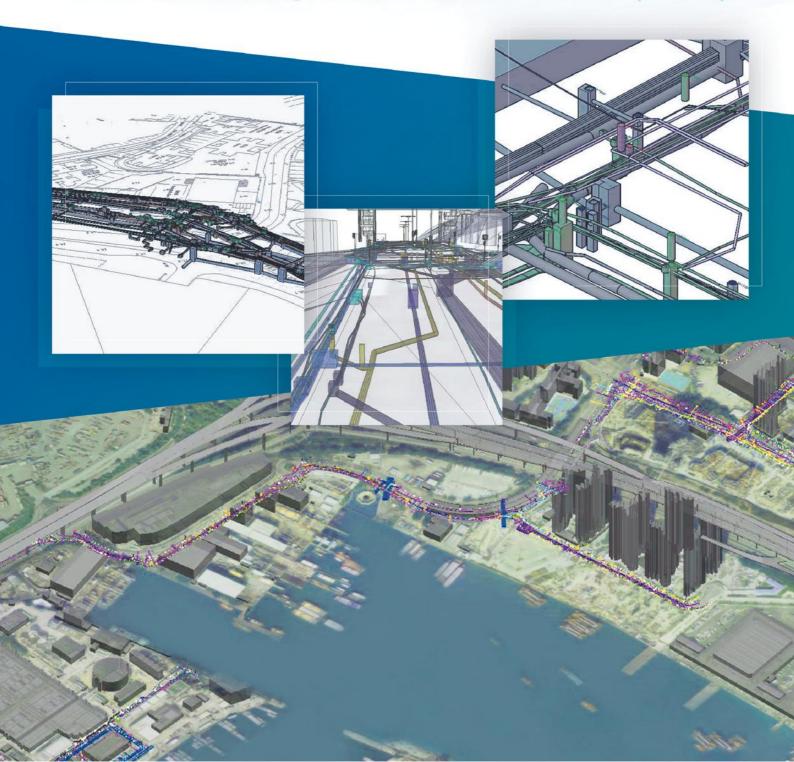






## 你我攜手共建更好明天

We Strive For Enhancing Professional Standards in the Utility Industry



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香港管後專業學會成立二十周年監 國際管錢專業學會邁向五周年誌慶

財政司司長陳茂波



WITH SUPPORT FROM THE COUNCIL AND MEMBERS, I HAVE NO DOUBT THAT HKIUS WOULD BE EVER-EVOLVING AND EXCELLING IN TIME.



### 管綫專業, 你我攜手共建更好明天

WE STRIVE FOR ENHANCING PROFESSIONAL STANDARDS IN THE UTILITY INDUSTRY!

## MESSAGEROM PRESIDENT

This is an immense pleasure to be elected as the President of Hong Kong Institute of Utility Specialists for Session 2021-23.

I am delighted and humble to be entrusted with the leadership and the enormous responsibility entailed. With support from the Council and Members, I have no doubt that HKIUS would be everevolving and excelling in time.

Our works are being impacted severely by COVID-19, but we could see a light in the darkness. During the pandemic, we are proud that HKIUS members showed their adaptability to cope with the toughest time by relying on digital transformation to their underground utility works.

I as the new President of HKIUS, am committed to continuing to promote the application of innovative technology amongst utility-related companies in the coming years, in order to smoothen operational flow and improve data accuracy for the entire industry. It's time for us to turn a new page!

Another pinned task on the list is to continue to uphold our survey standards. It is accomplished by refinement of publications. Thanks of to the paramount efforts contributed by former presidents and council members in years ago, a series of code of practices such particular specifications, as working procedures, method statements were released to steer the utilities companies to the right track of professionalism.

### 管綫專業, 你我攜手共建更好明天

WE STRIVE FOR ENHANCING PROFESSIONAL STANDARDS IN THE UTILITY INDUSTRY!

## MESSAGEROM PRESIDENT

These materials have been served as remarkable references to the utility industry. In the coming two years, I will lead the Training and Accreditation Committee and work jointly with our RTO – Utility Training Institute, Hong Kong Polytechnic University (PolyU), IVE etc to advance the standards to better suit into the changing environment.

promotion Constant utility of safety has been our first and foremost mission. At the period of my appointment, I am pleased to sustain it by hosting a spectrum of seminars. conferences activities such as Utility Safety -Slogan, Drawing and Practical Competitions 2020-21. and ICUMAS in Malaysia.

To help our industry to attain a new height, utility specialists in Hong Kong are encouraged to seize the opportunities exposed in Greater Bay Area. HKIUS will keep eyes on the newest development in Greater Bay Area and will arrange visits, seminars etc. to help our members to gain insights.

I am honored to lead such a wellestablished and widely recognized institute. I am enthusiastic to work with all of you in the coming two years. Thank you.



In late 1995, soon after the Kwun Lung Lau Event, Housing Department awarded a pilot contract for the inspection of Buried Water Carrying Services (BWCS) which was completed under the supervision of King WONG as Site agent and Deputy Contract Manager.

In early 2000-2002, Ir Dr. King WONG steered to set up a meeting to discuss the issues in utility survey industry including setting up of standard requirements, training, specifications, report formats, etc.

In 2000, a training course was introduced to Hong Kong by UTI - "Utility Training Institute" (管綫學院), for standard coding of Conduit Condition Evaluation (CCE-CCTV & ME) by using man entry and non-man entry methods.

In 2002, HKIUS was established by the Steering Committee of 10 members from 8 companies chaired by Ir Dr. King WONG and this formed the core and ascertained the establishment of the Institute. HKIUS was firstly named "Hong Kong Institution Sub-Surface Surveying & Surveyor (HKISSS)", in early 2003, it was registered under the Hong Kong Police Force as a society, formally as "Hong Kong Institution of Utility Surveyors" (香港地下管綫測量師學會) and the direction of the institute were set at the same time.

At the same year, Ir Dr. King WONG completed the study on "the Strategy Planning Changes for Companies Working on Leakage Detection Contracts Affecting Slopes" which confirmed the need of the institute. UTI invited the Hong Kong Polytechnic University (Poly U), to jointly organize some training course for utility surveys including CCE-CCTV & ME, MHICS, US, WLD and BWCS. The courses have received wide acceptance from government and private parties and graduates had good chances in securing a job in the industry.

On 1st April 2003, the first Executive Committee was formed and Mr. Mike ARDEN was elected as the President of HKIUS, during the time from 1st April 2003 to 31st March 2004. Mr. Zico KWOK became the acting President during 1st April 2004 to 31st March 2005 for Mr. Mike ARDEN resigned for personal issue.

In November 2003, UTI and HKIUS organized an open forum "The Public Interest in Reducing Road Opening, Safer Excavation and Better Slope Maintenance by using GIS based Utility Information Centre", chaired by Ir H.S. KWONG, GBS, JP. Over 500 people attended, they were respectively government departments, academics, consultants, contractors and supplies.

In 2004-2006, HKIUS joined as working group members for the "Code of practice on Inspection and maintenance of water carrying services affecting slopes". The COP was published by ETWB in late 2006.

CODE OF PRACTICE
ON
MONITORING AND
MAINTENANCE OF
WATER-CARRYING SERVICES
AFFECTING SLOPES

Environment, Transport and Works Bureau The Government of the Hong Kong Special Administrative Region Second Edition November 2006





#### 1st April 2005

The second Executive Committee was formed for 2005-2007 and Ir S.M. FOO was elected the President of HKIUS with Ir Damien KU and Mr. Zico KWOK as the 1st Vice President and Vice President respectively.

#### 10th September 2005

Atechnical seminar was organized by HKIUS and UTI named "Contemporary Legal Issues in the Utility Industry of Hong Kong" which attracted 300 people to attend and concerns on consequence of utility incidents was highlighted.



#### September 2005 to October 2007

With the aim to arouse the awareness of consultants, contractors, practitioners, students and the general public on safety of slopes and roadwork, especially for the best protection of Underground Utilities (Gas, Water, Power, Telecom, Drains, etc), and to promote the professional standard in the utility industry, an open competition was jointly organized by HKIUS, HKIE-SSC, HKAAST, and UTI. The competition was titled "Utilities Protection, Slope Maintenance and Work Safety in Excavation-Drawing, Slogan, Creative Writing and Practical Competitions" which attract more than 3000 people to take part in the competition.





#### **April 2007**

The Hong Kong Institution of Utility Surveyors formally changed its name to "Hong Kong Institute of Utility Specialists" (香港管綫專業學會) while its objectives, vision and mission remained unchanged.

#### 1st April 2007

The third Executive Committee was formed for 2007 - 2009. Ir Damien KU was elected as the President, the 1st Vice President by Mr. Zico KWOK and the Vice-president by Ir Jim KO.



#### September 2007

Approved by the Education Bureau, Applied Learning Course (應用學習 課程) on "Utility Profession & Applications" was jointly organized by the Department of Civil Engineering of The University of Hong Kong (H-KU-Civil) and Utility Training Institute (UTI), supported by the Department of Land Surveying and Geo-Informatics (Poly U), HKIUS HKURC - "Hong Kong Utility Research Centre" (香港管綫管理研究 中心) and other professionals was launched. With the Objectives of equipping all form 4 full-time secondary students to be qualified in the future for engineering, surveying and utility practitioners.





#### **April 2008**

Adinner was organized for celebrating the HKIUS 5th Anniversary and HKURC Inauguration. The evening gathered government officials, representatives from utility related associations and academic institutes and was successfully held with the witnesses of 12 guests of honor and over 200 other guests.

#### April 2008

HKURC was formed which aimed to study on methods, materials and survey accuracy improvements. Ir Prof. Dr. William KO was the Founding President and presented the topic "Utility Profession in the New Era" before the dinner.



#### In 2008

The BSc in Geomatics (Utility Management and Surveying) of The Hong Kong Polytechnic University was approved by the UGC (University Grants Committee) and first cohort would be received in September 2009.





#### March 2009

The First International Conference on Utility Management and Safety (ICUMAS 2009) was held from 1st to 4th March and was jointly organized by HKIUS and HKURC, while co-organized with Construction Industry Council and Department of Land Surveying and Geo-Informatics of PolyU. The overall conferences had attracted 500 participants and succeed in facilitating a platform for utility knowledge and technological exchange; meanwhile, it provided a golden opportunity for networking among the partici-The formation of IIUS was pants. suggested by speakers from overseas.



#### **April 2009**

UTI's publication Hong Kong Conduit Condition Evaluation Codes for the standardization of utility profession was published.

#### 1st April 2009

The forth Executive Committee was formed for 2009-2010. Ir Damien KU was re-elected as the President.

#### June 2009

The Utility Specialists' Resource and Technical Assessment Centre (管綫專業資源、培訓及技術評核中心) was open for offering technical assessments to non-HKIUS members, and the resource centre (with a library) was also open for members and the public with appointments. The opening was officiated by Ir C. S. WAI, Mr. C.K. AU, Ir Prof. William KO, Ir Damien KU, the Hon. M. F. LEUNG, representatives from DSD, WSD, consultants, contractors and over 100 guests.



#### September 2009

HKIUS' Registered Training Organization (RTO) UTI launched a Professional Diploma in Utility Survey and Management. At the same time, The Polytechnic University of Hong Kong launched its BSc stream in Utility Survey and Management.

#### In 2009

HKIUS started to accept application from professional members as Recognized Professional Utility Specialist (RPUS).



# 2010

#### | 1st April 2010

The fifth Executive Committee was formed for 2010-2011. Mr. Zico KWOK was elected as the President, the 1st Vice President by Ir Jim KO and the Vice-president by Mr. Stephen Mark Davies.





# 2011

#### In 2011

HKIUS modified its publication on Method Statements, Particular Specifications, Work Procedures and survey forms and funded by PSDAS, HKIUS published Pamphlets and Guidelines for all 12 disciplines.

#### March 2011

The 2nd ICUMAS was held with over 300 people attending. Ir Dr. King WONG was appointed as the convenor for IIUS formation.

#### 1st April 2011

The sixth Executive Committee was formed for 2011-2013. Mr. Zico Kwok was re-elected as the President.

## 2012

#### **June 2012**

The first batch of students of BSc stream in Utility Management and Surveying from The Polytechnic University of Hong Kong was graduated.





#### 1st April 2013

The seventh Executive Committee was formed for 2013-2015. Ir Dr. King WONG was elected as President, 1st Vice President by Ir Jim KO and Vice-president by Mr. Patrick YUEN.

At the same time, a new discipline – Building Information Modeling (BIM) for Infrastructure had been established.



#### September 2013 to March 2015

An open competition – "1Call Utility Competition 2014/15" had been held in order to promote the professional standard in the utility specialist industry and to promote to the world. This was a comprehensive competition comprising practical for open, slogan for secondary students and drawing for primary students which was arranged to further uplifting the awareness on slope safety, safe digging and better utility survey accuracy over 3,000 participated.

#### 5th September 2013

The first batch of Professional Diploma in Utility Survey and Management students graduated from UTI, the graduation ceremony was held in the HKIUS 10th Anniversary Dinner, in which Ir C.S. WAI, JP was the Guest of Honor.



In the meanwhile, in order to show the appreciation to our Past President, Ir Damien KU, HKIUS established the Ir Damien KU scholarship to commemorate Ir KU's contribution in utility industry.

#### 30th October to 1st November 2013

The 3rd ICUMAS and the 8th WCEAM was held at HKCEC with some 300 abstracts received.

#### 1st November 2013

The formation of IIUS in Hong Kong. HKIUS is in full support of the formation of IIUS (International Institute of Utility Specialists) in which Ir Dr. King WONG was appointed in ICUMAS 2011 as the convenor for its formation and IIUS had been formed on 1st November, 2013.



# 2014

#### 9th Aug 2014

A press conference was arranged between HKIUS and Hong Kong's Press to announce the current situation of our underground's world and discussed about the possibility for the similar case of gas explosion in Kaohsiung, Taiwan on 31st July 2013 would be occurred in Hong Kong.





#### In 2015

HKIUS arranged courtesy visit to several related government department such as Architectural Services Department, Buildings Department, Civil Engineering Development Department, Drainage Services Department, Highways Department, Lands Department and Water Supplies Department etc. in order to discuss improvement about the policy and works of underground utilities and engineering field.

#### 1st April 2015

The eighth Executive Committee was formed for 2015-2017. Ir Dr. King WONG was re-elected as President, 1st Vice President by Ir C.K. NG and Vice-president by Mr. Patrick YUEN.



#### 16th July 2015

HKIUS 12th Anniversary Dinner cum the award presentation of Utility Competition 2014-15 was held. With great honor of attendance by our Guest of Honor – Ir Chi-keung HON, JP, Permanent Secretary (Works) for Development, Development Bureau.

Since Aug, 2015, Sabah Surveyors Board sent the 1st batch of practitioners to Hong Kong to attend a professional training on comprehensive utility survey. Since then, total 5 batches of Malaysian came to UTI for upskill training.





# 2016

#### **31st August 2016**

HKIUS had discussed with and confirmed by Construction Industry Council that under the "Construction Workers Registration Ordinance Designated Workers for Designated Skills" and among the 139 trade divisions in the CWRO, there is no trade for operating of water jetting machines, cleaning pipelines by jetting method or installing lining into pipelines. Utility Specialists, as HKIUS mentioned in the meeting, are not required to personally carry out "construction work" thus they are outside the scope of the registration under the CWRO.

# 2017

#### 29th March 2017

HKIUS 15th Anniversary Dinner and the welcoming dinner of The 5th ICUMAS 2017 was held in Regal Kowloon Hotel by attendance of 200 guests.

#### 30th & 31st March 2017

The 5th ICUMAS 2017 on "BIM, Control & Utility Management for Smart City and The Sponge City" was officially held in Regal Kowloon Hotel by supported by 34 local and 20 non-local organizations, over 250 participants on Day 1 conference and 200 participants on Day 2 conference which also attracted over 40 distinguished local, mainland and overseas speakers from USA, UK, Israel, Malaysia & Brunei.



#### 1st April 2017

The ninth Executive Committee was formed for 2017-2019. Ir C.K. NG was elected as President, Ir Dr. Peter TSE and Ir Jim KO as Vice-President.

#### 27th - 28th November, 2018

The 6th International Conference on Utility Management & Safety (ICUMAS) and China International Underground Pipeline Exhibition & Conference 2018 (CIUP EXPO) took place in The Canton Fair Complex in Guangzhou, CHINA. The theme was "Building New with Latest Technologies (共建新市場, 共享新技術)".

At the same time, the inauguration ceremony for IIUS Committee (2019-2023) was held. Ir Prof. MA Siu-cheung, Eric, GBS, JP was elected as President and Ir. Dr. King WONG was Executive President for a 5-year term of 1st Jan2019 - 31st Dec 2023.



# 2018

#### | Since 1st December, 2018

HKIUS provided Professional Indemnity Insurance (PII) to all professional members (MHKIUS, FHKIUS, RPUS). Incidents related to surveys of the four diciplines ie. A. CCTV &ME, B. MHICS, C. CUS-PCL and D. WLDC were covered. A press conference was hosted a day before the commencement of PII.

#### November 2018

IIUS signed MOU with Indian Society for Trenchless Technology (IndSTT). It assured the mutual recognition of the endorsements issued by SUE Engineers certified by IndSTT and RPUS certified by IIUS.





#### 1st April 2019

The tenth Executive Committee was formed for 2019 - 2021. Ir C.K. NG was re-elected as the President, Ir Dr. Peter TSE as the Senior Vice-President, and Ir Prof. LOCK Fat-shing and Mr. YUE Kwok-leung, BBS, MH, JP was elected as the Vice President.

#### August 2019

BIM standards for Underground Utility is published. It's software-neutral. It's jointly developed by HKIUS and Construction Industry Council (CIC), with appropriate reference to both local and international BIM standards and practices.



#### December 2019

IIUS signed MOU with Guangzhou Panyu Polytechnic (廣州番禺職業技術學院), and agreed to set up Urban Underground Utility Industrial College (城市地下管綫產業學院) to nurture utility specialists.

#### 18th December 2019

IIUS joined the Alliance "大灣區專業知識人士聯盟". It's an alliance for Professionals & Scholars from the Guangdong, Hong Kong and Macau Greater Bay Area to advance professional knowledge.





## 2020-2022

#### 2020-2022

In view of outburst of Covid-19, the public raised a big question mark about the spread of virus through the drainage pipes. Ir Dr. King WONG, IIUS Executive President was interviewed by a wide range of media such as Phoenix TV, Metroradio, NOW TV, Cable TV etc.

#### 1st April 2021

The eleventh Executive Committee was formed for 2021 - 2023. Mr. YUE Kwok-leung, BBS, MH, JP was elected as the President, Ir Dr. Peter TSE remained as the Senior Vice-President, while Ir Prof. LOCK Fat-shing remained as the Vice President.

#### March 2022

IIUS membership network has successfully expanded to 30 cities in different countries, such as China, USA, UK, Canada, the Philippines, Malaysia etc.



#### In 2022

The 5th Conduit Condition Evaluation Codes (International Edition) and the 1st international version of manhole specifications -- Manhole Condition Evaluation Codes, accredited by HKIUS and IIUS, were published by Utility Training Institute. There are a number of significant modifications have been made referencing the feedback on the 4th edition and the latest CCTV survey for 5th CCEC.



#### Hong Kong Institute of Utility Specialists

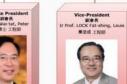


Hon. Legal Advisors 桑譽法律顧問 Mr. Tang Kai-ming, Keith 郵啟明 先生 Ir SOO K.L., Gary 蘇國良工程師 Mr. YIP Shing-hing, JP 葉成慶 先生、太平紳士

Hon. Auditor 榮譽審核會計師 Mr. Stephen Chan



2





















Hon. Fellow Ir LEE Shing-see, GBS, OBE, JP 李承仕工程等,太平師士、金繁朔星章







#### COMPANY REPRESENTATIVE

Company Name
APC Surveying & Building Limited
BUDA Engineers & Consultants Co., Limited
EGS (Asia) Limited
FORWIN Site Investigation Engineering Ltd. FORWIN Site Investigation Engineering Ltd.
Freyssinet Hong Kong Limited
Hang Tone Drainage Engineering Limited
Innopipe Engineering Limited
Jetrod Pipeline Consultant and Engineering Limited
Man Kee Engineering Co., Ltd
Patrick Yuen Underground Detection Company Limited
Sum Kee Construction Ltd
Toptime Technologies Limited
US & Associates Consulting Co., Limited
U-Tech Engineering Company Limited
UtilityINFO (ICall) Limited

CHAIRMAN OF DISCIPLINES REPRESENTATIVE

Chinese Name of Company 全管綫專業測量有限公司 沛達工程顧問有限公司 環球勘探(亞洲)有限公司 富榮探測工程有限公司 輝力香港有限公司 恆通工程有限公司 新維通工程有限公司 新維通工程有限公司 積通管道動間及公司 文配工程有限公司 玩步臻地下勘測工程有限公司 森配維持有限公司 和整料技员公司 源整期限及監理事務所有限公司 理解期限及監理事務所有限公司 申格工程有限公司

管遊狀況評價 (排水) 沙井默況評價

两小监控 斜坡管道測漏 管鏡維修(非開校工程技術報管終補) 管鏡雷建探測

管綫测量 (PCL) 漏水監控

液量監控 管遊狀況評價

链线管料管理 管綫管理 管綫項目管理 建築模擬(基建) 樓宇狀況檢測

非破壞性探測

Surname WONG HO LAM CHEUNG NG Name Chun-fai Cheuk-yin, Jack Mei-shing Chin-man Wai-lun, Ric Wai-lun, Ric Chin-pang, Duncan Pak-lun, Alan Kam-hung, Herman Kwong-man Po-tsun, Patrick Kwan-yuen, Desmond Shu-wai, Isaac King Wai-cheung, Ray Kei-hong, Victor CHAN Mr. Mr. Mr. Mr. Mr. Mr. Ir Dr. KWOK CHONG YUEN LAM YING WONG FUNG CHOW

Mr. WONG Chun-fal, MHKIUS
Ir KO Kai-man, Jim, FHKIUS
Mr. HO Cheuk-yin, Jack, MHKIUS
Mr. KWOK Kai-yip, Zico, FHKIUS
Mr. HUNG Po-lung, Ken, MHKIUS
Mr. CHAN Chin-pang, Duncan, MHKIUS
KUNG Hiu-leung, Daniel, MHKIUS
KUNG Hiu-leung, Daniel, MHKIUS
Mr. SO Sai-man, Simon, MHKIUS
Ir Dr. MG Hiu-leung, Daniel, MHKIUS
Mr. SO Sai-man, Simon, MHKIUS
Ir Dr. NG Pui-lam, MHKIUS
Ir Dr. NG Pui-lam, MHKIUS
Ir Or. NG Chun-keung, FHKIUS

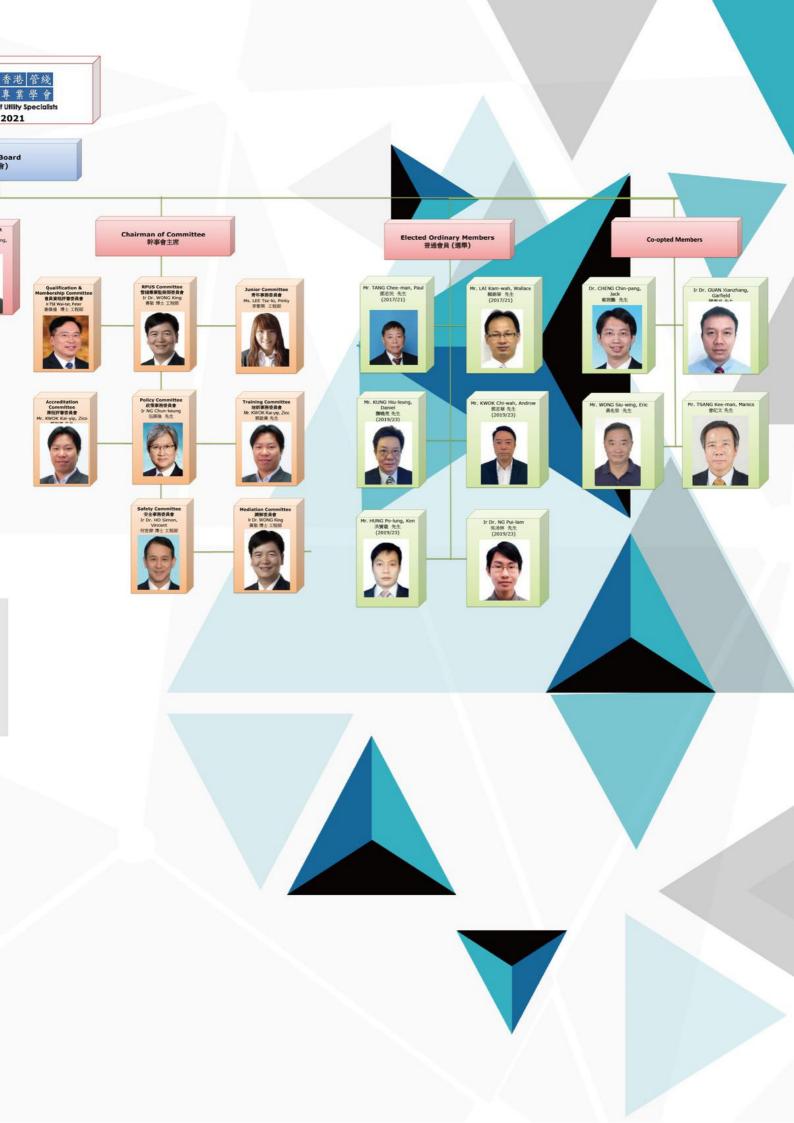
A. CCE (CCTV & ME):
B. MHICS:
C. US (PCL):
D. WLD: E. BWCS: F. PR: G. GPR: H. FLOW:

J. DM; K. UM; L. PM; M. BIM; N. BD: O. NDT: VERSION: V1.1

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LIST OF HON. ADVISORS

1) Ir Prof. CHEW Weng Cho. 周永祖 教授、工程節
2) Ir Dr. LAU Ching Kwong 劉正光博士、工程節
2) Ir Dr. LAU Ching Kwong 劉正光博士、工程節
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7) Ir Prof. MAK Kai Ling 麥悅寧 教授。工程節
9) The Hon SHEK Lai Him, Abraham SBS, JP 石禮謙太平紳士、銀紫荊星章、立法會議員
9) The Hon SHEK Lai Him, Abraham SBS, JP 石禮謙太平紳士、銀紫荊星章、立法會議員
1) Ir Prof. TRA Soot Thor 版本助 教授
1) Ir Prof. TROK Jin Guang 踏絡光 教授
1) Ir Prof. TROK Jin Guang 踏絡光 教授
1) Ir WONG Chung Hang 軟件衛工程節
4) Prof. WONG Kam Tai 黃錦輝教授
5) Mr. ZHENG Ming Kun 應即班 先生
16) Mr. ZHENG Tai Qi 鄭太琪 先生





#### Hong Kong Institute of Utility Specialists

Hon. Legal Advisors 榮譽法律顧問 Mr. Tang Kal-ming, Keith 飯飯明 先生 Ir SOO K.L., Gary 蘇國良工程餘 Mr. YIP Shing-hing, JP 藥成慶 先生、太平紳士

Hon. Auditor 榮譽審核會計節 Mr. Stephen Chan

































#### COMPANY REPRESENTATIVE

Company Name
APC Surveying & Building Limited
BUDA Engineers & Consultants Co., Limited

BUDA Engineers & Consultants Co., Limited Build.IT Castco Testing Centre Ltd. EGS (Asia), Limited FORWIN Site Investigation Engineering Ltd. Freyssinet Hong Kong Limited Hang Tone Drainage Engineering Limited Innopipe Engineering Limited Jetrod Pipeline Consultant and Engineering Limited Man Kee Engineering Co., Ltd Patrick Yuen Underground Detection Company Limited Toplime Technologies Limited US & Associates Consulting Co., Limited US & Associates Consulting Co., Limited UT-ech Engineering Company Limited

U-Tech Engineering Company Limited UtilityINFO (1Call) Limited

### CHAIRMAN OF DISCIPLINES REPRESENTATIVE A. CCE (CCTV & ME): B. MHICS:

US (PCL):

D. WLD: E. BWCS: F. PR: G. GPR:

H. FLOW

I. PCS: J. DM: K. UM: L. PM: M. BIM:

N. BD: O. NDT

VERSION: V1.1

### Chinese Name of Company 全管總真當測量有限公司 沛遠工程顧問有限公司 建築資訊顧問有限公司

建築資訊網所有限公司 住力高試驗中心有限公司 環域的報停用有限公司 專英條澳工程有限公司 提工等等有限公司 好通工程有限公司 新維通工程有限公司 好過一程程公司 方式程序的经司 安配工程有限公司 方式程有限公司 方式程有限公司 方式程有限公司 方式程有限公司 方式程有限公司 方式程有限公司 方式程有限公司 方式程有限公司 方式程有限公司 玩步臻地下勘測工程有限公司

森記建築有限公司 利泰科技有限公司 源處顧問及監理事務所有限公司

卓裕工程有限公司

管道狀況評價(排水)

沙井默況評價 管缝測量 (PCL) 漏水監控 斜坡管道測漏

管綫維修(非開挖工程技術噪管修補)

管緣雷遠探測 流量監控 流量監控 管道狀況評價 管錢資料管理

管线管理 管线項目管理 建築模擬(基建) 樓字狀況檢測

非破壞性探測

Title Mr. Mr. Surname WONG HO

NG CHAN

CHEUNG

CHEUNG NG CHAN LO KWOK CHONG YUEN LAM YING WONG

King Wal-cheung, Ray **FUNG** CHOW

Name Chun-fai Cheuk-yin, Jack Chun-keung Man-kwong, Stanley Mei-shing

Mei-shing Chin-man Wai-lun, Ric Chin-pang, Duncan Pak-lun, Alan Kam-hung, Herman Kwong-man Po-tsun, Patrick Kwan-yuen, Desmond Shu-wai, Isaac King

Mr. Kei-hong, Victor

### CHENG Hoo-wah, Howard, MHKIUS KO Kai-man, Jim, FHKIUS WONG Chun-fai, MHKIUS

lr Mr.

Mr. WONG Chun-fai, MHKIUS
Mr. KWOK Kal-yip, Zico, FHKIUS
Mr. HUNG Po-lung, Ken, MHKIUS
LUNG Andy, MHKIUS
Mr. KUNG Hiu-leung, Daniel, MHKIUS
Mr. HO Cheuk-yin, Jack, MHKIUS
Ir Dr. GUAN Xianzhang, Garfield, MHKIUS
Mr. SO Sal-man, Simon, MHKIUS
Ir Dr. NG Pul-lam, MHKIUS
MG Chun-leung, Ediff III

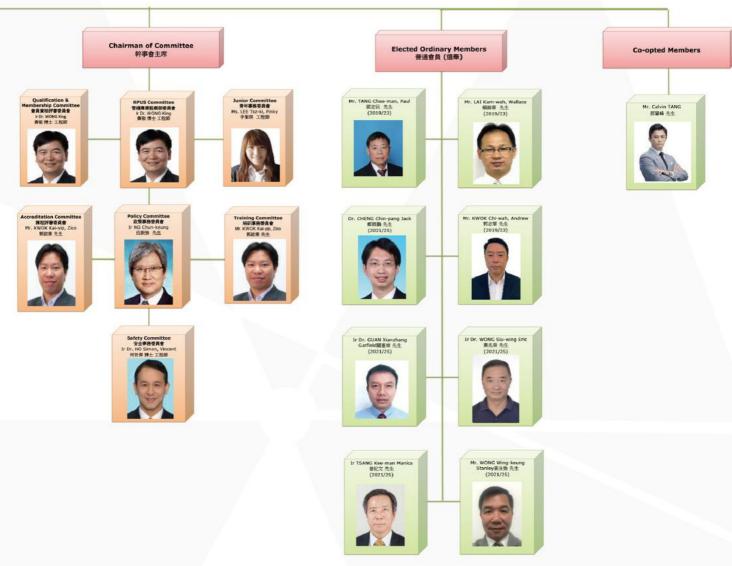
NG Chun-keung, FHKIUS

#### LIST OF HON. ADVISORS

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2) Ir Dr. LAU Ching Kwong 劉正光博士、工程師
3) Ir LEUNG Kwong Ho, Edmund SBS, JP 梁廉瀬 工程師・剣紫荒星章、太平紳士
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8) Ir Prof. TeRK Lai Him, Abraham SBS, JP 石槽謙太平紳士、銀紫荊星章・立法會課
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10) Ir Prof. TeRG Jin Guang 醫能光教授
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1) Ir WONG Chung Hang 黃柳曾 工程師
4) Prof. WONG Kam Fai 黃鄉縣 教授
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7) Mr. ZHENG Tai Qi 應太別 先生





Membership no.	Title	Surname	Name (Xxx-xxx)	Other Name	中文名	Honor	Grade of membership	2011-13	2013-
OMHKIUS20090375	Mr.	TANG	Chee-man	Paul	鄧志民		Operative		
FHKIUS20070193	Ir Dr.	НО	Simon	Vincent	何世傑		Fellow		✓
MHKIUS20100415	Mr.	LAI	Kam-wah	Wallace	賴錦華		Manager		✓
FHKIUS20070206	Ir Prof.	LOCK	Fat-shing	Louis	樂法成		Fellow	✓	✓
MHKIUS20040035	Ir	TSANG	Kee-man	Manies	曾紀文		Manager		
FHKIUS20040036	Ir	NG	Chun-keung		伍振強		Fellow		✓
FHKIUS20110513	Ir Dr.	NG	Pui-lam		吳沛林		Fellow		✓
MHKIUS20050141	Ir Dr.	WONG	Siu-wing	Eric	黄兆榮		Manager		
MHKIUS20030010	Mr.	WONG	Chun-fai		黄駿暉		Manager	✓	✓
FHKIUS20140534	Mr.	KUNG	Hiu-leung	Daniel	龔曉亮		Fellow		
MHKIUS20100461	Mr.	НО	Cheuk-yin	Jack	何焯賢		Manager		
OMHKIUS20130456	Ms.	LEE	Tsz-ki	Pinky	李紫琪		Operative		✓
FHKIUS20030008	Mr.	KWOK	Kai-yip	Zico	郭啓業		Fellow	President (2011/13)	✓
MHKIUS20050148	Mr.	LAM	Mei-shing		林美盛		Manager		✓
OMHKIUS20080265	Mr.	WILSON	Allen	Robert			Operative	✓	✓
OMHKIUS20090362	Mr.	CHEUNG	Chin-man		張展文		Operative		✓
OMHKIUS20080242	Mr.	HUI	Chun-leung	Nelson	許俊亮		Operative	✓	✓
OMHKIUS20080244	Mr.	NG	Wai-lun	Ric	吳偉麟		Operative		✓
MHKIUS20110465	Mr.	CHAN	Chin-pang	Duncan	陳展鵬		Manager		
MHKIUS20040109	Mr.	LO	Pak-lun	Alan	羅柏麟		Manager		

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Council member						
15	2015-17	2017-19	2019-21	2 021-23		
	✓	✓	✓	✓		
	✓	✓	✓	✓		
	✓	✓	✓	✓		
	✓	✓	✓	✓		
	✓	✓	✓	✓		
	✓	President (2017-19)	President (2019-21)	✓		
	✓	✓	✓	✓		
			✓	✓		
	✓	✓	✓	✓		
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	<b>✓</b>	✓	✓			

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Membership no.	Title	Surname	Name (Xxx-xxx)	Other Name	中文名	Honor	Grade of membership	2011-13	2013-
MHKIUS20050145	Mr.	LUNG	Andy		龍應光		Manager		
FHKIUS20030011	Mr.	YUEN	Po-tsun	Patrick	阮步臻		Fellow	✓	✓
MHKIUS20080261	Ir	LAM	Kwan-yuen		林坤源		Manager		✓
MHKIUS20180578	Mr.	CHENG	Hoo-wah	Howard	鄭浩華		Manager		
MHKIUS20150559	Mr.	so	Sai-man	Simon	蘇世文		Manager		
FHKIUS20020004	Ir Dr.	WONG	King		黃敬		Fellow	✓	President (201
MHKIUS20070203	Ir	FUNG	Wai-cheung	Ray	馮偉章		Manager		✓
OMHKIUS20080271	Mr.	CHOW	kei-hong	Victor	周杞匡		Operative		
OMHKIUS20030028	Mr.	WONG	Wing-keung	Stanley	黄泳強		Operative		
FHKIUS20020001	Ir	ко	Kai-man	Jim	高繼文		Fellow	✓	✓
FHKIUS20070194	Ir Prof.	TSE	Wai-tat	Peter	謝偉達		Fellow		
MHKIUS20110468	Mr.	HUNG	Po-lung	Ken	洪寶龍		Manager	✓	✓
MHKIUS20170567	Mr.	KWOK	Chi-wah	Andrew	郭志華		Manager		
MHKIUS20170564	Dr.	CHENG	Chin-pang	Jack	鄭展鵬		Manager		
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MHKIUS20210591	Mr.	TANG	Siu-fung	Calvin	鄧肇峰		Manager		

Council member						
	2015-17	2017-19	2019-21	2 021-23		
				✓		
	✓		✓			
	✓	✓	✓			
				✓		
	✓	✓	✓	✓		
15)	President (2015/17)	✓	✓	✓		
	✓	✓	✓			
	✓	✓	✓			
				✓		
	✓	✓	✓	✓		
		✓	✓	✓		
	✓	✓	✓	✓		
			✓	✓		
		✓	✓	✓		
		✓	✓	✓		
		✓				
			✓	President(2021-23)		
				✓		



**International Institute of Utility Specialists** 

## 邁向Towards



Personnel Recognition 專業認定

**Promotion** via ICUMAS 專業推廣





King WONG was Executive President



UTILITY SYSTEM IS OFTEN DESCRIBED AS THE VASCULAR SYSTEM OF OUR BODY, AND THEREFORE A GOOD UTILITY SYSTEM COULD BE A CORNERSTONE OF A COUNTRY'S PROSPERITY.



### 管綫專業, 你我攜手共建更好明天

WE STRIVE FOR ENHANCING PROFESSIONAL STANDARDS IN THE UTILITY INDUSTRY!

## MESSAGEROM PRESIDENT

The 1st International Conference on Utility Management and Safety was hosted in 2009, having attracted overwhelming interest from over 500 participants.

In response to the voices demanding an international communication platform to boost the growth of the entire utility industry, IIUS was subsequently established with its 1st Executive Committee formed in Guangzhou in 2019.

Since then, the IIUS member network has spanned globally over 30 cities across different countries, including mainland China, the USA, the UK, Canada, the Philippines, Malaysia, etc. I am glad to announce the 5th Conduit Condition Evaluation Codes (International Edition), accredited by HKIUS and IIUS, is going to be published soon, in which a number of significant modifications have been made referencing the feedback on the 4th edition and the latest CCTV survey.

Moreover, the 1st international version of manhole specifications - - Manhole Condition Evaluation Codes is also under preparation.

#### 管綫專業, 你我攜手共建更好明天

WE STRIVE FOR ENHANCING PROFESSIONAL STANDARDS IN THE UTILITY INDUSTRY!

## MESSAGEROM PRESIDENT

To start the year off right, we have recently signed MOU respectively with Indian Society for Trenchless Technology (IndSTT) and Guangzhou Panyu Polytechnic (廣州番禺職業技術學院).

The former MOU assured the recognition the mutual of endorsements **SUE** issued by Engineers certified by IndSTT and RPUS certified by IIUS while the latter agreed to set up Urban Underground Utility Industrial College (城市地下管綫產業學院) to nurture utility specialists.

IIUS has always been entrusted with enhancing standardisation, promoting professionalism and improving efficiency of the utility industry.

We as a team will continue to spare no efforts to build trust and understanding with our stakeholders.

In addition to our dedication, shared endeavour with policy makers is also indispensable to the pursuit of building a SMART underground world.



## VIEWS ON POLICIES TO IMPROVE THE STANDARD OF UTILITY SURVEY IN HONG KONG



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### MESSAGE FROM EXECUTIVE PRESIDENT

Gone are the days when people were only concerned about survival. We are now living in the age of people caring about living qualities. As a direct result, people across different levels of society strive for improving the quality of life. It's nothing new that numerous infrastructures and modern technologies, such as 5G, are springing up like mushrooms. They are heavily relying on the aid of the utility industry. Boiling down to the fact that utilities are the fundamental of all sorts social construction. Utility specialists will become more and more essential while the subsurface network system becoming more sophisticated. We are confident to say that underground utilities will play a crucial role in social development for years to come.

IIUS have hosted ICUMAS which have been served as a global platform for utility specialists to share and study different new utility technique, helping them to prepare for future development. It also allows utility professions from different parts of world to take a leaf out of others' book. Yet, the widespread of COVID-19 in recent years caused the postponement of ICUMAS at Malaysia, suppressing communication from different sectors of the industry. We look forward to re-open this grand conference in upcoming year, i.e. 2023, and talents from different regions gather around again to contribute their valuable insights to the industry.

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### MESSAGE FROM EXECUTIVE PRESIDENT

Without a shadow of doubt, IIUS will do all in its endeavor, to support social development in all areas and to uplift the standards of several aspects: sewer systems, underground cable systems, the list goes on, ultimately to enhance the living quality and help different cities to become a more livable place. Hopefully, IIUS will lead the society to a more glorious and prosperous future.

### Organization CHART

管綫項目管理



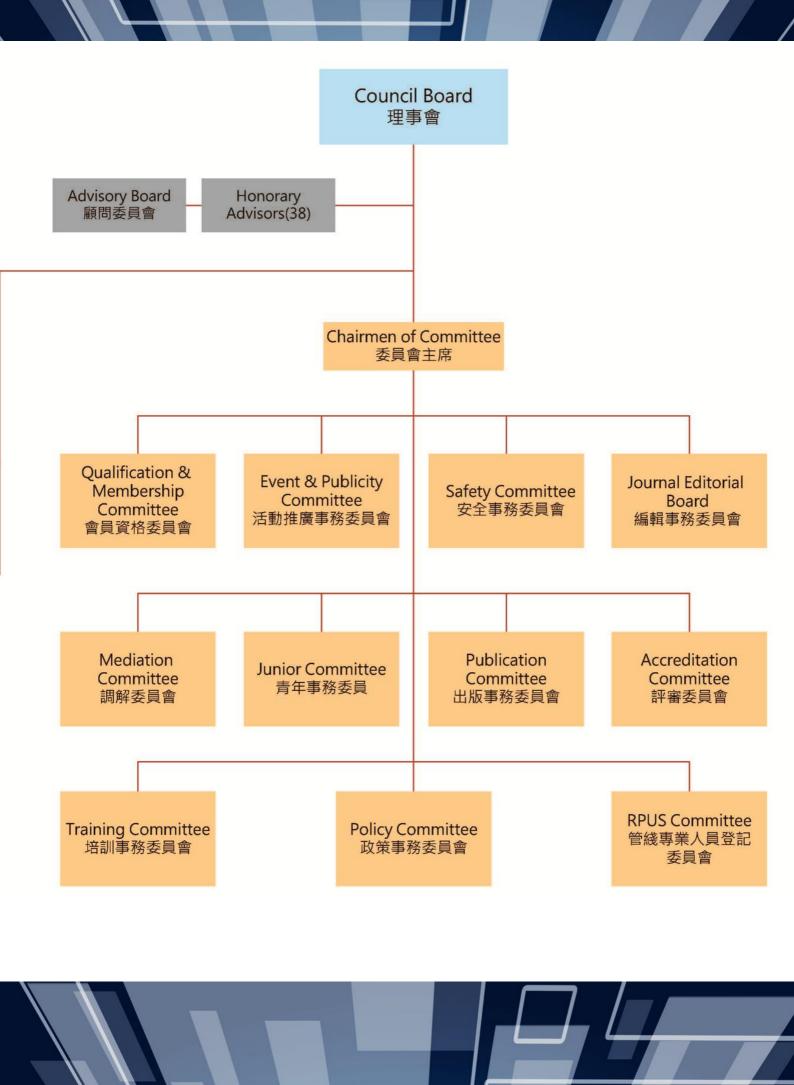
International Institute of Utility Specialists

President Vice-President 1st Vice-President Hon. Treasurer Hon. Secretary 會長 第一副會長 副會長 榮譽財務長 榮譽秘書長 **Elected Ordinary** Members 選舉委員 Regional Representatives / Chairmen of Chairmen Disciplines Representatives 地區代表 (主席) 各專業範疇代表 (主席) D. WLD C. US(PCL) B. MHICS A. CCTV & ME 漏水測控 管綫測量(PCL) 沙井狀況評價 管道狀況評價(排水) F. PR H. FLOW G. GPR 管綫維修 E. BWCS (非開挖工程技術 流量監控 管綫雷達探測 斜坡管道測漏 喉管修補) J. DM I. PCS L. PM K.UM 管綫資料管理

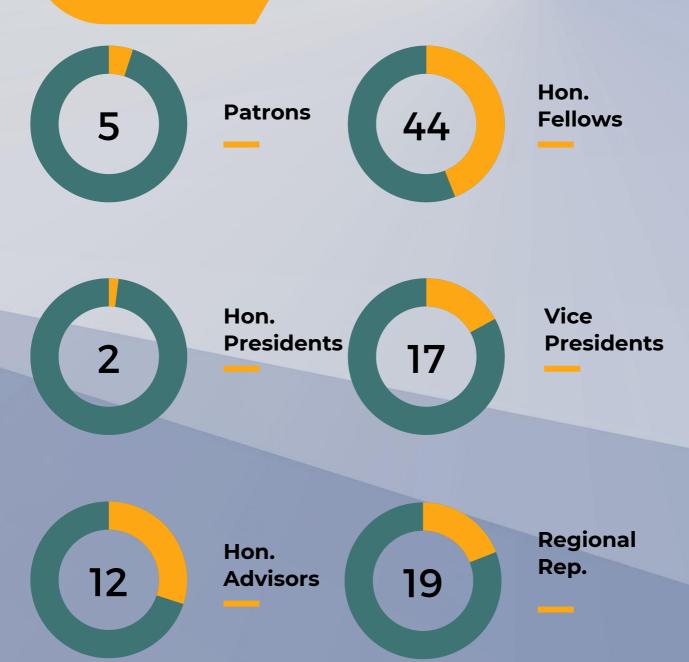
管綫管理

M. BIM for infrastructure 建築資訊模擬(基建)

管道狀況評價



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Fellow, The Canadian Academy of Engineering Professor and Construction Engineering Program Chair, Ira A. Fulton Schools of Engineering, Arizona State University, U.S.A. 加拿大工程院 院士 美國 亞利桑那州立大學 教授及工程系主任

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Ir Prof. MA Siu-cheung, Eric, GBS, JP 馬紹祥 教授、工程師、金紫荊星章、太平紳士 Former Secretary for Development Bureau, The Government of the HKSAR 香港特別行政區政府 發展局原局長

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Deputy President and Provost, The Hong Kong Polytechnic University 香港理工大學 常務及學務副校長

#### Prof. DING Xiao-li 丁曉利 教授、測量師

Associate Dean (Partnership),
Faculty of Construction And
Environment
The Hong Kong Polytechnic
University
香港理工大學
建設及環境學院 副院長

#### Ms. FUNG Yin Suen, Ada, JP 馮宜萱 女仕、太平紳士

Council
Former Deputy Director of
Housing Department, HKSAR
香港綠色建築議會 議會董事
房屋署原副署長(發展及建築)

Director, World Green Building

#### Mr. LEUNG Shou-chun 梁守肫 測量師

Managing Director, Leung Shou Chun Land Surveying Consultants Ltd. Former Head, Survey and Mapping Office, Lands Department, The Government of the HKSAR 香港特別行政區政府 原地政總署測 繪處 處長

#### Ir Dr. Hon. LO Wai-kwok, SBS, MH, JP 盧偉國 博士、工程師、銀紫荊星 章、榮譽勳章、太平紳士

Member (Functional
Constituency – Engineering),
Legislative Council of The
HKSAR
香港特別行政區 立法會議員 (功能
界別 工程界)

#### Prof. SHANG Yanjun 尚彥軍 教授

Researcher, Institute of Geology and Geophysics, Chinese Academy of Sciences 中國科學院 地質與地球物理研究所 研究員 (Beijing, 北京)

### IONORARY ADVISORS 榮譽顧問

#### Ir Prof. SHEN Qi-ping, Geoffrey 沈岐平 教授、工程師

Associate Dean (Teaching),
Faculty of Construction &
Environment
The Hong Kong Polytechnic
University
香港理工大學 建設及環境學院(教學)
副院長

#### Prof. SHI Wen-zhong, John 史文中 教授

Department Head, Dept. Land Surveying & Geo-Infomatics, The Hong Kong Polytechnic University 香港理工大學 土地測量及地理資訊 學系 系主任

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Former President
The Law Society of Hong Kong
香港律師會 原會長

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Chief Executive & Managing Director, Macquarie Generation (Australia, 澳洲)

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Member (Functional Constituency-Architectural, Surveying, Planning & Landscape) Legislative Council of The HKSAR 香港特別行政區 立法會議員 (功能界別 建築、測量、都市規劃界及園境界)

#### Mr. WU Chou-kit, Eddie 胡祖杰 先生

Assigned Member, Legislative Council of The Government of the Macau SAR Council President, The Macau Institution of Engineers 澳門特別行政區立法會第六屆特首委任議員 澳門工程師學會 理事長

#### Sr Dr. Abdul Kadir Bin Taib

Former Director General of Survey and Mapping, Department of Survey and Mapping Malaysia (JUPEM)

#### Mr. CHAU Sai-wai, JP 周世威先生、太平紳士

Deputy Director, Water Supplies Department, The Government of the HKSAR

香港特別行政區政府 水務署 副署長

#### Sr AU Choi-ka, SBS, JP 區載佳 測量師 銀紫荊星章, 太平紳士

Former Director of Building Department, HKSAR Director 2020-2022, Hong Kong Association of Energy Engineers 香港特別行政區政府 原屋宇署署長香港能源工程師學會 董事(2020-2022)

#### Mr. CHEN Wei 陳煒先生

江蘇長江水務有限公司江源供水分公司 – 經理

#### Ir CHAN Wing-kin, Alfred 陳永堅 工程師

Former Managing Director,
The Hong Kong and China Gas
Company Limited
香港中華煤氣有限公司 原常務董事

#### Dr. CHEN Xiang-sheng 陳湘生 博士、工程師

Member, China Academy of Engineering Chief Engineer, Shenzhen Metro Group Co., Ltd. 中國工程院 院士 深圳市地鐵集團有限公司 總工程師

#### Ir CHEUNG Kin-keung, Martin 張建強 工程師

Former Director of Housing
Department, The Government of
the HKSAR
Director, Mannings (Asia)
Consultants Ltd.
香港特別行政區政府
原房屋署 助理署長
萬莉仕(亞洲)顧問有限公司 董事長

#### Mr. DU Jianguo 杜建國 先生

Former Deputy General Manager, Beijing Drainage Group 北京自來水集團 原副總裁

#### Mr. FAN Yuefeng 范岳峰 先生

上海昊滄系統控制技術有限責任公司 General Manager 總經理

#### Dato Haji Safar Bin UNTONG

Director, Lands and Survey
Department, Sabah Malaysia
馬來西亞沙巴 土地及測量局 局長

#### Sr JOHN Elvis Koh

Deputy Director General of Survey and Mapping II, Department of Survey and Mapping Malaysia (JUPEM)

#### Ir LAM Tin-sing, Enoch, SBS, JP 林天星 工程師, 銀紫荊星章, 太平紳士

Former-Director of Water Supplies Department, The Government of the HKSAR 香港特別行政區政府 水務署 原署長

#### Mr. LAM W.C., Peter 林榮執 先生

Managing Director-Engineering, HKT Limited

香港電訊有限公司 工程部董事總經理

#### Ir LO Kwok Wah, Kelvin, JP 盧國華 工程師、太平紳士

Director of Water Supplies
Department, The Government of the HKSAR

香港特別行政區政府 水務署 署長

### Ir LAU Chun-kit Ricky, JP 劉俊傑工程師、太平紳士

Permanent Secy (Works) for Development Bureau, The Government of the HKSAR 香港特別行政區政府 發展局常任秘書長 (工務)

#### Prof. MA Baosong 馬保松 教授

Director, China-U.S. Joint Centre for Trenchless R&D, China University of Geosciences 中國地質大學工程學院中美聯合非開挖工程研究中心主任

#### Ir LEE Shing-see, GBS, OBE, JP 李承仕工程師、太平紳士、金紫荊星 章

Former Secretary for Works, The Government of the HKSAR 香港特別行政區政府 原工務局 局長

Ir Prof. MA Siu-cheung, Eric, GBS, JP 馬紹祥 教授、工程師、 金紫荊星章、太平紳士

Former Secretary for Development Bureau, The Government of the HKSAR 香港特別行政區政府 原發展局局長

#### Ir MAK Ka-wai, JP 麥嘉為 工程師、 太平紳士

Deputy Director of Drainage Services Department, The Government of the HKSAR 香港特別行政區政府 渠務署 副署長

#### Dr. Mohd Abdullah SYAZWAN

President, Malaysian Society for Trenchless Technology 馬來西亞非開挖技術協會 會長

#### Prof. Dr. MAO Weide

China Urban Water Association(CUWA) 中國城市給水排水協會, 排水專業委 員會專家

#### Ir NG Mang-tung, Bobby 吳孟冬 工程師

Team Leader/Legislative Review,
Supply & Distribution (NT)
Branch
Ex-Deputy Director, Water
Supplies Department, The
Government of the HKSAR
香港特別行政區政府
原水務署副署長

#### **Prof. Michael C. FORDE**

Professor, Institute for Infrastructure and Environment, The University of Edinburgh, U.K. 英國 愛丁堡大學 基建及環境學院 教授

#### **Prof. Niranjan SWARUP**

Director General, Indian Society for Trenchless Technology 印度非開挖技術協會 會長

#### **Randolf Sevidal Vicente**

Honorary President, ASEAN Federation of Land Surveying and Geomatics (AFLAG)

#### **Prof. Samuel T. ARIARATNAM**

Fellow, The Canadian Academy of Engineering Professor and Construction Engineering Program Chair, Ira A. Fulton Schools of Engineering, Arizona State University, U.S.A. 加拿大工程院院士 美國 亞利桑那州立大學 教授及工程系主任

#### Mr. SIU Wai-ching, Dominic, JP 邵偉青 測量師、太平紳士

Ex-Deputy Director & Head of Survey and Mapping Office, Lands Department, The Government of the HKSAR 香港特別行政區政府 原地政總署副署長、測繪處處長

#### **Prof. Tom Iseley**

President
Buried Asset Management
Institute - International (BAMI-I)

#### Ir SIT Wing Hang, Alfred, JP 薛永恒 工程師、太平紳士

Secretary for Innovation and Technology Bureau, HKSAR 香港特別行政區政府 創新及科技局 局長

#### Mr. TONG Ka-hung, Edwin 唐嘉鴻 先生

Ex-Director of Drainage Services Department, The Government of the HKSAR

香港特別行政區政府 原渠務署署長

#### Mr. WONG Chun-leung, JP 黃仲良 先生、太平紳士

Former-Director, Water Supplies Department, The Government of the HKSAR

香港特別行政區政府 原水務署署長

Dr. WU Xue-wei 吳學偉 博士

Ex-Deputy Director, Bureau of

Water Resources, Guangzhou

廣東省廣州市水務局 原副局長

廣州市水投集團 總經理

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Managing Director of Urban Renewal Authority
Former Permanent Secretary for Dev (Works), Development Bureau, Works Branch, The Government of the HKSAR 市區重建局 行政總監 香港特別行政區政府 原發展局常務秘書長(工務)

#### Mr. YANG Huai

Municipality

C.E.O.

楊槐 先生

廈門海邁科技股份有限公司 執行總裁

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中煤航測遙感局 管網工程院 院長

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Dean, School of Geodesy and Geomatics Wuhan University 武漢大學 測繪學院 院長

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Director, Land and Survey Department SARAWAK

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上海市公路學會 副理事長

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Former General Manager, Tianjin Gas Group Company Limited 天津天聯公用事業股份有限公司 原 總經理

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Associate Professor, School of Environment, Tsinghua University 清華大學 環境學院 - 給水排水教研所 副教授

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General Manager, Guangzhou Easydetection Technology Co., Ltd 廣州易探科技有限公司 總經理

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#### Dr. DAI Yi 代毅 博士

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總經理

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Technology Co., Ltd. 廈門安越非開
挖工程技術股份有限公司 董事長

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General Manager, Wuhan Easy-Sight Technology Co., Ltd. 武漢中儀物聯技術有限公司 總經理

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Immediate Past President, Hong Kong Institute of Utility Specialists 香港管綫專業學會 原會長

#### Ir Prof. TSE Wai-tat, Peter 謝偉達 教授、工程師

Director of SEAM Lab, Department of Systems Engineering & Engineering Management, City University of Hong Kong 香港城市大學 系統工程與工程管理學系, SEAM Lab

### WEE PRESIDENTS III I I I I



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#### Dato' Sr. Dr. Hj. MD. Mohd Zaid Bin Abdullah

President, Persatuan Juruukur Tanah Bertauliah Malaysia (PEJUTA)

#### Sarawak 沙勞越

#### Sr Jonathan Liew-Ing NGU 吳流恩 先生

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Board Member, Land Surveyors
Board Sarawak

#### Sabah 沙巴

#### **Sr Vitus Bin TAN**

Board Member, Sabah Surveyors Board

#### Dato Haji Safar Bin UNTONG

Director, Lands and Survey
Department Sabah, Malaysia
馬來西亞沙巴 土地及測量局 局長

### 



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#### ■**学**■CANADA 加拿大

#### Antwerp 安特衛普

#### **Mr. Tom DERVEAUX**

Business Development Manager Waterproofing, Spetec Europe



#### New Delhi 新德里

#### Prof. Niranjan SWARUP

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#### Toronto 多倫多

#### Mr. Mark ANDREWS

Chief Engineer, Andrews. Engineer

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上海浦公建設工程質量檢測有限公司
董事長

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China Urban Water Association(CUWA) 中國城市給水排水協會 排水專業委員會專家

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#### Mr. JIANG Xuyang 蔣旭陽 先生

General Manager, Shenzhen Keyfound Electronic Technology Co., Ltd.

深圳凱方達電子科技有限公司 總經理

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**★**\*\*

#### CHINA 中國

#### Tinjin天津

#### Zhengzhou 鄭州

#### Mr. ZHENG Tai-qi 鄭太琪先生

Former General Manager, Tianjin Gas Group Company Limited 天津天聯公用事業股份有限公司 原總經理

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中煤航測遙感局 管網工程院 院長

#### Dr. FANG Hong-yuan 方宏遠教授

Professor, Zhengzhou University 鄭州大學 教授

#### Dr. MAO Weide 毛惟德 博士

China Urban Water Association(CUWA) 中國城市給水排水協會 排水專業委員會專家

#### Wuhan 武漢

#### Taichung 台中

#### Prof. MA Baosong 馬保松 教授

Director, China-U.S. Joint Centre for Trenchless R&D, China University of Geosciences 中國地質大學工程學院中美聯合非開挖工程研究中心主任

#### Mr. KAO Jr-shi 高治喜 先生

Chairman, The Chinese commercial Association of Surveying and Mapping in Taiwan 中華民國測繪業商業同業公會 理事長

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#### Melbourne 墨爾本

#### Mr. Lonion CHEN陳超良 先生

Business Development Manager (CHINA), Pelican Corp



#### Edinburgh愛丁堡

#### **Prof. Michael C. FORDE**

Professor, Institute for Infrastructure and Environment, The University of Edinburgh, U.K.



#### Arlington阿靈頓

#### **Dr. Mohammad NAJAFI**

Director, Centre for Underground Infrastructure Research & Education (CUIrE), The University of Texas at Arlington, U.S.A.

#### Carmel 卡梅爾

#### Mr. Jemmie WANG

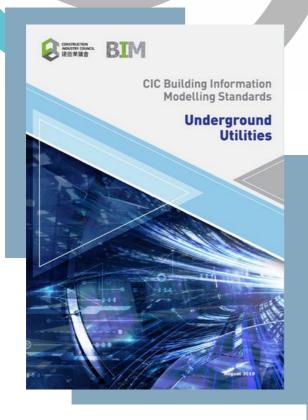
Partner, Biz Metrix LLC

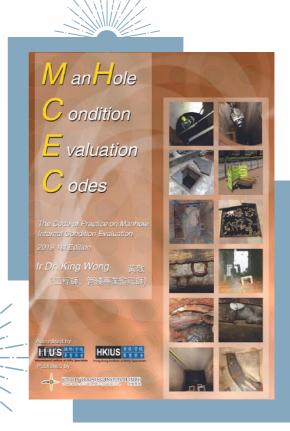
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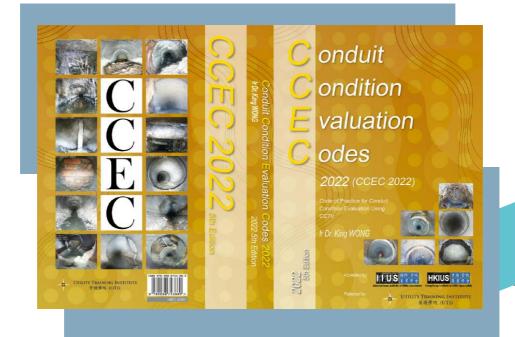
#### **Prof. Samuel T. ARIARATNAM**

Fellow, The Canadian Academy of Engineering Professor and Construction Engineering Program Chair, Ira A. Fulton Schools of Engineering, Arizona State University, U.S.A. 加拿大工程院院士美國 亞利桑那州立大學 教授及工程系主任

### FEATURED PUBLICATIONS





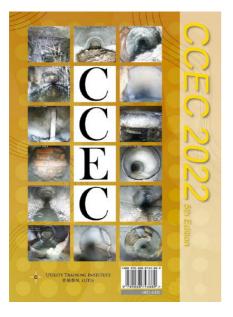


The previous edition (4th) of HKCCEC was released in 2009. In the past years, camcorders, video tapes, and low-pixel photography lenses were used. In addition, digitalization has not yet prevailed. The surveying distance and record time was also greatly limited in the old days.



Moreover, CCTV survey standards were not well defined. Yet, technologies for utility survey has developed rapidly over the past decade. Therefore, the 5th Conduit Condition Evaluation Codes (CCEC) International Edition, accredited by HKIUS and IIUS, is going to be published.

"Taking reference to the 4th edition and the latest CCTV survey requirements, the 5th edition showed a number of significant modifications"



- 1. Select the appropriate CCTV equipment according to the pipeline conditions;
- 2. Adopt high-pixel camera lens;
- 3. Adopt high-stock memory card;
- 4. Update Score & Grade calculation;
- 5. Update defect and joint distance;
- 6. Strengthen the understanding of defects;
- 7. Update the Requirements for Personnel Carrying out Inspection
- 8. Update the quality of defect photos...etc

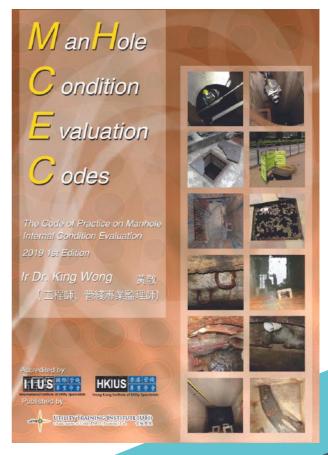


It's the first-ever international version for manhole specifications

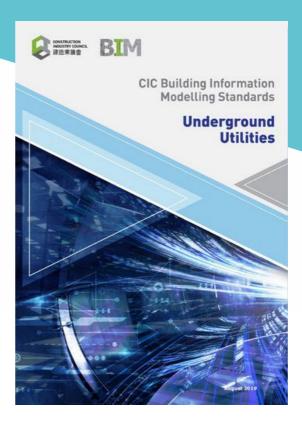
-- Manhole Condition Evaluation Codes (MHCEC).

Here are the key highlights of the book.

- 1. Classification of defect types with photos;
- 2. Photos and explanation of defects;
- 3. Method and record of the manhole direction;
- 4. Score & Grade calculation;
- 5. Formulate Manhole Card and Record Form...etc;
- 6. Update the Requirements for Personnel Carrying out Inspection.



This "BIM Standards for Underground Utilities" is published on August, 2019. It's softwareneutral. It's jointly developed by HKIUS and Construction Industry Council (CIC), with appropriate both local reference to and BIM international standards and practices.



Accurate UU data may create opportunities for benefits to be achieved, such as the use of remote robotic techniques to maintain assets in busy networks, thereby reducing the need for intrusive maintenance practices (e.g. road excavations). Accurate mapping of utility networks also improves asset modelling capabilities with more precise outcomes. Implementation and use of BIM systems for such purposes require dramatic changes to current practices, and bring new challenges to stakeholders, e.g. the need for new knowledge of emerging technologies and a skills gap.

This Standards provides a guideline on the use of BIM technology in underground utility practice within a complete project lifecycles. In due course it is expected that further education and experience in the application of this Standards will lead to more effective planning and safer execution of utility-based activities and related street works, civil works and ground works.

# Utility Safety Competitions 2020-21

Utility Safety Competitions are a series of open competitions jointly organized by HKIUS, IIUS, China Association of City Planning Underground Pipeline Committee (中國城市規劃協會地下管綫專業委員會) and Guangzhou Panyu Polytechnic (廣州番禺職業技術學院) in 2021, aiming at increasing public awareness on the effective management of underground utilities including Gas, Water, Drains, Power, Telecom, etc. And work safety in road excavation. With all the supports from different organizations and industries, the competition has been held successfully.

Slogan and drawing competition requires students to present the message of safety working by either using slogan or drawing. A judging panel was formed by the organizing committee of the HKIUS and giving out scores to the work sent to the competition.



# Events Visit by Singapore Lands Authority cum Seminar of IDMS introduction and Utilities Professions in Hong Kong

#### Date & Time:

18th April 2018, 14:30 – 17:30

#### Organizer:

Department of Land Surveying and Geo-Informatics, The Hong Kong Polytechnic University

#### Co-Organizer:

Hong Kong Institute of Utility Specialists (HKIUS)

#### Speaker:

Ir NG Chun-keung, President of HKIUS

Ir Dr. King WONG Immediate Past President of HKIUS

#### Program highlights:

This is a part of the 5-day study visit, led by Chief Executive of Singapore Land Authority (SLA), Mr. Tan Boon Khai and the Singapore-ETH Future Cities Laboratory, participants included land surveyors and engineers from other three Government agencies in Singapore as well as geomatics experts from Switzerland.

The Singapore side is developing an initiative called "Digital Underground" and wishes to learn underground utilities and Smart City technologies in PolyU and Hong Kong.

HKIUS shared the details of utility professions, BIM of Underground as well as Integrated Database Management System (IDMS).

p.s. LSGI Department of The Hong Kong Polytechnic University Programme - [Study Visit "Digital Underground Mapping" of Delegation from Singapore-ETH- Futures City Lab]





IDMS introduction and Utilities Professions in Hong Kong presented by Ir NG Chun-Keung

#### Speech given by Ir Dr. King WONG





Group photo taking after seminar

#### Livents 城區綜合管綫《管廊桌票碼制會

#### Date & Time:

25th May 2018, 09:30 – 17:30

#### Organizer:

澳門工程師學會、澳門管綫協會

#### Co-Organizer:

國際管綫專業學會

#### Program highlights:

由澳門工程師學會、澳門管綫協會主辦之<城區綜合管綫、管廊專業研討會>於5月25日 (星期五)上午 9:30-下午5:30假澳門科學館會議廳舉行,研討會探討舊城區活化、管綫、綜合管廊 及新科學技術等議題。



Technical seminar on the day



Group photo of opening ceremony







Souvenir Presentation to Ir Dr. King WONG

#### Events 2018 測漏師高級規制

#### Date & Time:

22-24th May 2018

#### Organizer:

揚州自來水有限公司 中規協地下管綫委員會 揚州節源漏水檢測有限公司

#### Co-Organizer:

國際管綫專業學會

#### Speaker:

杜晨生、金向瑋、陳煒、黃敬

#### Program highlights:

- 邀請的測漏師講師頒發特邀演講嘉賓感謝狀
- 出席研討的測漏師們頒發出席證書
- 經過愉快協商,將此次研討會議中共同參與課件《加強表具管理提高供水收益》以及現-場漏點實測項目
- 設立成為測漏師比賽項目
- 通過現場打分方式評比出前四甲
- 由國際管線專業學會提供 2000、1500、1000、500 元人民幣的 現金獎勵
- 歡迎參加測漏師高級研討的朋友們積極提供《加強供水錶具管理提 高供水收益》課件或提綱



Award Presentation by Dr. King WONG

Presentation by Dr. King WONG



Practical demonstration by Dr. King WONG





Practical demonstration by Dr. King WONG

#### Events

One-day Conference for Utility Surveys, Safety and Management

#### Date & Time:

10th August 2018, 09:30 to 17:30

#### Organizer:

Hong Kong Institute of Utility Specialists (HKIUS)

#### Co-Organizer:

Utility Training Institute (UTI)

#### Program highlights:

- Demonstrations and road show
- Challenge of using common utility ducts in Hong Kong
- Introduction of Underground BIM
- Standard and requirements for CCTV survey
- Water leakage detection in Hong Kong
- Utilization of utility survey for railway projects
- Utility specialists in Hong Kong
- Route to utility specialists



Certificate of Appreciation presented to Guest of Honor, Ir HON Chi-Keung

Group photo taking after conferrence



Demonstration during site tour



Mustration on equipment by Ir Dr. King WONG

### Events 「科學為民」服務巡禮參觀活動

### Date & Time:

3rd Nov 2018, 10:00-12:00

### Organizer:

香港特別行政區政府天文台

### Co-Organizer:

香港管綫專業學會

### Speaker:

香港管綫專業學會前會長

### Program highlights:

由香港特別行政區政府天文台主辦「科學為民」服務巡禮參觀活動, 是次活動定於 2018年9月至12月期間舉行,由專業人員提供導覽及 即場講解。 Seminar speech given by Ir Dr. King WONG



Practical demonstration on utility surveying



Practical demonstration for Manhole surveying





Demonstration of equipment for Water Leakage Detection Control

### Livents 地下管綫探測的享受資源。

### Date & Time:

30th November 2018, 09:30 – 13:00

### Organizer:

香港管綫專業學會

### Co-Organizer:

國際管綫專業學會

### Program highlights:

為令各界人士可以深入瞭解,在2018年11月30日(星期五)於香港管 綫專業學會技能訓練中心(葵涌健康街2-6號飛亞工業中心212室)舉 行了一個簡介會,其後還進行了相關探測示範,務求令各方更深入 瞭解相關專業。

是次簡介會由黃敬博士、管綫專業監察師主講,而出席的業界包括政府工務部門、在職工程師,承建商及學會會員等等。

為時一小時的簡介會,為大家講解了承保的相關專業、不同會員級別及承包的上限,此外,學會相關五大專業的標準亦有所介紹。

經過是次簡介會,大家對此項 專業責任保險有更深的理解。



### Events IHKOSIHA Technical Visit cum Safety Seminar on Latest Utility Technology and Management

### Date & Time:

23rd February 2019, 09:30 - 12:30

### Organizer:

Hong Kong Institute of Utility Specialists (HKIUS)

### Co-Organizer:

Hong Kong Occupational Safety and Health Association (HKOSHA)

### Speaker:

Ir NG Chun-keung, President of HKIUS Mr. Lonion CHEN, Regional Representative (Australia) of IIUS Ir Dr. King WONG, Executive President of IIUS

### Program highlights:

Underground BIM – needs, standards and the way to go The Secret and mystery of utility survey and safety Utility One Call System for better utility safety

At the same time, demonstration for CCTV, US(PCL) and MHICS was held in HKIUS center with real equipment for deeper understanding.



### Technical Presentation cum Press Release for Guided Waves & Imnovative Sensors for inspecting pipes, cables and raffs

### Date & Time:

21st February 2019, 14:00 – 15:30

### Organizer:

Smart Engineering Asset Management Laboratory (SEAM),
Department of Systems Engineering and Engineering Management (SEEM),
City University of Hong Kong
Hong Kong Institute of Utility Specialists (HKIUS)

### Speaker:

Ir Dr. Peter Wai-tat TSE, Fellow of HKIUS (FHKIUS), Vice-President 2017/19; Fellow of IIUS (FIIUS), Vice-President 2019/23; Fellow of American Society of Mechanical Engineers;

### Program highlights:

A novel and non-destructive-testing-based inspection system called, Guided Wave (GW), has recently become popular because of its prominent capability in detecting defects occurred in buried or covered pipes. Unlike common ultrasonic inspection methods, which can only provide a short inspection distance and a tedious point-to-point inspection process, GW has low energy attenuation that enables it to have a long inspection distance, covers the entire pipe area and sensitive to small defects. It only requires a single point located at a kitchen or bathroom to install the novel sensor so that it can be used to emit the desired GW and then receive the defect information. The current GW-based inspection system includes an innovative GW sensor designed by us, a compact and portable USB-based data acquisition box and a portable computer that has built-in virtual instruments designed by us to analysis the received GW signals. The results obtained from both laboratory experiments and field tests using real and in-service building pipes prove that the GW system is effective in detecting wall-covered corrosion.



### Events Seminar on The Awareness of Utilities Protection

### Date & Time:

27th March 2019, 15:00 - 16:30

### Organizer:

China State Construction Engineering (Hong Kong) Ltd.

### Co-Organizer:

Hong Kong Institute of Utility Specialists (HKIUS) International Institute of Utility Specialists (IIUS)

### Speaker:

Ir Dr. King WONG Immediate Past President of HKIUS, Executive President & Convenor of IIUS

### Program highlights:

China State Office was launching a programme aims to improve their staff, engineers, foremen and site personnel's awareness and knowledge on utilities protection.



Seminar speech given by Ir Dr. King WONG

Speech given by Ir Dr. King WONG



Presentation of certificate of appreciation to Ir Dr. King WONG





Seminar aiming to improve staff's awareness and knowledge on utilities protection

Events
Seminars on "PHI & Underground BIMP" cum
Inauguration Ceremony of HKIUS Council (2019-21) and
HUS Executive Committee (2019-23) (HK Chapter)

### Date & Time:

25th September 2019, 14:30 – 21:30

### Organizer:

Hong Kong Institute of Utility Specialists (HKIUS) International Institute of Utility Specialists (IIUS)

### Speaker:

Ir Dr. King WONG, Executive President of IIUS
Ir NG Chun-keung, President of HKIUS
Mr. KUNG Hiu-leung, Daniel, HKIUS Council Member

### Program highlights:

Inauguration Ceremony of HKIUS Council (2019-21) and IIUS Executive Committee (2019-23) (HK Chapter) was held in Regal Kowloon Hotel, Tsim Sha Tsui, on 25th September, 2019.

The ceremony was a major event held by Hong Kong Institute of Utility Specialists (HKIUS) and International Institute of Utility Specialists (IIUS), to foster the exchange of ideas among the utility industry through seminars and to celebrate the incumbent of council members through the inauguration ceremony.

A series of free admission seminars themed on "PII and Underground BIM" were organized to arouse the awareness of and deepen the understanding of the participants to BIM standards and Underground BIM.

Seminars on "PII and Underground BIM" Speech given by Ir Dr. King WONG



Presentation of appointment certificates to representatives of the newly elected Council (2019-21) by Ir LAM Sai-hung



Presentation of certificate to IIUS Hon. Members





Group photo taking with all major guests, HKIUS Council Members, IIUS Committee Members

### Events

### 喉管檢核及新起病毒類防記者招待會

### Date & Time:

2020年12月31日下午1:00 - 下午 2:00

### Organizer:

香港管綫專業學會



記者招待會宜播回顧

### Speaker:

黃敬博士、管綫專業監察師 (香港管綫專業學會前會長;國際管綫專業學會執行 會長)

許俊民博士 (香港大學 客席助理教授)

### Media:

星島日報、明報、東方日報、文匯報、香港電台(RTHK)

### Program highlights:

於2020年12月28日,政府在黃大仙彩雲(二)邨爆發疫情的明麗樓一街之隔的豐澤樓抽取污水化驗結果顯示5日內有4個樣本帶新冠病毒。污水首次驗出含新冠病毒,而大廈卻未有確診個案,意味豐澤樓有住戶或是隱形患者。香港管綫專業學會一直密切關注情況,疫情早於本年二月初次在屋苑爆發時,前會長黃敬博士當時受多間媒體採訪。

有見最近多宗疑似喉管播毒,再次引起市民恐慌,香港管綫專業學會邀請到香港大學客席助理教授許俊民博士擔任是次招待會講者之一。許博士乃是當年淘大花園傳播途徑研究項目的主要調查人員,許博士以當年沙士調查經驗對比現時新冠病毒情況,以專家角度深入探討喉管播毒危機。

另外講者之一香港管綫專業學會前會長、國際管綫專業學會執行會長黃敬博士講解樓宇排污管道系統與新冠病毒的關係。此外,他還介紹了地下管道檢查高新科技及如何在惡劣環境應用。同時,黃博士表示管道專業人員在抗疫中擔當重要角色。最後,他提出防止擾流的創新設計,希望有助解決渠道播毒問題。



### Devents 密閉空間工作安全記憶活停會

### Date & Time:

2021年11月20日下午11:30 - 下午12:30

### Organizer:

香港管綫專業學會

### Speaker:

黃敬博士、管綫專業監察師 (香港管綫專業學會前會長;國際管綫專業學會執行會長)

### Media:

無線新聞、有線新聞、東方日報、香港01、香港電台(RTHK)

### **Program highlights:**

於 2021年11月18日,小蠔灣污水處理廠發生一宗嚴重的密閉空間工作意外,3男1女職員進入約8米深的污水井工作時被困,事件最終造成一人傷重死亡及三人嚴重受傷,此事故亦令大眾關注進行地下工程的安全性。香港管綫專業學會前會長、現任社建中心會長黃敬博士為此進行記者招待會以作出對密閉空間工作安全的建議。

黃敬博士認為派工人進入密閉空間工作應可免則免,應該優先考慮使用 先進儀器代替工人以身犯險。地下管綫行業的探測儀器日新月異,部分 儀器更可以代替工人親身入渠探測,妥善運用先進的科技絕對可以減低 工業意外。

黃敬博士最後語重深長地表示事外是可以避免的,各位僱主和僱員千萬 不可以忽視密閉空間工作的安全,並希望業界人士或者政府慎重考慮以 上建議,加快實施和推廣密閉空間安全,減少工業事外。







Demonstrating standard personal protection equipment when working under confined space





Demonstrating the safety equipment in construction

The 1st International Conference on Utility Management and Safety 2009

Date: 2nd-3rd March, 2009

**Venue: Kowloon Shangri-La Hotel** 





The 2nd International Conference on Utility Management and Safety 2011

Date: 7-8 March, 2011

**Venue: L' Hotel Nina et Convention Centre** 





The 3rd International Conference on Utility Management and Safety 2013

Date: 30th October, 2013 - 1st November, 2013

**Venue: Hong Kong Convention and Exhibition Center** 





The 4th International Conference on Utility Management and Safety 2014

Date: 14th - 16th November 2014

Venue: China National Convention Center, Beijing, China





The 5th International Conference on Utility Management and Safety 2017

Date: 29th - 31st March 2017 Venue: Regal Kowloon Hotel





The 6th International Conference on Utility Management and Safety 2018

Date: 27th to 29th November 2018

Venue: The Canton Fair Complex, Guangzhou, China





### 香港特別行政區政府 發展局局長



### SECRETARY FOR DEVELOPMENT

Government of the Hong Kong Special Administrative Region

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業

國際管綫專業學會邁向五週年誌慶香港管綫專業學會二十週年會慶暨

漢咖豪用



## 際管綫專業學會邁向五 香港管綫專業學會二十 五周年紀念特刊 一十周年及

或

## 播戀四達

民政及青年事務局局長麥美娟





國際管綫專業學會邁向五 香港管綫專業學會二十週年會慶暨 週年誌慶

# 續

環境及生態局局長謝展寰





### 國香 際港 ·管綫專業與 學學 會 會邁 五週 週年 年會 誌慶 慶暨

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國香 際 港 管管 綫 綫 專專 業業 學學 會 尚十 五週 週年 丰會 誌 慶

慶暨

屋宇署署長余寳美





## 國際管綫專業學會邁向五周年誌慶國際管綫專業學會邁向五周年誌慶

香港管綫專業學會二十周年

暨

渠務署署長 彭雅妮



## 締構專業溥惠民才彥羅聚展動力

機電工程署署長 彭耀雄





# 选縣與強

香港管綫專業學會二十週年會慶暨國際管綫專業學會邁向五週年誌慶

路政署署長陳派明





野國際管綫專業學會二十周年會慶香港管綫專業學會二十周年會慶

規劃署署長鍾文傑





國際管綫專業學會邁向五周年誌慶香港管綫專業學會二十周年及

## 專才碩劃

譽 遠 圖

運輸署署長 羅淑佩







國香 際港 管管 綫綫 業業 五週 週年 誌慶

慶暨

市區重建局行政總監

韋志成敬賀







香港房屋協會主席

敬賀

陳家樂

週年誌

國際管綫專業學會邁向五週年誌香港管綫專業學會二十週年暨

慶



# 會務圖點

香港理工大學校長滕錦光



敬賀





28 March 2022

### Congratulatory message for HKIUS 20th Anniversary and IIUS towards 5th Anniversary Publications

In these challenging times, it is a delight to know that the Hong Kong Institute of Utility Specialists (HKIUS) and the International Institute of Utility Specialists (IIUS) continue to promote the best possible technologies for improving safety for the construction industry. Safety is paramount at all times, and we applaud the work that both HKIUS and IIUS conduct in this regard. No doubt when the pandemic eases, we will see both bodies earnestly enhancing utility safety with renewed energy throughout Hong Kong and the region.

On behalf of everyone at City University of Hong Kong, our most sincere congratulations to HKIUS on the occasion of its 20th anniversary and IIUS for its 5th anniversary.

Way Kuo

President and University Distinguished Professor

City University of Hong Kong

Molen

### 香港浸會大學 HONG KONG BAPTIST UNIVERSITY



# 野業 利激聚

香港管綫專業學會二十周年暨

或

際管綫專業學會五周年會慶特刊題辭

香港浸會大學校長

衛級江



敬賀

或 香港管綫專業學會成立 際管綫專業學會成立 五 職 週十年週 業 - 週年暨 訓

職業訓練局執行幹事 由

唐智強



### 賢德進集

### 冉創新猷

全國政協委員

陳卓禧博士敬賀 港專學院、香港專業進修學校校長





### **Congratulatory Message**

It gives me immense pleasure to compliment the entire team of HKIUS & IIUS on their 5th Anniversary Publications. Their efforts introducing efficient and effective advanced technologies to improve utility safety are the foundation on which these two apex organisations excelled and released have these have publications. Indian Society for Trenchless Technology is a member of their global network and wishes the entire HKIUS & IIUS network success in their all future endeavors as well. We would also look forward to enhance cooperation and assist promotion of these publications.

With best Regards,
Dr. Niranjan Swarup
Director General
Indian Society for Trenchless Technology



### 香港建築師學會 The Hong Kong Institute of Architects



敬賀

香港測量師學會



### 原管綫事業學會五週年誌慶 「際管綫事業學會五週年誌慶

香港測量師學會

### 揚業

### 總辦事處 Head Office

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### 香港職業安全衛生協會 The Hong Kong Occupational Safety and Health Association

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### 屋宇設備運行及維修行政人員學會

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劉國維工程師 敬賀

### **HKARMS** Hong Kong Association of Risk Management and Safety

www.hkarms.org

22 March 2022

Congratulatory Message for HKIUS 20th Anniversary and IIUS 5th Anniversary



### **HKIUS 20th Anniversary and IIUS 5th Anniversary**

On behalf of the Hong Kong Association of Risk Management and Safety (HKARMS), I would like to congratulate the Hong Kong Institute of Utility Specialists (HKIUS) on its 20<sup>th</sup> Anniversary, and the International Institute of Utility Specialists (IIUS) towards its 5<sup>th</sup> Anniversary.

HKIUS and IIUS have all along demonstrated its professionalism and commitment to a better environment by making invaluable contributions to the promotion of professional standard in the utility industry, and raising public awareness on utility management and safety to the benefit of society. With the dedication of your members, no doubt in my mind that you will continue to strive for further development and enhance the benefits to the industry and the community.

May I take this opportunity to wish the HKIUS and IIUS every success in the years ahead.

Yours sincerely,

Ir Prof Vincent Ho Chairman, HKARMS



### **共展宏猷**

林健榮測量師香港建造商會會長



### 繼絕開水

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### **Congratulatory Message**

### **HKIUS 20th Anniversary and**

### **IIUS towards 5th Anniversary Publications**

On behalf of the Hong Kong Federation of Electrical and Mechanical Contractors, I would like to offer HKIUS and IIUS my heartiest congratulations on the occasion of their Anniversary Publications.

In the 20 years since the establishment of the HKIUS and the approach to 5 years since the establishment of the IIUS, both institutions have made great strides in lifting the professionalism and the quality standard of underground utility management in Hong Kong. This achievement is attained with the relentless effort of the institutions' members in actively promoting the technics and upholding the standards of underground survey with the goal of maintaining utility safety.

I wish the HKIUS and IIUS continued success for the benefit of the sustainability of a world class utility system in Hong Kong.

Yours very sincerely,

Rocky POON

President

Hong Kong Federation of Electrical and Mechanical Contractors

國際管綫專業學會



### **典**割表水水

香港房屋經理學會



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### Congratulatory Message from the Chairman of the Institution of Engineering and Technology Hong Kong

I am pleased to offer my warmest congratulations to the Hong Kong Institute of Utility Specialists (HKIUS) and the International Institute of Utility Specialists (IIUS) on their occasion of the HKIUS 20th Anniversary and IIUS towards 5th Anniversary Publications.

On this very special occasion, I wish HKIUS, IIUS and their members every success in the years ahead.

Ir Keith Chan

Chairman (Session 2022)

The Institution of Engineering and Technology Hong Kong





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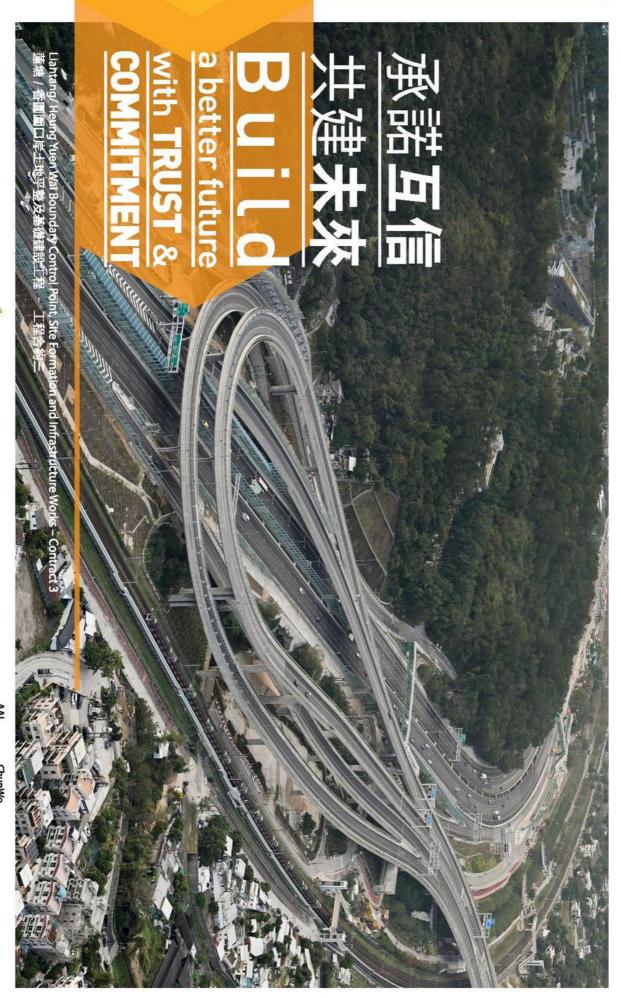
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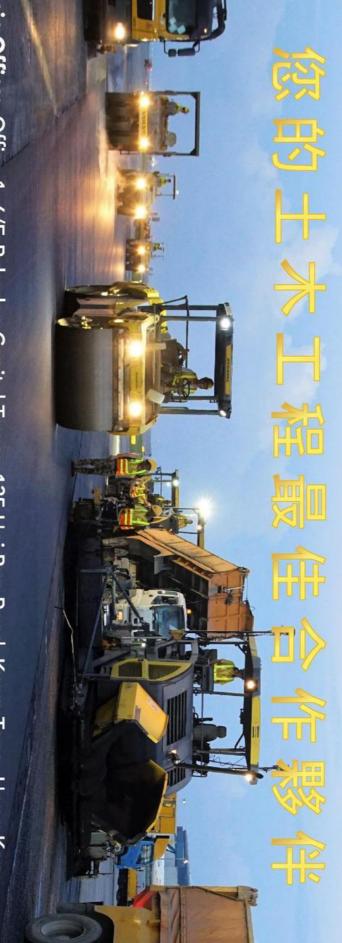












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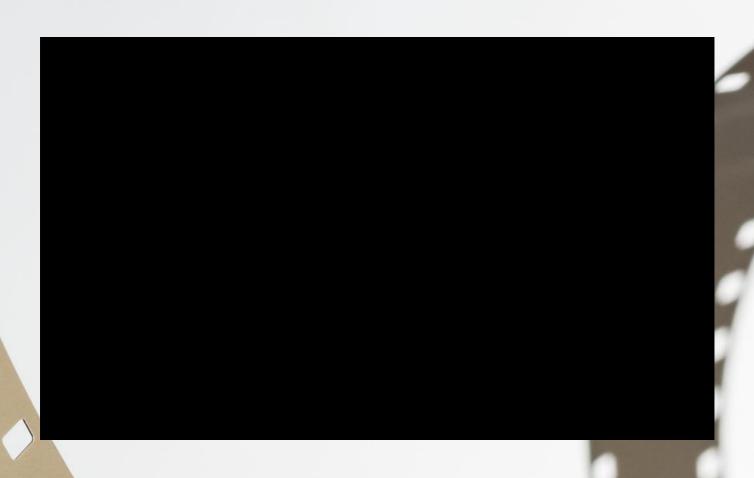
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Pipe Information: 1200mm diameter sewer drainiage with total length 86m Minimum half-bore over full day Full bore in day time Manholes depth in 4m - 6m Flow Diversion: Estimated Volume of flow to be diverted ~ 1800m³ 200m temporary flow diversion length Off-peak duration less than 10 hour, 21:00~06:00 7No. Of Sewerage Pump Used – 1 for spare Diverted Flow ~19500m³ x 60day = 1,170,000m³ Lining Setup: Longest Length Material Weight in 4.5ton / 40m RB Crane and Crane Lorry for Lifting of Liner Longest Length of Pipe Completed in 24hour included 1. Setup 2. Installation 3.Curing 4.Finishing

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### POLICIES TO IMPROVE THE STANDARD

### **BACKGROUND**

The growing need of utility survey is triggered by the increasing awareness of tragedies which have been caused by insufficient monitoring and maintenance of underground utilities. One typical example is the disastrous landslide which happened at Kwun Lung Lau on 23 July 1994, triggered by constant water seepage due to defective drainage network buried in the slope.

### **Proper Management of Road Opening**

Due to the high density of population and economic activities in Hong Kong, utility undertakers here have been used to adopting a flexible and accommodating attitude towards each other. Underground utility lines have often been put in the ground by subcontractors not according to plan but wherever it has been easiest and cheapest to put them. Compounding the problem, 2D as-built records of underground infrastructure are notoriously unreliable because they give no details of the burial depth and vertical clearances amongst the utilities.

Due to the high density of population and economic activities in Hong Kong, utility undertakers here have been used to adopting a flexible and accommodating attitude towards each other. Underground utility lines have often been put in the ground by subcontractors not according to plan but wherever it has been easiest and cheapest to put them. Compounding the problem, 2D as-built records of underground infrastructure are notoriously unreliable because they give no details of the burial depth and vertical clearances amongst the utilities.

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### POLICIES TO IMPROVE THE STANDARD

Frequency of utility damage and maintenance in Hong Kong is high because of the following reasons:

(a)Many of the utilities are laid more than 30 years ago and is approaching or has already passed their replacement date. For instance, in 2018, the leakage rate of water mains in Hong Kong was 15.2 percent – worse than the rate in most other world cities.

Singapore has a 5 percent leakage rate, while Lisbon has an 8 percent rate, according to the Organization for Economic Cooperation and Development.

- (b)By nature of the town planning in Hong Kong, heavy traffic is concentrated on major roads within the city. This caused vibration and disturbances to roads and damage to utilities.
- (c)From time to time, these underground services would require repair and maintenance as well as expansion, so as to keep up with the rapid pace of the development and redevelopment in the territory.

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### POLICIES TO IMPROVE THE STANDARD

Currently there are about 20 major utility undertakings who install their services beneath public roads.

Apart from traditional services such as fresh and flush water, electricity, gas, stormwater drains, sewers, telecommunication infrastructure makes up a major portion of underground infrastructures.

With the increasing reliance on telecommunication and 5G technology, the underground space is expected to be even more congested and road opening more frequent. In fact, diversion time dealing with telecommunication cables (fiber-optics) may take months or even years because of their sensitivities and coverage of business customers.

It is therefore critical to conduct advance utility survey of the telecommunication cables at planning stage of road opening and major projects.

### 管綫專業,你我攜手共建更好明天

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### POLICIES TO IMPROVE THE STANDARD

According to Report No. 70 published by the Director of Audit in 2018, while the total number of normal excavation permits (NXPs) and capital works excavation permits (CWXPs) decreased from 13,297 in 2010 to 8,921 in 2016, the number of excavation permits (XPs) with extension increased by 78% from 727 in 2010 to 1,293 in 2016. As a result, the number of XPs with extension as a percentage of NXPs and CWXPs authorized increased from 5% to 14%.

The average extension period also increased by 90% from 48 days to 91 days during the period. Based on analysis of records as of November 2017, of the 1,061 XPs issued in 2016 which were granted extensions, 517 XPs (49%) were related to government departments, 348 (33%) to other utility undertakings and 196 (18%) to infrequent applicants (i.e. ad hoc applicants).

According to the Highways Department, obstruction by existing underground utilities is considered as one of the most common grounds for the extension of XP period. In view of the large percentage of extended XPs involving government projects, the Director of Audit recommends that the Development Bureau should remind works departments to make greater efforts to ascertain the underground conditions before applying for XPs.

WE STRIVE FOR ENHANCING PROFESSIONAL STANDARDS IN THE UTILITY INDUSTRY!

#### POLICIES TO IMPROVE THE STANDARD

Unless detailed utility survey is carried out prior to design, it is impossible to ascertain the location of utilities in the proximity of the proposed underground structures, less to say to optimize the depth and alignment of the underground structures.

Contracts are often let with only the indicative location of utilities shown, and put the onus on the contractor to confirm the location of the utilities during execution of the works.

This seems to be able to give the consultant and the client a sense of false security. In reality, when the work of the contractor is seriously affected by unforeseeable existence or location of utilities, the contractor can often put it a claim for infeasibility of the work, since the time for diversion/relocation of such utilities usually involve government administrative procedures that take over one year, and is totally outside the control of the contractor.

The client is often caught in between the consultant and the contractor, and most likely has to foot the bill for the negligence of the consultant. If the client is the government department or a majority state-owned company, such as MTRC, public expenditure may be need to pay for the claim, and that will likely spark concern for accountability.

WE STRIVE FOR ENHANCING PROFESSIONAL STANDARDS IN THE UTILITY INDUSTRY!

#### POLICIES TO IMPROVE THE STANDARD

According to the Report by the Independent Board Committee on the delay and cost overrun of the Express Rail Link Project (which suffered two years delay), unforeseen utility diversion complications are considered a major reason for the delay.

Quoting from the report: "Due to the heavy daily volume of traffic using the eight-lane Jordan Road, road closure for site investigation had not been pursued so as not to cause major traffic blockage. The ground condition under Jordon Road was not adequately documented until the road was moved from its original location after construction had started. It is for this reason that the ground conditions and extensive utilities (and how closely laid and intertwined these utilities were) under Jordon Road could not be mapped prior to construction work commencing."

Late utility diversions and late design of measures to overcome complex utility arrangements was considered a major reason for the delay suffered in the execution of Contract 810A, Contract 810B, Contract 811A and Contract 811B of the West Kowloon Terminus.

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#### POLICIES TO IMPROVE THE STANDARD

Compare to other Railway Projects, including the Express Rail Link Project mentioned above, Shatin Central Link Project has less issues associated with underground utilities with respect to program, cost and damage incidents.

The Comprehensive Utility Survey Consultancy managed by the MTRC at the early stage of the Shatin Central Link Project might have contributed to the improvement. HKIUS High Survey Standard have been adopted in carrying out utility surveying works for the entire SCL including Exhibition Station site.

The results of the survey enabled smooth finalization of the design of the alignment and the station structures, and facilitated both the designer and the contractors to devise measures for utility protection and utility diversion schemes at an early stage of the project.

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#### POLICIES TO IMPROVE THE STANDARD

THE NEED TO ESTABLISH STANDARD FOR UTILITY SURVEY IN HONG KONG

#### **Regulation of the Utility Survey Professionals**

Currently, there are around 3,000 practitioners working on utility survey. For this, only about one-third received some type of training, and only ten percent can be accredited as professionals who have met the requirements of HKIUS. This is of course unsatisfactory given the high social impact and monetary costs of inaccurate survey results.

There is no government regulation of practitioners. Of all the government departments, only EMSD has, under Chapter 406h, stated requirements for Competent Persons to carry out survey of electricity cables. Even then, the requirement is only for the practitioner to have passed a course in locating electricity cable and to have six months of experience. Such requirement is considered very loose in view of the ever increasing complexity of utility survey technology and the tremendous cost implications of inaccurate survey results.

In Hong Kong, there is a general lack of recognition of the qualification of utility survey professionals.

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## POLICIES TO IMPROVE THE STANDARD

In sharp contrast to the Hong Kong situation, the qualification of utility survey practitioners in China is highly regulated. In China, the Underground Pipeline Committee of the CACP (UPCC) (中國城市規劃協會地下管綫專業委員會) governs the requirements of approved contractors qualified for carrying out utility survey.

These requirements cover the number of qualified professionals employed, the relevant experience of previous work, and the resources in terms of equipment and working capital. Approved contractors are divided into four classes, similar to the system of approved contractors used by works departments in Hong Kong.

Similar to the works departments in Hong Kong, the committee also publishes standards and guidelines for the industry in line with relevant governing legislations. Only practitioners who have been properly trained by the committee and have passed the relevant examinations are considered as qualified professionals.

According to a recent survey, around 50 percent of utility survey practitioners in China hold bachelor or high university degree, and 35 percent of the practitioners are qualified professional engineers.

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#### POLICIES TO IMPROVE THE STANDARD

In England, RICS includes utility survey as a specialist branch of geospatial survey, Practitioners who have received proper training and have accumulated adequate experience can acquire status as members of RICS.

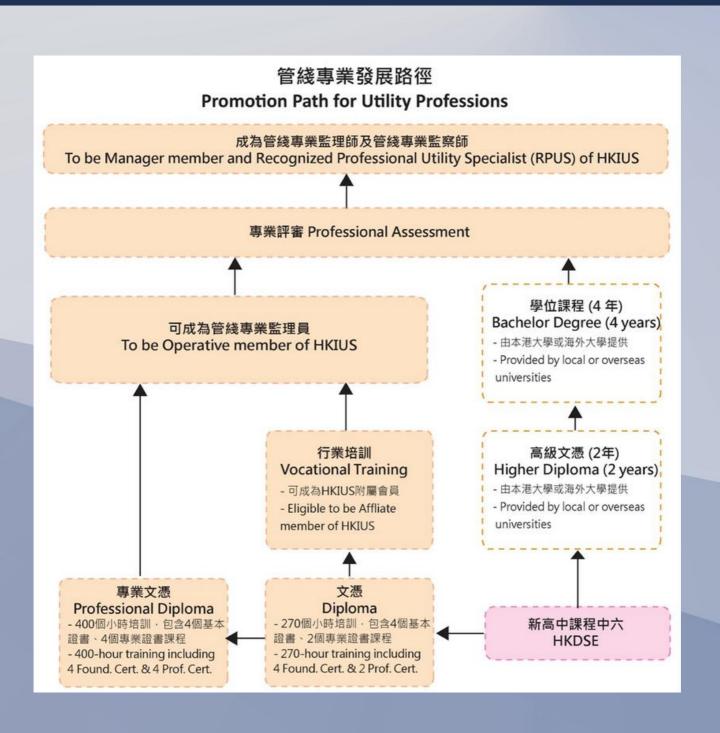
As technology evolves, the technical knowledge required of utility survey professionals is getting more demanding by the day.

The demand of utility survey involves not only the use of various survey techniques and the theories behind them, but also extends to detail 3D underground/subsurface mapping with precise land surveying technologies, and customization of the information from different utility undertakers into unified database using GIS.

The Hong Kong Institute of Utility Specialist has recommended the following pathway for advancing career development of utility survey practitioners in Hong Kong. Through their effort, there are now courses offered in the universities that provide the necessary training.

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#### POLICIES TO IMPROVE THE STANDARD



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#### POLICIES TO IMPROVE THE STANDARD

Given the sophisticate training required and the potentially serious consequences of erroneous utility survey results, it is considered high time that the government set up proper legislative framework to control and regulate the utility survey professionals so that they are properly trained and are held more accountable for the survey result.

#### Survey Standards should be Established

There are various techniques of utility survey, each can achieve accuracy suitable for the particular purpose for which the survey results are put to. Manhole survey and CCTV conduit survey can achieve very high accuracy when properly combined with topographic survey. Pipe/cable locators and ground penetration radar can achieve positional and depth accuracies of 50-150mm down to a depth of 1.5-2m, as long as the site conditions and subsoil conditions are not too constraining. It is possible to detect larger utilities at greater depths.

It must also be appreciated that radio-detection will not detect non-metallic utilities whereas ground penetration radar can pick up most material types. A well designed and executed survey should be able to detect 95 percent of all the utilities. The designated confidence level of a survey should be commensurate with the level of risk associate with the specific survey area. The rule of diminishing return holds when trying to achieve extremely high level of accuracy, which may not be necessary after all.

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#### POLICIES TO IMPROVE THE STANDARD

This is why most international standards, such as PAS 128 (The UK Standard), recommend a hierarchical methodology to underground utility surveying for different levels of accuracy:

- (a) Quality Level A: The highest level being a verification survey where critical utilities are exposed so that their precise position and depth can be verified.
- (b) Quality Level B: A detection survey of utilities carried out using, as a minimum, two techniques of electromagnetic location and ground probing radar. There are four accuracy bands which the surveyor allots to each utility detected. These reflect the accuracy and confidence of the detection results.
- (c) Quality Level C: A reconnaissance survey correlating, where possible, the results of the record drawings with surface features related to the buried utilities thus improving the quality of the record media.
- (d) Quality Level D: The lowest level of survey being essentially a utility record search.

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## POLICIES TO IMPROVE THE STANDARD

Hong Kong Institute of Utility Specialist has recommended their own accuracy requirements (in terms of tolerance and confidence level) for various types of utility surveys, including conduit condition evaluation, manhole internal condition survey, comprehensive utility survey, and water leakage detection and control. For comprehensive utility survey, the institute recommends the following level of accuracy:

Level	Purpose	Tolerance (mm)	Confidence Level	Professionals
I	Project Planning Stage	300	80%	AMHKIUS/OMHKIUS
п	Project Design Stage	250	85%	OMHKIUS/MHKIUS
III	Project Execution Stage	200	90%	OMHKIUS/MHKIUS/ FHKIUS for site operation; MHKIUS/FHKIUS/RPUS for report endorsement
IV	Investigation Report	Up to 165	Up to 95%	
V	Underground BIM	Refer to Level III or IV		

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However, there is currently little legislation and government guideline to stipulate the level of accuracy of utility survey. What we have as guideline for the industry now tends to be piecemeal and limited in scope of coverage.

For example, the Code of Practice on Monitoring and Maintenance of Water Carrying Services Affecting Slopes was initially enacted in 1996 and revised in 2006. The Gas Safety Ordinance, and Electricity Supply Lines (Protection) Regulation was enacted in 1997 and 2002 respectively. This is certainly inadequate given that there are more than 20 utility undertakers, each laying and recording their utility network according to its own preferred level of accuracy.

Utility survey practitioners have to deal with an ever increasing complex and uncertain underground utility spider network made up of water supply, drainage, sewerage, power, gas, and telecommunication cables.

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#### POLICIES TO IMPROVE THE STANDARD

In other parts of China, all utility survey has to be carried out under supervision of a third party, and the legislative framework relating to utility survey is much more comprehensive and well established. Some of the legislations include:

- (a)地下管綫電磁法探測規程 (YB/T9027-94)
- (b)城市地下管綫探測技術規程 (CJJ 61-94)
- (c)城市地下管綫探測技術規程(CJJ 61-2003)
- (d)管綫測繪技術規程 (CH/T 6002-2005)
- (e)城市地下管綫探測技術規程 (CJJ 61-2017)
- (f)地下管綫資料獲取規程 (GB/T 35644-2017)
- (g)石油化工廠區管綫綜合技術規範 (GB50542-2009)
- (h)城鎮供水管道漏水探測技術規程(CJJ159-2011)
- (i)城鎮排水管道檢測與評估技術規程(CJJ181-2012)
- (j)城鎮燃氣管網洩漏檢測技術規程(CJJ/T 215-2014)
- (k)城市地下管綫探測工程監理導則 (RISN-TG011-2010)

It is largely because of such a comprehensive legislative framework that there are only 113 reported cases of utility damage during road opening in the whole of China between October 2018 and September 2019. This is quite a feat considering that there nearly 700 cities in China.

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#### POLICIES TO IMPROVE THE STANDARD

A summary of the history of development of legislative framework in other countries is presented below:

- (a) The USA was the first to standardize survey practices, where the American Society of Civil Engineers (ASCE) developed guidelines for the collection and depiction of existing subsurface utility data, known as ASCE 38/02, in 2002
- (b) Malaysia adopted most of ASCE38/02 in its standard
- (c) In 2011, the Canadian Standards Institute published CSA S250-11
- (d) Australia published its version of utility standard, AS 5488-2013, in 2013
- (e) In 2014, the British Standards Institute published PAS128 for underground utility detection, verification, and location. The aim of PAS128 is to provide:
- (i) Clarity in the service provided and methods employed
- (ii) Consistency in the approach of data capture
- (iii) Classification of the results and the confidence that can be associated
- (iv) Standardization of the format of deliverables, and Accountability for the work undertaken.

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#### POLICIES TO IMPROVE THE STANDARD

At the moment, only the Hong Kong Institute of Utility Specialists has published the following guidelines in an effort to improve the standard of utility survey in Hong Kong. These guidelines are gaining recognition from major stakeholders in Hong Kong (including MTRC), as well as government of other Asian countries:

- (a) Particular Specification For Utility Mapping By non-Destructive Methods
- (b) Particular Specification For Buried Water Carrying Services Affecting Slopes
- (c) Particular Specification For Water Leakage Detection Survey Particular Specification For Manhole Internal Condition Survey.

Given the Hong Kong is a well- developed international city, it is inconceivable that we are not able to achieve an internationally accepted level of professional quality in utility survey.

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#### POLICIES TO IMPROVE THE STANDARD

#### **POLICIES SOUGHT**

The following policy improvement measures are recommended:

- (a) Utility survey report should be submitted as part of the application for Excavation Permit.
- (b) High quality utility survey report should be prepared prior to engineering design which involves excavation that may affect, or be affected, by existing utilities.
- (c) Establish legislation and regulations to control and regulate the utility survey professionals so as to ensure that they are properly trained and are held more accountable for the survey results.
- (d) Establish legislative framework and publish standards and guidelines for underground utility detection, verification, and location.
- (e) The recognition or registration of utility specialists as professionals.

#### REFERENCE:

1. "CHAPTER 4 - GOVERNMENT'S EFFORTS IN MANAGING EXCAVATION WORKS ON PUBLIC ROADS" OF "REPORT NO.70 OF THE DIRECTOR OF AUDIT" BY AUDIT COMMISSION ON 3 APRIL 2018

2."FIRST REPORT BY THE INDEPENDENT BOARD COMMITTEE ON THE EXPRESS RAIL LINK PROJECT" BY MTRC IN JULY 2014

