pipe itself doesn't have a BS standard, so I have to conduct a series of tests.

A. Galvanised steel and PVC tests. So I need to conduct

separate tests for different components. Quality test would have to be developed with the manufacturer.

Q. So, for quality tests, they are contemplating this situation.

Say I would write down the brand or product of a certain manufacturer, otherwise I won't be able to test it, because if I only put down a generic type, I can't approve any type.

A. So, usually, we would put down a generic type. A series of tests would have to be carried out. As for the standard, you would need to develop the testing methods with manufacturers.

So, if these pipes don't have a British Standard, so they would have to take it apart and test each part to the British Standard requirements. So I believe that during that period, there was a complex arrangement, and the size of the pipes were different, and they had lining and there was GI. It would be larger than a similar pipe. It would be larger. Back then, that's why they needed time, a buffer period, for the two materials to be used together.

At the design stage, the specifications, the contracts, each part had to be thought through thoroughly. So, by 2002, the whole process had been run through. At the technical level, we had looked into

everything, and the last step was to draft it into the contracts. So that was the whole process.

Q. So you are saying that lined GI pipe, there are different components? There's lining, the GI pipe itself, and that it doesn't have relevant standards, but it the components have standards. So that's why, when you mentioned a process similar to using GI pipes, you had to test the different components and then you had to test it together, to check its functionality? All of the components had to comply with the relevant standards, and when you combine it there wasn't a big standard, but you had to check to see if water leaked, and so on?

A. That's correct.

Q. But now you felt that the relevant copper fittings or tubes, they had the relevant British Standards, so you didn't need further testing. So as long as you fulfil the British Standards for the thing, that would be sufficient?

A. Correct.

Q. But you never considered providing proof that you had complied with the British Standards; you didn't do that?

A. No. If you look at the correspondence and the memoranda, no.

Q. So you had to rely on faith.

I would like to refer to your page 40128. Paragraph 14 of your witness statement:

"(In English) During the course of specification drafting, approval of the Water Supplies Department had been sought for the plumbing proposals for the active standard domestic blocks that incorporated more than one design ..."

Then you have a memorandum, page 40128. You mentioned correspondence between WSD. What was your focus? Are you saying that you had notified WSD, or you were asking them if they needed to highlight any issues regarding components?

A. Correct. The colleague responsible for standard domestic blocks mentioned that pipe sizes would be different, you had to notify the WSD that there were some changes, so the different material would co-exist, so we needed to notify them and seek their approval.

So pipe size would be different, we would have different materials, so they need corresponding revisions when this occurs. This memorandum was to notify them that two materials were used, uPVC-lined and GS pipes.

Q. So these are drawings.

A. Yes. They are related to the materials. I mentioned the pipe sizes would be different. So you had to submit

that to the WSD for approval.

Q. So it would not be related to solder material. The diameter might change, but the WSD had not noticed that it was related to soldering material.

A. In 40130, there is a response from the WSD.

Q. It refers to cement mortar lining.

A. Yes, not bitumen.

Q. That was the lining material.

A. Yes. So there were some areas of mutual concern, so we had to rely on each other.

Q. Mr Ng Tat Kwan, his response that we read just now, at page 40158, you personally understood what he was saying, as you explained just now, and you agreed with his comments?

A. Yes.

Q. I have some other questions, not directly related to your witness statement. We are aware of some recent developments and I have some questions for you.

From the newspapers, we see that Urban Renewal Authority, they have a project (Chinese spoken).

A. I have heard of that.

Q. It says they might have identified some lead in the water.

Our understanding -- you are a project -- they are not using solder material that we talk about?

A. I just read the newspaper reports.

Q. Our understanding, silver brazing is more expensive, but if it contains lead then we are thinking there might be other components that might contain lead. Do you have any views on this?

A. If you look at the BS EN specifications, silver brazing, it has a cadmium-free requirement.

Q. Please refer to B15.1. Here, we have brazing specifications. Page 37598.

A. Yes.

Q. You are saying, "(In English) Brazing alloys for copper and copper alloy capillary fittings".

Page 37599, "Use cadmium-free brazing alloy". It also says you have to use lead-free material.

(b):

"(In English) A supporting document of lead-free grade brazing material."

So if you use brazing, it has to be cadmium-free and lead-free.

A. If we refer to the British Standard, their description, it should be table 6. In exhibit 13, in the second witness statement, 40193, we see table 6, and there's a note. Brazing alloys with cadmium are not permitted, and we would copy that it has to be lead-free and cadmium-free. That is our understanding.

If you look at the table of the brazing components, it's silver/copper, and there might be cadmium or phosphorus. And soldering material, there's lead/tin, tin/silver, tin/copper, and you have to use the correct category to ensure that you are lead-free and cadmium-free.

So what circumstances would lead to material being leached, what chemicals would be leached would depend on which material -- whether it was currently specified and whether it was currently procured and used.

Q. One last question for you. It might be a philosophical question.

After the excess lead in water incident occurred, we have seen different circulars and different people started to be aware that this was a serious matter.

A. (Nodded head).

Q. But potable water can contain a lot of different harmful chemicals, during construction, or it might occur naturally, and it just happens that lead is involved in this incident. So I would like to ask the Housing Department, in risk management in the future, will they be very passive?

In this case we had excessive lead, and they issued different documents, they revised the documents, they said they have to be careful. But other potential

materials, are we taking the approach -- their attitude is -- shouldn't you pre-empt, shouldn't you deal with all the risks? It's not possible. You can only react retrospectively. You can only react to things that happen. Is that the case? For example, cadmium, if nobody talks about cadmium, our focus is now on lead. Just now you talked about cadmium, but if you look at the WHO, there's a lot of potential substances that can affect us.

So what is your attitude towards risk management?

A. Well, WHO standards, it is not for a layperson. From my limited understanding, it's for local authorities, for them to set standards and regulations. Then professional users or developers have something to fall back on.

If you talk about the different materials, physical, chemical, microbial, radioactive, there are more than 100 materials that are known to us. So the water quality, each jurisdiction, we might not have total knowledge about it. We have to rely on the authorities to come up with guidelines or relevant legislation.

Q. What do you mean by relevant authorities?

A. Well, the local authorities. For example, those that are responsible for water quality or health or environment, these relevant organisations. The Housing

Department is a progressive developer. Of course, we can work with regulators, and we comply with the law and conduct our development work.

So when we look at our building specifications, we have to comply with Hong Kong law. We rely on longstanding international standards such as the BS EN to formulate our building standards, and then we transform that into a contractual requirement and we have to rely on our contractors. They are the ones who build. So they have to deal with procurement, workmanship, and monitoring supervision at the construction site.

If you look at the risks, it is not whether it's high-risk or low-risk; we have to look at potential risk, especially in material procurement, and I'm referring to the contractors; how do they procure material and when they take delivery of goods, when they store it in the warehouse, when they use the material. There's a lot of work that needs to be done.

So this case has taught us a lesson that aside from high-risk areas, we also have areas of low risk, and we might have not exercised full diligence, but we therefore need comprehensive supervision to prevent problems occurring in procurement.

MR SHIEH: No further questions.

CHAIRMAN: Questions from anyone? Mr Lee?

No questions from others? They usually wait until the end before they ask questions.

Cross-examination by MR LEE

MR LEE: In fact, to resolve the problem, I wonder if you know that there is actually a very good way to solve this problem. Around the world, a number of countries have adopted this approach -- Germany, the US, Canada. This is how it is done: to put some chemical in water, then for a building, at the connecting point with the water mains, the chemical would be put in the water pipes, for water to travel through the pipe to domestic units, and it serves two functions. The first is to cleanse the pipes by letting the dirty particles attach to the chemicals, and then the coating would be formed in a month or so, a thin coating would be formed along the pipes, and then phosphate or silicate would be the chemical compound of the coating.

The coating would be hard and thin, so you can call it another lining of the pipes, such that when there is a crack on the exterior of the copper pipes, which may lead to water leakage, because of the coating, the inside of the pipe, there wouldn't be any leakage.

Have you heard of this method?

A. Thank you, Mr Lee, for your suggestion. We have read

and seen different methods. As to whether these methods are suitable for use in Hong Kong, we need to rely on the authority of the professionals, because for different regions the hardness of water may be different, the additives added to water, whether the thin coating could be formed, whether there would be any impact, we do not have sufficient knowledge. We can only rely on the relevant authorities and professionals to study in greater detail whether it is suitable for use in Hong Kong, before we consider whether we would use this method.

Also, approval would be required in relation to the use of chemicals, and we have a number of standards for water, microbial, chemical, et cetera. So we don't have sufficient knowledge.

Q. You don't have sufficient knowledge, but have you heard of anything similar?

A. Yes.

Q. Of course, you are not a professional, but if there are professionals in the WSD suggesting that this is a cheap and effective alternative, would you use it?

A. If this is the recommendation of the Water Authority, then we may consider adopting this method.

Q. Now, you seem to have a lot of reservations. Is it because you are not familiar with the material or the

chemical I suggested, or is it because you don't want it even if it's good?

A. Well, if it's good, then of course I want it, but we need to be sure how this can be done and whether the end users' effort is required. For example, we need to liaise with the end users; there are a lot of details to consider.

Q. No, on the contrary, if you need to replace pipes, it has to be done within the unit, but for this method, it's done at source. You don't need to replace pipes. Do you know that in Hong Kong water supplies are divided into 26 areas?

A. I understand there are reservoirs in different districts. As to whether -- end users involving -- or details involving end users, we need to consider a number of areas, including the expert studies and how users should work with us.

Q. To put it simply, for running water, if chemicals are added, then the coating would be formed along the flow of water, no need to replace or crack any pipe.

A. That is why I said study would be necessary.

Q. If the study outcome is satisfactory, it can be used; otherwise, it can't be used; right?

A. Right, but the first step is for the relevant authority to confirm that the material is suitable for use in

Hong Kong and can be used in Hong Kong.

Q. Has your department discussed with the relevant company recently?

A. I understand the relevant companies have liaised with the WSD or other relevant departments. But as far as our department is concerned, we rely on the contractual terms. We require the main contractors to replace pipes which are up to standard, and we have requested main contractors to submit proposals on pipe replacement.

Q. So you have heard of this product? Have you heard of this name, Tersa Aqua, which means smooth water; have you heard of that?

A. Yes.

Q. Of course, you can rely on the contract to request contractors to replace pipes, but for users, it's really a plight for them.

A. For replacement of pipes, we need to plan properly, to minimise nuisance to residents. But inevitably, workers will need to work in the domestic units. However, if this method is taken, you don't even need to touch the pipes; you don't need to replace them.

Q. Heavy metals would not enter the stream, let alone cadmium and other chemicals, and that would solve a lot of problems?

A. I think we need to ask the WSD or the relevant authority

to look into that, whether the coating can be formed easily and whether there would be chemical reaction with other cleansing agents for water tanks, such as chloride. Well, you can use less chloride as a result, but we are not the expert. I don't have a good answer today. I need to consult the Water Authority.

Q. Of course, you have played it safe. For the Housing Department and for yourself, you don't need to make a major decision. I understand that. But at the same time, I reckon you would like to see this done; right? Wouldn't you want to try it and see if it works? I see that you are very conservative, you are very prudent, but you don't seem to have the commitment to resolve the issues.

A. We tried to ask the contractors to use non-destructive materials, but there were risks and difficulties, and we need to strike a balance between the use of new materials and the risks and the reliability or durability.

And the maintenance aspect, I won't say that this is definitely not feasible, but we need a more detailed study and analysis and approval from the relevant authority, before it can be used. Because this is added directly to potable water, we need to be careful about its impact on water quality.

Q. So have you looked into that with the Water Authority?

A. For this type of product -- and there are more than one -- we maintain close contact with the WSD, to see if there is any breakthrough.

Q. So from what I heard, it seems that you are still being the gatekeeper; you are still doubtful about these products. I wonder if you understand that I am helping the government, helping the Housing Department, to solve the problem, but I find it strange; it seems that I am not welcome.

You or the Waterworks or the WSD are responsible for water tests?

A. Right. In the past, the WSD was responsible for testing water for us, in PRH estates.

Q. That's still the case; right? Has your department conducted tests yourself?

A. For newly constructed buildings, we rely on our own team and we engage our own laboratories.

Q. So, for water tests, would you leave the tap running for five minutes, or would you test water that has been left overnight?

A. For water quality tests, the WSD recommends the methodology to us. That's the case for existing estates. For newly built estates, before the intake stage, we will take water samples.

Q. That is, you leave the tap running for five minutes before you take water samples for testing?

A. That's the case for existing estates, and I was referring to newly completed or estates about to be completed.

Q. For tests in existing estates, we follow the methodology recommended by the WSD, that is water samples to be taken from taps running for five minutes.

For newly built flats, what happens? Do you also leave the tap running for five minutes before taking samples?

A. If we follow the WSD's methodology, we will take samples in a way as endorsed by the WSD.

Q. So that is to leave the tap water running for five minutes. But do you understand that if the tap is left running for five minutes, then the level of everything, including heavy metals, would be reduced to a very low level?

A. According to expert opinion, leaving the tap running for some time would help clear residues. So we rely on expert opinion and expert's requirement on how to take water samples for testing. This is based on expert opinion.

Q. I have a joint expert report, which is preliminary, in bundle V1, tab 1, pages 1 to 44. This joint expert

report is prepared by two professors, as commissioned by this Commission, Prof John Fawell and Prof Joseph Lee.

Have you read this report?

A. I have seen this report.

Q. Do you accept that these experts are experts of high standing?

A. These are internationally renowned professors, and our work is carried out under the regulatory framework of the WSD.

Q. So this has nothing to do with you. Would you say that the WSD experts are better than these two international professors?

A. These two are international experts and I respect all of them.

Q. But the WSD's experts, aren't they internationally renowned as well?

MR SHIEH: This would have to be decided by the Commission, which experts have authority.

CHAIRMAN: We will address this point in our report, but you can continue your questioning regarding the preliminary report.

MR LEE: You see on page 6 -- I won't read it out loud; you can go through it yourself.

In paragraph 2, the US, UK and Japan, they take water samples from the tap directly.

Then you can read the following two paragraphs. Have you finished?

A. Yes, I'm done.

Q. It's simple. If you were to take water samples, why do you have to sample it? It's because you want to know -- for tenants in PRH, they consume water. If there were excessive lead in the water, would that lead to harm? That's why you want to test the water.

A. Well, it mentions:

"(In English) Fully flushed samples on their own may serve the purpose of assessing the general quality of a drinking water as supplied ..."

Q. Yes. So why is society so worried? Because there is excessive lead in our drinking water.

CHAIRMAN: I think Mr Lee -- I am guessing -- I think he means that sometimes we don't need to be so conservative, we don't have to comply with WSD instructions, and while complying with domestic requirements, at the same time, as the experts say, you can take tests without flushing first.

A. Well, since the COI also has a lot of experts, we will hear their conclusion. In Hong Kong, we can look into this, together with our WSD experts. We will adopt the final recommendations.

CHAIRMAN: So, given the methodology you referred to,

I think Mr Lee is saying we don't need to wait for the WSD; we can take the initiative, use some innovative methods to do some tests. We don't need to wait. I think that's what he means.

Have you explored these options?

A. Under general circumstances, we have done this work, but since we have so many experts on this occasion, and the WSD have also recruited their experts, COI has also commissioned experts, I think the expert opinion, their recommendation can be adopted by Hong Kong and we can benefit from them.

It's been some time -- I understand that the COI report will be available this year, and we will have ample opportunities for further co-operation.

MR LEE: I have to thank the chairman for asking the question on my behalf.

You have to understand, you cannot always take the passenger seat. If we have excessive lead in water, we have PRH tenants who have been affected, and a lot of people will sue you and take you to court, so you shouldn't think you're in the passenger seat and you are safe. You think you are safe, but people continue to consume tainted water.

So you are potentially facing a lot of lawsuits. Some experts say that they can take a lax approach; some

experts are much more vigilant. I am telling you that you are responsible; you cannot take a relaxed approach.

A. I believe that expert opinion, for Hong Kong public, including PRH tenants, their comments would be beneficial. We are not just taking a passenger seat. We have to consider the global environment, for example Hong Kong water, Hong Kong water resources or water quality, different tests and improvement works. We need to co-ordinate all these efforts.

What I mean is that of course we cannot neglect or we cannot go too far ahead and take initiative before we heed expert opinion, because we have been doing our work for quite some time now. We want to do our best.

Q. Actually, I have asked you two questions today. I have referred to the product Tersa Aqua, and another question was how you should do your water sampling; two questions.

Regarding the first question, you are not familiar with the product, you are waiting for expert studies; that's no problem.

A. There are a few different products. There are cheap and expensive products.

Q. The second question I want to ask is water sampling. You cannot avoid this question, because world-class experts are saying, and Hong Kong experts say, that the

flush for five minutes, you have to understand what the difference is. Do you understand --

MR G CHAN: (Chinese spoken).

INTERPRETER: The speaker is not speaking into a microphone.

MR G CHAN: We have different expert opinion.

CHAIRMAN: It depends on what Mr Lee wishes to ask.

MR LEE: I represent three groups of tenants, and I think in the future there will be many more tenants that will be affected. The Commission is seeking answers to the question here. But how do we remedy the situation in our terms of reference? It's not just PRH tenants that are affected, it's all private buildings. Nobody knows what the situation is regarding private buildings. So we need to help the Commission solve these problems.

If we just flush for five minutes, five minutes, we have to listen to all the evidence before drafting a report, but there's a lot of things happening in the meantime. A lot of people might take their recommendations on face value and flush for five minutes before taking water sample. But do you flush five minutes when you get up in the morning?

So we have a lot of problems, and of course I am asking the witness, she's only responsible for Housing Department buildings, but a lot of people are affected.

So I think, any objection -- I have to insist on

asking these questions regardless of objections.

MR YIN: I have heard Mr Lee for quite a while now. I do not object to his questions about water sampling. But the issue is, is it appropriate to ask this witness? Because Ms Fung, first of all, she only represents the Housing Authority to attend the Commission. Second, we understand that the affected estates have already undertaken remedial measures: filtration and so on. There are also other re-plumbing measures.

So whether the water samples taken after flushing -- so even though it might be an interesting question and a matter of public interest, but is that an appropriate question for this witness, I have my reservations.

MR LEE: The following question I have would then be: have you met with the WSD at a high level? Have you asked them why they insist on taking a sample after flushing for five minutes? Do you have these high-level communications with Mr Anthony Cheung Bing Leung, the secretary? Did you personally have these meetings?

A. First of all, our permanent secretary, during the water sampling, he was in close liaison with WSD and even the government laboratories, to undertake this exploratory work.

The whole government, including the chief secretary and relevant secretaries, the permanent secretaries,

they had sat together and talked about this topic.

Q. Well, it is not just an investigatory issue. We are talking about saving lives. Why do you keep referring to flushing for five minutes? If the samples are not accurate, a lot of people will be affected.

CHAIRMAN: Asking Ms Fung to answer would not be fair. I think this question should be directed directly to the WSD director of Water Services. Of course, the government chemist had this recommendation and the WSD accepted that, so politically the director for Water Services would be responsible.

So when you ask Ms Fung, "Why did you not comply with our expert preliminary report findings to take water samples?" -- well, then there might be a lot of reasons for her doing so. I don't know. But she's now saying, "We are following WSD instructions and WSD says that's the way to do it, so that's the way we do it."

If you read the newspaper reports, after the preliminary report, the media had asked the WSD for a response. If I remember correctly, WSD's response at the time was the two tests are compatible; there's no problem. That's their explanation. Whether that is right or wrong, we'll decide later.

MR LEE: It won't be incorrect.

CHAIRMAN: Well, politically, I'm talking about political

accountability. The whole water sampling procedure, the methodology, the number of samples, that is not the decision for the Housing Department, it's the WSD, and the WSD will determine how water samples are taken. Then the government chemists, they just have a technician role, they will just -- so the appropriate person for these questions should be the WSD. Mr Lee, I understand what your intention is at this stage. If the WSD methodology is wrong, then in other words some tenants, for example, for the unaffected estate tenants or private building tenants, they would be susceptible to excessive lead in water.

So Ms Fung cannot answer that, and politically that is the ambit of the WSD, because they are saying that method is appropriate.

MR LEE: However, Chairman, your analysis is correct. However, let's consider, from another perspective, if a child is sick and if the doctor tells a parent, "Just drink water, sleep more and you will be all right", and if another doctor suggests, "No, it is a major problem, an operation is needed", and I am not the expert and if there are two experts with different opinions, then what should the parent do?

A Chinese medical doctor may say it's all right, but what happens if it goes wrong? What happens if a lot of

other residents are affected? Because she just now said that yes, tests were carried out following the WSD's recommended methodology, but in fact there should be different tests, overnight and five minutes of flushing.

MR SHIEH: Chairman, I understand Mr Lee's question, but I think we can recite this answer -- it's been asked and answered umpteen times. She will be saying that the COI will be releasing a report and she is not the appropriate person to make this judgment, and she has answered this repeatedly.

If Mr Lee has said that asking this question repeatedly would make someone buckle and succumb to pressure, maybe he is hoping that some traumatic scene would happen, Ms Ada Fung would break down in tears and make a confession. That is another matter; that's his expectation.

But this is not the terms of reference of this COI. Somebody in future may say that the COI should be politically accountable, but I say here that the COI's work should be subject to the terms of reference. Mr Lee can object, but ultimately it's for the chairman to decide.

MR LEE: Is it my turn yet?

MR SHIEH: Yes.

MR LEE: Chairman, I feel resentful. I did not take up this

case just to make myself famous. I demand an apology.

MR SHIEH: I will not apologise.

MR LEE: Chairman, in that case, shouldn't we summon the WSD's witnesses as soon as possible? Because we are dragging our feet every day. Without anyone making this decision, more people will become victim.

CHAIRMAN: That is why we have released this preliminary report.

MR LEE: And yet your request is not acceded.

CHAIRMAN: Then there is nothing I can do.

MR LEE: But more and more people are falling victim.

CHAIRMAN: Ultimately, I think Mr Shieh's argument is sound.

Our terms of reference are this. As far as politics are concerned, it isn't in our terms of reference that we should be politically accountable. That's not what we should do. We make everything public; we have uploaded all the information. At this stage, it's accessible by everyone.

Now, it's up to you to decide which avenue to take. Let's say the preliminary report has been released, it's available to the Housing Department, and if the Housing Department decides that it should continue to follow the WSD's guideline, then so be it.

As for the issues raised by you just now, for example, you may be sued by a lot of people, then it's

really out of our reach to help them. It's not really within our scope. At this stage, I can only say what I need to say, which has been said just now.

MR LEE: I really hope Ms Fung would not take this attitude.

COMMISSIONER LAI: Mr Lee, you have made your stance, and according to our timetable, very soon we are going to call WSD's witnesses, in the coming few days.

MR SHIEH: Next week.

COMMISSIONER LAI: Next week, it will be the WSD's representatives' turn.

CHAIRMAN: So that's what we need to say for the time being, so please calm down during lunch.

MR LEE: I am very calm during lunch, because Mr Shieh isn't there.

CHAIRMAN: Basically, for the discussions that we held just now, at this stage, basically, they shouldn't have taken place at the COI hearing. At this stage, we should be asking questions. Towards the end, you can make written submissions, you can make verbal submissions, and we will hear from you then. By then, you can represent the residents and make your submission.

So let's break for lunch and come back at 2.30.

(1.07 pm)

(The luncheon adjournment)

(2.31 pm)

MR LEE: Chairman.

Ms Fung, for the lead in water incident, I now put it to you that the Housing Department's position is this. The department doesn't want to find out the extent of the problem, because if more and more people become affected by the lead in water incident, then there is a higher chance that the department may be sued, and that is why you agreed to the WSD's approach or advice in the flushing for five minutes before taking samples. Do you agree?

A. As soon as the Housing Department discovered the problem, under the lead of the secretary, the Housing Department has been very open about handling of the incident. Any approach, any method that may help residents, would be used. For example, water vehicles were deployed, bottled water was distributed, and then the contractors were required to provide standpipe taps on all floors for water supply, and ultimately all pipes are to be replaced.

From our point of view, our department would be very concerned about the residents' use of water and water quality.

Q. About the question I just put to you, were you concerned about minimising the number of people being affected by the incident?

A. Based on expert advice given to us, on the most appropriate method to conduct water test, we undertook the relevant work.

Q. So, by experts, you mean experts in the WSD?

A. Of course, in Hong Kong, we rely on the expertise of the WSD, and I understand that in the investigation process the WSD also engaged international experts.

Q. Of course, whether to accept expert advice, for PRH estates, it's the Housing Department's decision; right?

A. The Housing Authority would also rely on the Water Authority, that is the WSD, being the regulator in this regard.

Q. However, you also needed to exercise your independent judgment to see if the advice was reasonable?

A. As far as the current operation in Hong Kong is concerned, although we work independently, we are also bound to accept expert advice or advice of the Water Authority, being the regulator.

Q. But as far as the law is concerned, there is no stipulation that you must follow the advice?

A. As far as the law is concerned, we should observe the requirement and regulation of the Water Authority.

Q. Right, so you need to follow what's written in the law?

A. Yes.

Q. But as for water samples taken five minutes after

flushing, this is just a piece of advice which they believe to be the appropriate method. It's just a piece of advice.

A. Of course, we respect the authority of the Water Authority, and they also have the experience or expertise or justification in supporting the method proposed for taking water tests.

Q. You have read the preliminary report prepared by international experts. They hold a different opinion than the experts of the WSD. Why have you insisted that water samples should be taken five minutes after flushing?

A. Mr Lee, as mentioned just now, first of all, we would follow the Waterworks Authority's guidelines, and also we have WSD's expert and also a number of reports released. I believe that the expert and those in charge of investigation would give the most appropriate advice or opinion.

Q. So the international experts' report is here. Has the WSD studied the report and considered it incorrect and given you another report?

A. Mr Lee, before lunch, chairman already mentioned that we have a number of experts, with a number of reports released, and work is ongoing and in the future clearer guidelines will be ready.

Q. Sorry, you didn't catch my question. You have this report prepared by international experts, but the WSD insists that water samples should be taken five minutes after flushing. Did the WSD explain to you whether the report is incorrect and that their advice should be followed?

A. Thank you for your advice.

Q. No need to thank me.

A. The WSD has read the preliminary report and we are still following the WSD's advice.

Q. But did the WSD explain to you that the report is incorrect?

CHAIRMAN: Please answer his question directly. It will be quicker. "Yes" or "no"? If it's "no" then say "no".

A. No, right.

MR LEE: I will move on to another area.

When you last gave evidence, you said that -- you talked about silver brazing. Do you remember that part of your testimony?

Let me remind you and see if you agree. If necessary, I can refresh your memory. Let me tell you the evidence you gave was last time. You said, in PRH estates, silver brazing wasn't used because those were smaller pipes made of copper. Did you say that?

A. Perhaps I should clarify. Silver brazing is used for

copper pipes which have larger diameter. That's why I said it wasn't used, when I meant to say that for smaller diameter copper pipes, silver brazing wasn't used.

Q. Because for silver brazing, high temperature is required, and for copper pipes of smaller diameter, silver brazing is not appropriate because it would become brittle.

A. I recall that because we conducted tests on site. We looked at soldering and silver brazing of copper pipes, jointing copper pipes. For silver brazing, a high temperature is required. For soldering, it's just 200 degrees or so, and for silver brazing, acetylene torch was required. So it's not suitable for jointing at a lower temperature, because after heating the parts, it may become red and brittle.

So, as far as my observation of the site is concerned, silver brazing is suitable for jointing pipes of larger diameter.

Q. You said "may". That means it may become brittle.

A. We witnessed what happened after it's heated and cooled down. That is the possible situation.

Q. Who told you that?

A. The experienced masters performing the demonstration told us that this could happen.

Q. Would you regard these experienced masters as experts?

A. They are skilled and experienced technicians and we also considered whether what they said was reasonable.

Q. Isn't silver brazing more expensive?

A. Yes, according to my understanding, and we need to be careful, because there are different categories. Some may contain cadmium. If incorrect materials are procured, side effects may occur.

Q. So, for silver brazing, apart from high procurement costs, there would be higher labour costs because of longer time needed?

A. Yes, it takes longer time to heat it up.

Q. However, after you gave testimony, other trade practitioners also gave testimony. They disagree with your statement. Please do walk me through. The first one is Mr Siu Kin Wong. The transcript is dated 4 December last year, page 10.

CHAIRMAN: I don't think you need to go through every witness, but let me summarise.

Having heard the testimony of so many witnesses, basically they suggested theoretically the phenomenon you mentioned could happen, but in reality it would not happen, and basically, many private housing estates use silver brazing.

In particular, for private estates, all the pipes

were embedded in walls, and if water seepage occurred it would be very problematic, with high maintenance costs, and owners would be dissatisfied.

So your suggestion that silver brazing may cause the smaller diameter copper pipes to become brittle may occur, but in practice it's unlikely to take place.

MR LEE: Do you agree?

A. I can only say that it's their choice. If they choose to use more expensive materials, the time taken would be different.

CHAIRMAN: Let's not talk about the choice. High labour costs, longer time, higher material costs, the general costs would definitely go up. But let's not talk about other things. Let's just talk about use of materials.

Silver brazing can be used; do you agree?

A. I would like to say that under this background, soldering or brazing can be used. As long as you procure the correct material, both are suitable. It is not one being superior than the other, because if you look at table 6 of the BS, British Standards, if you use the wrong material, brazing has cadmium or might even have lead. So it's procuring the appropriate material.

CHAIRMAN: I understand. I think Mr Lee wants to say that, for private estates, if there is a cheap and convenient material, why don't they use it? There must be

a reason. Do you understand?

A. I can only say that that's what you've heard, but what the actual situation is, you'll have to ask the material procurement people or people doing the hands-on work.

Soldering, it complies with the BS EN. It's a material that can be used, as long as they procure the correct material.

MR LEE: So you are saying silver brazing, whether silver brazing or soldering is used, as long as they procure lead-free material, as long as it's lead-free --

A. Cadmium-free, both are appropriate. It's a soldering material. The purpose is to have a seamless joint that doesn't leak. So if it fulfills the requirement, it's an appropriate material.

Q. On the last occasion you said for the small diameter copper tubes, it's not applicable, but that's not what the industry thinks.

A. Correct. For large diameter copper tubes, we use silver brazing. That's a fact.

MR LEE: I have no further questions.

I would like to add, Chairman, you have such a good memory, I don't think we need a long submission.

CHAIRMAN: Anybody else with questions?

Re-examination by MR YIN

MR YIN: Ms Fung, there is one point I would like to clarify

with you, regarding what Mr Paul Shieh said this morning.

You recall this morning, Mr Shieh said there has been some correspondence between Mr Ng Tat Kwan and Theresa Yim, and they refer to a change to use copper tubes, whether tests are required. Do you recall?

A. Yes.

Q. If I remember correctly, you explained that at that time, the material that you wanted to use, whether there was a British Standard, if there wasn't a standard then some internal components might have these specifications, but the whole piece would not have specifications and you would need to conduct tests. Do you recall that?

A. Yes.

Q. So after you responded, Mr Shieh said, "But when you decided on the specifications, whether the components were in compliance, you just had to put your faith in the work of your colleagues"?

A. Yes.

Q. I want to clarify. So it wasn't just a matter of faith; if the specifications say you have to comply with British Standards, then when you choose a material for a project, you will ask the supplier for lab test reports; is that correct?

A. Correct. I would place my faith in the testing methods. According to the specifications stated in the BS EN, I would put my faith in that. I would just ask for those tests.

Q. For example, FRY 99C, they have a new tech laboratories, there are these documents?

A. Correct. It's tested to British Standards.

Q. And of course we know that lab tests, they only test samples, so after the test, whether the manufacturing line can maintain stable quality, that is the quality control issue?

A. That is correct.

CHAIRMAN: That's it? Okay.

Thank you, Ms Fung. You are free to leave.

(The witness withdrew)

CHAIRMAN: Ms Chow?

MS CHOW: Chairman, the CIC's second witness is Mr Li Cheung On. His statement is in bundle X4, page 3125.

MR LI CHEUNG ON (affirmed)

CHAIRMAN: Please take a seat.

Examination-in-chief by MS CHOW

MS CHOW: Mr Li, on 14 December 2015, you provided an English witness statement?

A. Correct.

Q. In bundle X4, page 3127, there's a signature. Could you

confirm that's your signature?

A. Yes, that is my signature.

Q. Okay. I will read out your statement now. If you need translation, you can listen to the headphones.

(Statement read in English)

Mr Li, I just read out your witness statement in English. Would you adopt this witness statement as evidence-in-chief in this hearing?

A. Yes.

Q. I have some questions for you. In paragraph 2 of your statement, in 1996 you began working as an instructor for CITA until 2011. So you have been an instructor for 11 years, or 15 years. Are you still an instructor?

A. I work for the CIC but not as an instructor. I am now a trade test superintendent, in the trade test centre.

Q. So after 2011 you ceased to be an instructor?

A. Correct.

Q. Throughout your 15 years as an instructor, this morning we heard from Mr To that the CIC runs different courses. Which course did you teach?

A. I teach basic craft course, throughout my 15 years, a one-year course and also two-year course.

Q. Did you follow a handbook or course outline in teaching the courses?

A. Yes.

Q. Would you teach students things not mentioned in the handbook?

A. Yes.

Q. In paragraph 6 of your witness statement, you said that both solder wire and solder strip were introduced to students. They would be shown both. They would be told about the difference. Also in paragraph 6, you said that in general, solder strips, not solder wire, contain lead.

A. Yes.

Q. To my understanding, is it the case that for the difference between solder wire and solder strip, it's that solder wire is lead-free and solder strip contains lead?

A. No, not really. As far as construction is concerned, it is different from solder wire used in electronics. Once the torch comes into contact with solder wire, it will melt and it will be melted in the circuit board. As for solder wire that we use, it's about 5 millimetres in diameter, slightly thinner than a pencil, really quite thick.

As for solder strips that I described, when I showed them to students, they would be in the form of strips, about 200 millimetres in length, and it is written 40-60. That is the percentage of lead. It's not used

in water supply system. It's used in another course. And when we taught students soldering, we would deliberately tell students the difference between solder wire and solder strip, and that solder strip contains lead and it shouldn't be used in fresh water supply.

Q. So when in paragraph 6 you mentioned that solder strips in general contain lead, you were referring to solder strips which are thick?

A. It's not necessarily the case that solder strips must contain lead.

Q. But you did tell the students about these in your course?

A. Right.

Q. So the two differ in lead content, one being lead-free and one being leaded. Is it mentioned in the handbook?

A. No. At that time, there wasn't any description on lead content, because for solder strips -- I mean for solder wire, it comes in reels, but you can cut it in segments, and if you hold one piece of solder wire of 5 millimetres diameter in hand, you would still think that it is solder strip, but as for solder wire in reels, in the trade we call it solder wire. Well, instructors didn't write the handbook, but instructors all understood that.

Q. In paragraph 8 of your statement, you mentioned that in

the courses, you would tell students that soldering materials should be lead-free. Was it included in the handbook that you should tell students that?

A. Well, the handbook only stated solder strips, but our understanding was that lead-free solder should be used for fresh water supply, and instructors all had certain years of experience, and all instructors were licensed in the CIC, so we would transfer our knowledge to students.

Q. So you personally would also tell students that leaded solder materials should not be used for fresh water supply systems. So, throughout your 15 years as instructor, you would tell students on every course?

A. Right. In teaching the course, I would tell students that.

Q. Did you know whether other instructors would tell the same to students?

A. According to my observation, I worked in the Sheung Shui Centre. In the same workshop there were four instructors, and according to my observation they used the same type of solder material for teaching, and sometimes I would also hear colleagues mentioning this, but perhaps not all of them.

MS CHOW: I have no further questions.

Cross-examination by MR SHIEH

MR SHIEH: Mr Li, your witness statement comes with an annex which is a DVD demonstrating different methods of jointing pipes. We have arranged for the video clips to be played. This will be followed by some questions for you.

VIDEO DEMONSTRATING COMPRESSION JOINTING:

"After cutting the pipe, we need to open this component. There is this ring which is used to fix the pipe's angle and prevent leakage. I will just put some adhesive tape on it first and then I will put this ring here. As for how deep it should go, I will use this component to press it a bit to see if it moves. Then I will put adhesive tape at the opening, just circle it two or three times. Then I will press it here and then fasten it with my hand, and then the other end, the same ring.

If you know the depth, you don't need to test it with the component again, just put three rounds of tape here and press it, and then again fasten it here. After it's fastened, you put it against the wall, fasten it a bit, and then, for compression, you need to use this tool to fix it. Then you adjust the spanner to the correct size. After adjusting it, then you hold this with one hand and fasten it with the other hand. Once, twice. Then this side. We can fasten this side a bit

more.

All right. Now the jointing is done. The joint would be fixed and there won't be water leakage."

That's the end of the demonstration.

VIDEO DEMONSTRATING PRESS-FIT JOINTING:

"Now we are going to demonstrate the joints by pressing. Let me first take out the elbow. Let's say if we want to have a length of 6 inches, let's take the measurement, and then 6 inches, if the length is fixed we can then measure the pipe.

Once the pipe is cut, we push the pipe all the way into the elbow, and then we measure whether it is the correct length. All right, correct. Then we place it flat on the surface and we put the other component in. Then we need to mark the depth at the opening of the elbows, and also we need to put a mark here to show that it's perpendicular.

Now we can start the jointing. We take the compression machine and apply it to the joint. So you need to adjust to the markings that we made just now. Then we can start the compression. So you just need to press the button. After the joint made, the machine will stop automatically.

Now you need to adjust on the other end, adjust the markings, and you will just press the button. After it

stops, the joint is good."

That concludes the compression joint method. That's complete.

VIDEO DEMONSTRATING JOINTING WITH SOLDER WIRE:

"Today, we will demonstrate soldering. First of all, you have to cut the pipes to the required length, and then we take the component. We need to polish it. We need to sand it down. We sand the other end as well. After we have sanded the component, we have to sand the pipes. We have to be careful not to dirty the pipe. We see that after sanding, we can see the difference in colour, after sanding.

First, when we conduct soldering, we have to first wear our safety gloves, we have to wear our safety goggles. Then we put the pipe in our vice. We apply solder flux. Then we need to prepare our solder wire. We need a rag. (Demonstrating).

We do the same for the second pipe. We apply solder wire. (Demonstrating).

After we have wiped off the excess, the next step is to do the jointing, so we have to repeat the sanding process. We have to sand it down.

After sanding, we apply solder flux again. Then we apply solder flux to the component. Then we attach the component to the pipe and we have to sand the other

pipe, and apply solder flux and attach the other pipe. Then we have to apply solder. (Demonstrating).

Then we take a wet cloth. If we don't want to use the wet cloth; we just let it cool down naturally. It's soldered. Then we can wipe off the excess.

So the whole soldering joint is done, and you can see there's solder at the joint."

VIDEO DEMONSTRATING COPPER TUBE SOLDERING:

"Today we are going to talk about copper tube soldering. We have the copper tubes. They are already cut to the required length. You have to note that the component, does it have solder? If it has solder inside, if it's smooth, then we can start.

First, we take the sandpaper, and we have to sand the component. We sand the connecting joint inside. There is some oxidation there and that would interfere with the solder, so we need to sand it down first. Then we sand the other end. So when you do soldering, you have to seal the whole joint.

After sanding, we can also sand the tube, the pipe. We also sand down the oxidised part. After sanding, you don't want to leave it on the ground; you need to place it somewhere clean.

After sanding, you will see the oxidised part and the sanded-down part, they are a different colour.

Then we can apply the solder flux. The solder flux is a cleaning agent, so you just need to apply it to the joint areas, apply it to the inside.

After applying the flux, you put this in and then you twist it, to make sure that it's all in, and then apply to the other side, then turn it, to make sure that it has gone all in.

We begin to joint the pipe. Just fix it here first and then we should have ready the Powerflow Flux solder wire. Then, as a safety measure, put on the goggles and gloves.

We have to heat both sides. Watch out for any overflow of solder. You will see some silverish material coming out. We see some silverish material coming out. When it's all come out, it's done. For the upper part, no component is required, no further heating is required, because it has been preheated. Just heat this part up a bit.

Notice the silverish material coming out from the connecting joint, and then it's done. Don't rush to cool it down with water, because the tin component may change. Let it dry naturally, let it cool down naturally.

It has cooled down, and then we clean the flux. So you see that the connecting joint is ready. The

silverish part, if you can see that, then the whole step is completed."

So, in the four video clips, it was you?

A. Right.

Q. I need to clarify four methods. The first one doesn't require soldering materials?

A. It's called compression joint, compression.

Q. The first part?

A. Yes, to press it with a wrench.

Q. The second method, isn't the second one pressing?

A. It's another kind of pressing, jointing by pressing.

Q. For the first two methods, no solder material is required?

A. Right. It's mechanical compression, to make sure that the connecting joints will not leak water.

Q. So for the connecting part there won't be any solder materials?

A. Right.

Q. What about the third method? You use solder wire in a reel, and you melt the solder wire. We saw what happened just now. You didn't heat the wire but you heated the pipe, and then you tried the solder wire on the pipe. If it's hot enough, then it will gradually melt?

A. (Nodded head).

Q. In the process, the solder materials would become liquid; it will seep in?

A. Do you mean when it's applied onto the pipe?

Q. Yes?

A. You can see that it has already melted onto the surface of the pipe.

Q. Yes, but it could seep into the void between the elbow and the pipe?

A. You mean towards the end of the process? Yes, when I heat the pipe. Well, that depends on the skill --

Q. As we have heard, lead is found in drinking water because leaded material was used. From a layman's point of view, for lead to seep into water, it must be the case that the solder materials had seeped into the interior of the pipes for it to be in contact with drinking water?

A. Well, for solder materials to be applied, it would first come into contact with the surface. There is a connecting part for the elbow as well as for the pipe. If you didn't apply too much in, basically the seepage would stop. But if you continue to heat it up and apply solder wire, then of course part of the solder materials would overflow to the outside as well as the inside.

Q. So the question is this. Even if leaded material was applied, it also had to do with the craftsmanship? It

didn't necessarily mean that lead would seep into water?

A. But if we have good craftsmanship, the contact surface would be smaller.

Q. So if the craftsmanship is good, then there wouldn't be a large amount of solder materials entering the interior of the pipe, causing lead to leach into water.

A. (Chinese spoken).

Q. So did you instruct candidates not to use excessive solder?

A. Right, we did, because we needed to demonstrate during the course -- as we demonstrated, like what's shown in the video, we would give instruction as we demonstrated. If we saw students applying too much solder strips or wire or heating the pipe too much, we would correct them.

Q. But if they apply too much indefinitely, the other side of thing is there won't be sufficient solder?

A. That has to do with the confidence of students. You can see in the fourth video, I did not apply solder material, you can see, because it's already in the elbow.

Q. For the third video, any solder material in the elbow?

A. No. That is why I needed to apply solder wire.

Q. You just used the term --

A. Well, as taught by my master, it's called tin component.

That is, you heat the pipe and you apply tin or solder material first. If you heat it from the outside and then you allow solder material to seep in, that would very much depend on the workmanship, to see if the seepage would be even.

As for the CIC, we would ask students to use this fitting with solder, because on the contact surface of the component, there would be solder material ready. So we just heat it up a bit and add a little bit and the jointing can be done.

Q. Let's not talk about the fourth method. The third method -- in the third method, the elbow doesn't contain any solder materials, so the method is for you to push the pipe in and apply the solder material externally.

As for the other method, you mean you sand the surface of the elbow and then you heat it and apply solder material first? By then, the solder material would be fixed onto the end of the elbow. Then, after you insert the pipe into the elbow, there would already be a layer of solder inside. So when you apply an extra layer outside, the solder material inside, the first layer, would melt at the same time.

A. But I would want it to melt.

Q. You already apply the first layer inside, so when you apply the second layer, you don't need to apply too much

and it will close up the gap?

A. (Chinese spoken).

Q. (Chinese spoken).

A. Right.

Q. That's the trade jargon, yes.

A. We call it putting a layer of solder in.

Q. So that's the jargon. That is to say you grab a layer of solder at the end of the elbow.

A. Yes.

Q. The fourth method is using an elbow with solder inside, which can be purchased from a store. So is there any guarantee that the leaded elbow would be lead-free -- I mean the elbow would be lead-free, or would you specify -- you wouldn't specify that the elbow should be lead-free?

A. We just check the brand and see if we have confidence in it. Say if we buy a UK brand, we are pretty sure that it would be lead-free, but we won't take it to undergo any tests and we don't have the means to test for the presence of lead in elbows.

Q. Because we asked those masters what would be used when they underwent the trade test and they would use the elbow with solder inside, but you cannot guarantee that the solder inside would be lead-free. So, if you don't specify the brand, if you just ask for an elbow with

integral solder, then you may be given one with lead?

A. Then this I cannot guarantee.

Q. In your witness statement, you said in 1981 you completed a basic craft course.

A. I studied the basic craft course offered by CITA.

Q. Is it the same as the semi-skilled worker course?

A. The training course content was the same, but it's not really a course with a test.

Q. Now, you underwent the test then, in 1981, and as a result what qualification did you get?

A. I obtained a certificate, after going through a one-year course of CITA.

Q. Did you have a semi-skilled worker qualification then?

A. No. The trade test system started only in 1995.

Q. Well, in 1989 you obtained another qualification, grade I licensed plumber, 1989. You obtained a qualification of grade I licensed plumber. At that time, the system was that the licence was required by the WSD. There was no category or no grading.

A. No. As I recall, there were two grades, grade I and grade II licensed plumbers.

Q. You were a grade I licensed plumber, and as I understand, in the 1990s, the grading system was abolished. There was only one grade of licensed plumber?

A. I am not sure when it was abolished, but usually one would obtain the grade I right away, because grade I licensed plumber could apply for water meter, but not grade II.

Q. So can I say in general that when you obtained the grade I LP back then, it's equivalent to the current LP? So the grade II could not sign off?

A. I'm not sure. I never took the grade II licence.

Q. We have to refer to the legislation. I just wanted to ask if you were aware of the licensing regime.

So, starting from 1996, you started teaching in CITA?

A. Yes.

Q. Just now you said that when you taught, you had introduced solder strip and solder wire and the differences between the two. You had also mentioned that solder strip did not necessarily have lead but there was a high chance of it containing lead. But when you taught soldering, you said you would use lead-free solder wire, this roll (indicating).

So when we talk about lead-free solder, do you always use FRY?

A. I cannot confirm that it's a certain brand.

Q. You said it's a 5 millimetre diameter wire?

A. Yes, that's the one.

Q. I would like to look at some teaching material with you. Please refer to X1, pages 71 and 72. This dates back to 2001, 2002, a long time ago, and it was teaching material.

If you want to look into the details, it's on page 11 of this bundle. It's 2001-2002 one-year basic craft course teaching material."

Going back to page 71, here we talk about soldering. Basically, it deals -- it's of a technical nature.

Page 72, "Copper pipes". It says:

"Sometimes you can use a direct current arc welding machine and you can also use solder wire, solder strip, solder elbow."

A. Yes.

Q. So I want to confirm with you -- in the industry, we call this solder wire?

A. Well, my personal understanding, they come in one roll, so it's a solder wire. But some colleagues, it's not convenient to work with a whole roll, so they might cut off a foot or two and they would also call that a strip.

Q. So are you telling me that in the industry there isn't a standard practice or a custom, whether it's -- there isn't a standard practice of calling a certain thing solder wire?

A. It's based on personal observation.

Q. So, in the industry, when you just describe it verbally, we don't know -- we are not sure what you are talking about. So you have told us that when it comes in a roll, it's called solder wire, but when they work, it's out of convenience, they would cut a foot-long strip or two foot-long strips, and we would call those solder strips.

Have you seen this long -- we won't mention the brand name, but it's thicker? (Indicating).

A. I have seen these. You can purchase them at hardware stores.

Q. What do you call these then?

A. We call these solder strips.

Q. So the thin wire, it's called a solder wire, the long strip, you call that a strip?

A. Yes, you can say so, but there are some workers outside, they will take the solder wire and cut it into strips. As I said just now, it's a personal habit; they would call that solder strip as well. It's not based on whether it contains lead or not.

Q. So some people prefer to call it solder wire, whether it comes in a roll, you cut it into strips. But some people will call -- when it's on a roll, they will call it wire, and when it's cut into strips, they call it strips. So there isn't fixed terminology, as far as you

know?

A. Yes.

Q. So when you were introduced to this different material in your course or workshop, in your witness statement you said you would introduce solder strip and solder wire.

A. For the solder strip, it's about 200 mm length. It's a solid chunk, strip and it also has the markings saying 40-60.

Q. (Chinese spoken).

A. We are not talking about this one. The witness statement doesn't refer to that. It's about 200 millimetres long. It's cylindrical. It's silver. And there are some markings.

Q. And the marking is 40-60, so it's 40 per cent lead?

A. Yes.

Q. So it's not the WL50 brand.

A. Right.

Q. So you are telling the students, "I call this solder strip", but when you introduce it, the focus is not whether it's called strip or wire, it's whether it contains lead or not.

A. (Chinese spoken).

Q. So you don't tell the difference in terminology. The importance is what content it has.

A. Right.

Q. So, when you introduce solder wire to your students, you refer to this roll?

A. Yes.

Q. How do you differentiate? Is it differentiated by brand name or by its appearance, or do you just tell them to remember there's lead-free material and leaded material?

A. I tell them there are some materials that contain lead, and some are lead-free, and I tell them to use the lead-free. So I'll tell them this strip contain lead and you shouldn't use it in a fresh water supply.

Q. So you showed them the strips. But then just now you said that when they come in strips, they are not necessarily leaded. When you take the roll and cut it into strips, you also call it strips?

A. We only have two types of material in the course and you tell --

Q. So when it comes straight out of the factory floor, straight --

A. No. The one in your hand, it says lead-free. It's for fresh water plumbing system. We have another material at the workshop. It says 40-60. That contains lead. That should not be used in the fresh water system.

CHAIRMAN: So where is the 40-60 solder material applied?

A. It's not used in the system. In our training centre, in

the plumbing industry, plumbers also work with zinc. They bend the zinc. For example, when you make a funnel, you put kerosene, you need to pour kerosene, you need to use a funnel. So after you have bent the material, it seeps, so in the process you need to apply solder to connect, and we will use the 40-60 material.

CHAIRMAN: So is this worked done by a plumber?

A. Yes. During our apprentice years we --

MR SHIEH: So that work is included?

A. Our teachers taught us that, so we will teach our students as well.

CHAIRMAN: So you are saying there are many applications for soldering material; it depends what your application is?

A. It's not necessarily for fresh water supply.

CHAIRMAN: If you do fresh water supply work, it has to be lead-free.

Just now Mr Shieh asked, so an apprentice, when they go to a construction site, the solder material supplied by the boss comes in strips. There's no indentation or marking or brand name, so how would they differentiate?

A. They can't differentiate. If you give a worker two pieces of material of the same size or shape -- you and I cannot differentiate visually, if they come in the same shape and size. We have to rely on fast test methods or mass spectrogram.

Q. So the plumber, even if they have a skilled licence, they go to the construction site, their boss gave them a bunch of material, it's cut out in strips, and it might not be solder wire or solder strips. It might have come in solder wire and the boss had just prepared it for them and cut it into strips. It's not his place to ask whether it's leaded or lead-free. But when you taught them they had to use leaded material or lead-free material, it was only when they were in a procurement position where they would have some input. So in the future, if they were to do procurement, they could procure lead-free material. So when you taught them whether it was leaded or lead-free you weren't giving specific examples of shape and size?

A. It was just that when you are working on fresh water supply, you cannot use leaded solder.

Q. Okay. I understand. So when you look at page 72, sometimes copper pipes also use solder for jointing. So when Ms Chow asked you, the person who wrote the material wasn't actually the one teaching the material, so the solder strip is just a generic term. So the straight material, you call it solder strip, and the one that comes in a roll you call solder wire?

A. I think he was referring to lead-free solder, but it's just when he wrote the material, it came out at solder

strip. Our students also understand what he is referring to.

Q. We have heard evidence. Some witnesses say when they order material, when they want lead-free, they call it solder wire.

A. No, you can't do that. We have to -- in the CIC, we have to specify lead-free solder wire. So the procurement side might have a spare copy, we will show them that we want to purchase this size, this brand name.

Q. When you teach them, you teach them that's what they should do?

A. The students?

Q. Yes.

A. I didn't go into such depth and detail.

Q. When you said -- when you procure, when we work, we show pictures --

A. We are afraid procurement will purchase the wrong material. We don't want to send the stuff back and have it delivered again.

Q. We have heard evidence in the construction site, the site supervisors, they order solder strips that comes in strips and solder wire comes in rolls. So when they send the material request forms, they just refer to strips and wires. And the office supplies what they ask

for, so the ones that come in rolls are solder wire and the ones that come in strips are -- but when you teach the workers, did you teach them procurement measures?

A. We don't teach them in such great detail. We focus on solder wire, we tell them we purchased a certain length, how much material they need, how many metres they need, and you have to divide by the factor and then you know how much material to purchase. But we don't go into the detail such as you have to order a roll of solder wire.

Q. So the focus -- you are just saying that you have to call the material lead-free.

That's the 2001-2002 syllabus. Sometimes the syllabus may be one thing; the instructor's verbal instructions may be another. As you said just now, the syllabus might be written this way, and then when you are giving instructions, you might also teach students about lead-free solder.

After the lead in water incident, you can see that the syllabus has changed. I can show you the revised syllabus. It's X3, pages 2020 and 2021.

On page 2021, on the left-hand side, let me show you what it is. This is for the September 2015 course, the basic craft course, the one for which you were the instructor.

A. No.

Q. Sorry, you are now the trade test superintendent. But you should know about the syllabus?

A. I am no longer an instructor so I'm not required to know about the syllabus. But I knew about the change in the syllabus with the words "lead-free" added, because Mr Leung, our chief superintendent, is also an engineer, and he would receive government notices and circulars from professional organisations. After learning this incident, Mr Leung, the chief superintendent, was very concerned about it. He asked colleagues to revise the syllabus, to make sure that we tell students about this. Although we would tell students that, but we want to make sure that it's in writing.

Q. Page 2148. You talked about professionals receiving circulars like this.

A. Yes.

Q. So you didn't revise the syllabus, but you knew that the syllabus had been changed as a result of the WSD's requirement?

A. Yes, because an email was sent to all colleagues.

Q. Then page 2021, "Solder wire used in jointing copper pipes should be lead-free". Here, it says:

"The solder material for jointing copper pipes, solder wire (lead-free), and then a certificate showing that the soldering material is lead-free, should comply

with the WSD standard and approval should be given before it is used. The connecting joints, lead-free solder should be used for jointing copper pipes."

You see the three lines, and then solder wire. I mean, here, the solder material is described as solder wire. Then, at the end of the page, "Copper pipes", sometimes copper pipes can be jointed by solder strips, applying solder material inside or outside. This is the part that was already there in the previous syllabus.

So it seems to me that even in your syllabus, you already had this distinction, solder wire should be lead-free, whereas there is another kind of material called solder strips.

So can I say that the two differ in leaded and lead-free?

A. No. I would say that the colleague in charge of revising the syllabus has omitted this part. At the same time the colleague may not have been aware of the difference of solder wire and solder strips being lead-free and leaded.

Q. Because over the past two weeks, a lot of workers have told us that the terms "solder wire" and "solder strips" would be used in procurement and in the actual work, so I would have this impression that even for instructors in a plumbing course, there is also a difference between

lead-free solder wire and solder strip?

A. Well, the colleague in charge of this syllabus has retired, and the colleague taking over the revision work in 2015 perhaps did not check the details down there, in relation to solder wire and solder strip. I don't think the colleague would define the content being leaded or lead-free, because it is in the form of a wire or a strip.

Q. In paragraph 8 of your statement, you mention that when you were the instructor, you would tell students that for fresh water supply, lead-free should be used. But you did not teach students the risk of using plumbing materials that contain lead, since you were not medically trained.

But judging by common sense, when I tell you not to use certain material in your work, then probably there is something wrong with the material. So when you taught students not to use leaded material, didn't you in passing tell students what would happen if leaded material was used?

A. I haven't seen anyone drinking a large amount of lead-contaminated water and its effect, so I dare not teach about that part.

Q. But did you consider why leaded material should not be used?

A. No, I didn't, because before working as an instructor in CITA, I practised outside for ten-odd years, and often I saw that when the solder material was applied to fresh water supply system, lead-free solder would be applied. So I reckon that leaded material would affect the fresh water supply system, but I have no medical knowledge as to the effect of drinking lead-contaminated water, whether one would be affected.

CHAIRMAN: So you know that it's not good to your health but you don't know the exact effect?

A. Yes.

MR SHIEH: Do you know that there is a legal requirement, a contractual requirement, prohibiting the use of leaded material?

A. When I was an apprentice, master, he told me that it is stipulated in a certain standard, but I wasn't told specifically what standard.

Q. But in practice, you wouldn't consider the details. Whether it's a legal or a contractual requirement, the practice all along has been that leaded material should not be used.

CHAIRMAN: So the question for you is this. When you told your students, you told the students, "Right, lead-free should be used". But how could you tell them that, say, this one is lead-free, this one is not lead-free?

A. Well, check the label. When we bought the reels of solder, it's written "lead-free". So I can just say that when we procure the material, it was written "lead-free".

CHAIRMAN: But your students might not have any idea because of their experience. Some might have just finished secondary school; some might have just come from the mainland, they might not have a good level of English. So how could you tell them, at the same time when lead-free should be used, how to distinguish?

A. We talked about two different types. One is solder wire in reels and it's written "lead-free".

CHAIRMAN: All right. I know, you know, because you see the label "lead-free" on it.

A. Right.

CHAIRMAN: Let's say if I just ask anybody in the street, then the person may not know, so how can you send this message to your students?

A. The message to students is that leaded material should not be used in the fresh water supply system.

There are only two things available which can be shown to students, but if you change the form of these two materials, if you remove the label to trick students, that's not what we would deliberately do.

CHAIRMAN: Because I checked from the suppliers' brochures

that for solder materials, be it leaded or lead-free, the solder materials can come in different shapes or different sizes. It may come in chunks.

A. Let's say if I buy a watch from the mainland, then if you prefer Nike, I can put that label on, and if you want Adidas, I can apply that label in five minutes. So I understand what you mean.

But from the perspective of a worker, or even as experienced masters working in the trade for many years, if you want to deliberately conceal the label --

CHAIRMAN: Let's not talk about fakes ones. Let's talk about the genuine ones. Maybe it's too cheap to make fake goods. For genuine ones, how can you tell students that you should use this but not that? For lead-free, here it's written "lead" and then "free", and then, for the other type, there's a red label, "containing lead". How did you tell the students?

A. Let me repeat. For solder strips, it contains lead. For solder wire, it's lead-free. That's all I could tell my students. If you change the form or shape -- and I can't imagine anyone changing the form or shape or switching labels --

MR SHIEH: Putting this aside, you cannot rule out the possibility that some leaded material may be in the form of solder wire, because it just so happened that you use

lead-free solder wire in reels?

A. Well, when we taught in the course, back then we did not have the spectrometer or we did not have the 3M rapid test for lead content.

Q. So the focus of your instruction was knowledge, so it's a matter of faith for them?

A. Basically, I just taught them that leaded material should not be used.

COMMISSIONER LAI: But in fact, when you apply or when you use material, you could distinguish it?

A. If you are really skilled, you can see that for the leaded one, it's more adhesive. For the lead-free solder, 100 per cent solder, it will melt very quickly. It flows like a liquid. Now, if you use the same torch to melt lead-free solder wire, it melts very quickly. For leaded solder material, it's more sticky; it can form a shape more easily.

MR SHIEH: So it's thicker?

A. Yes.

Q. For the lead-free solder wire, it's more watery?

A. It melts easily and it's very difficult to form a shape.

COMMISSIONER LAI: But the two have different melting points.

A. Now, I don't know the actual melting points, but having been in the trade for so many years, when you hold it in

the hand and heat it, you would have a sense of what it is.

MR SHIEH: Because for the leaded material, it has a lower melting point; it melts more easily?

A. I haven't considered that.

Q. So, for you, it's not the difference in terms of melting point but the status, one being more watery, one being thicker. How about convenience? Which one is better?

A. I don't mind either, because from some --

Q. We understand that because of a lower melting point, the leaded material melts more easily and it can be applied more quickly. As for solder wire, which is lead-free, it takes longer to melt because of the higher melting point?

A. Actually, to solder a joint is very quick.

Q. Just now you said that characteristic, one is more viscous and one is more fluid -- you did not teach that in your class?

A. No. We have done many years of soldering and we have accumulated that experience, and we do not mention that in teaching.

Q. You mentioned that they shouldn't use leaded solder in the fresh water supply, but how they applied that knowledge, that would be up to their judgment.

And the procuring agent, if they knew what they were

doing, they would purchase lead-free?

A. Sorry to interrupt. When students graduate and work, they are lucky to find a job, so it's very hard to resist what their bosses give them, what material their bosses give them. As a student, you have found a job. If you raise objections here and there, then you might not have a job the next day.

Q. If you say, "I'm not going to use leaded solder" -- the student is not going to say that on the job, and he might think, "This material is very viscous, it might contain lead", and he might say, "What can I do?", and he has to reluctantly continue.

A. I have never heard students reflect that.

Q. But just now you said that students will have to use whatever material their boss has given them?

A. Well, the circumstances force them.

Q. And you didn't teach them in such great detail, there are moral ethics and what --

A. What we told them is that if they become a boss, they need to purchase lead-free, or if they have a choice, they should choose lead-free solder.

Q. Different soldering methods that we saw just now -- I would like you to talk about the second type, the compression one, with the machine. It relies on mechanical pressure?

A. There's still an O ring inside. There's a plastic ring. That component, it's been used in Europe for many years, but it's only been introduced in Hong Kong recently. It's more expensive and the machine is also expensive. That machine costs $20,000. There's also a life cycle. It can only be used so many times and then it has to be returned back to the factory for recalibrating. So it's not that common in the market.

Q. For our comprehensive understanding, we heard that when you connect these joints, you either use a solder elbow that contains solder, or you do soldering with your strips of solder wire, or you have compression joints. The first type, where you tighten it by hand?

A. There are other methods. You can use oxyacetylene for silver brazing, and we also have copper soldering.

Q. But in terms of efficacy, out of the different methods, whether it's compression, silver brazing or soldering, or the first method, where you tightened it by hand, which outcome is better, or are they all just as good?

A. Well, even one has its own advantages. There are also pros and cons to each method.

The first one is called a compression joint. You need a vice to tighten the joint, and some workers are not that convenient, so sometimes the soldering would be more convenient. The advantage is that you don't need

Powerflux, you don't need solder flux, you don't need solder, and you also need to clean the pipes. There's not too many impurities in the compression method. So that is the compression.

With soldering, after you do the sanding, you apply the flux, and as long as the torch can apply the heat, you can complete the job. You don't need to exert strength. From my own experience, I have done government buildings. For senior civil servant quarters, we used the compression joint.

But there's a problem compared to soldering. Before I apply the solder, and then if you apply cement, in the compression joint, it might loosen the mold, because of vibrations that if you use solder then would occur, because once you have soldered it, even if you hammered, it would deform as a whole piece.

Well, they have not become one piece. There is a medium, the solder that connects the two components. The tools used are different. In a construction site, a lot of times we use solder, because we have oxyacetylene torches. But for a maintenance worker at a domestic unit, they won't have a torch with them, they might only have two spanners; they might only have a compression joint.

Q. One more question. Silver brazing. Just now, we heard

that silver brazing is more expensive.

A. The skills are more complex.

Q. The skills are more complex and the materials are also more expensive.

A. Put it this way: the silver brazing elbow is cheaper. They don't need to have a lining; it's relatively cheaper. But the labour is more expensive and they have to use an oxyacetylene torch. The oxyacetylene has to be delivered to the site. The worker also needs to have a welding licence.

COMMISSIONER LAI: Why is the skill level higher?

A. Because they have to use oxyacetylene. The workers, some people don't even know how to ignite the torch and adjust the flame. They are reluctant to use oxyacetylene.

But for LPG torch, you just need a lighter to ignite it.

MR SHIEH: So, in your demonstration just now, that was an LPG torch?

A. It's convenient. You can see it's very small. It's very mobile. You can use it on a ladder. But with that oxyacetylene torch, I need to bring the tank, I need to attach a hose. So the work and skill levels required are much higher. There's also legal regulation: there cannot be more than two oxyacetylene tanks in

a premises.

Q. Last question. Silver brazing. We heard that it cannot be used on pipes with a diameter that's too small.

A. I have never heard of that.

Q. We heard that it's only for large diameters.

A. No. In the construction sites we encounter, some sites, for example, hotels, they would apply silver brazing for small pipes, for large or small.

Q. We heard it's also done the same with private buildings?

A. Yes. So for more expensive private buildings, they will use this method.

Q. Why? Why do they choose that method?

A. One reason -- in our water supply system, we have hot water/cold water. So for expensive private buildings, hospitals or hotels, the water temperature is more than 100 degrees. So if they use solder jointing, if you add to the internal pressure, the water pressure, the temperature, if the soldering technique is not good, it would leak or the pipe might burst.

I have also heard workers say that for a certain private estate, they had inlaid pipes using soldering. They would test it with cold water. But when the occupation permit is received, and when they supply hot water, then it starts leaking, so they had to re-install the plumbing. So the real estate developers decided to

use a more expensive method. It's also a mark of quality, and you know that word-of-mouth reputation is very important. If they have to do re-plumbing, then it would affect their reputation, so some developers would choose more expensive silver brazing.

Q. We also heard some workers say that leaded solder is for small diameter pipes and lead-free solder is for large diameter pipes.

A. I have never heard of that.

Q. Whether you use leaded or lead-free solder, it depends on the diameter of the pipe?

A. I never heard of that.

MR SHIEH: Chairman, I do not have any other questions, and it's almost 4.30.

CHAIRMAN: So you want to go back and think whether you have further questions?

MR SHIEH: Yes, correct.

CHAIRMAN: So let's continue tomorrow. Does anybody else have questions?

MS CHOW: I will have some questions.

CHAIRMAN: So we will continue tomorrow.

The witness, Mr Li, could you return at 10 o'clock?

WITNESS: Okay.

CHAIRMAN: So let's adjourn here. Thank you.

(4.27 pm)

(The hearing adjourned until 10.00 am the following day)

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