



International Institute of Utility Specialists



Hong Kong Institute of Utility Specialists

Utility Specialists in the New Era

SABAH International Surveyors congress 2014

Plenary 2 “SURVEYORS: EXPLORING NEW FRONTIER”

(Fostering Domestic Capacity for Economic Growth)

11 March, 2014

Ir Dr. King Wong (黃敬博士、工程師)

- President (13/15), Hong Kong Institute of Utility Specialists, HKIUS (香港管綫專業學會)
- Secretary General, Hong Kong Utility Research Centre, HKURC (香港管綫管理研究中心)
- Convenor, International Institute of Utility Specialists, (國際管綫專業學會)
- Executive Director, Utility Training Institute, UTI (管綫學院)

PROFESSIONALS IN CONSTRUCTION INDUSTRY...

- **Engineers** 工程師
- **Architects** 建築師
- **Surveyors** 測量師
- **Planners** 規劃師
- **Landscape architects** 園境師

PROFESSIONALS IN CONSTRUCTION INDUSTRY...

Now...

- Utility specialists
- **Operative**
管綫專業監理員
- **Manager**
管綫專業監理師
- **Fellow**
管綫專業監理師
- **Recognized Professional Utility Specialist, RPUS**
管綫專業監察師
- are blooming and gain more attention from the construction industry as the **6th profession.**

1. WHAT IS UTILITY SPECIALIST (US)?

Utilities

Safety

Others

Location

Condition

Management

2. WHY UTILITY SURVEY

- a. **Statutory requirements (Cap51B, Cap406H, Telecom, Water Ordinances)**
- b. **Contract Requirements**
- c. **High Living Standards and less disturbance to the public**
- d. **To achieve good work progress with less incidents**
- e. **Organization reputation**
- f. **To save social costs**

CONSULTANCY SERVICES (FOR CONTRACTORS) – 3 STAGES

1. Tendering Stage

Services

- Utilize TUG's IDMS II, client may more easily understand the complexity of utilities in the tender in a earlier stage

Benefits

- TUG can provide the best consultancy services during the tender process
- Better project control and cost estimation during tendering process

CONSULTANCY SERVICES – 3 STAGES

2. Planning Stage

Service s

- **Efficient allocation of resources as TUG provides 13 fully ready disciplines of services in utility survey.**

Benefits

- TUG has a large pool of project managers, CTO, CP with relevant experience.
- Accurate project costing is estimated to help a smooth project planning.
- Avoid of unexpected project slippage.
- Better project management can be achieved.

CONSULTANCY SERVICES – 3 STAGES

3. Work Stage

Services

- E.g. CUS, call **6888 6600** before dig, WLD

Benefits

- TUG works as a close partner like the client's group member companies
- Clients can communicate easily with TUG as TUG fully understands the tenders and projects in advance due to earlier engagement in the tenders

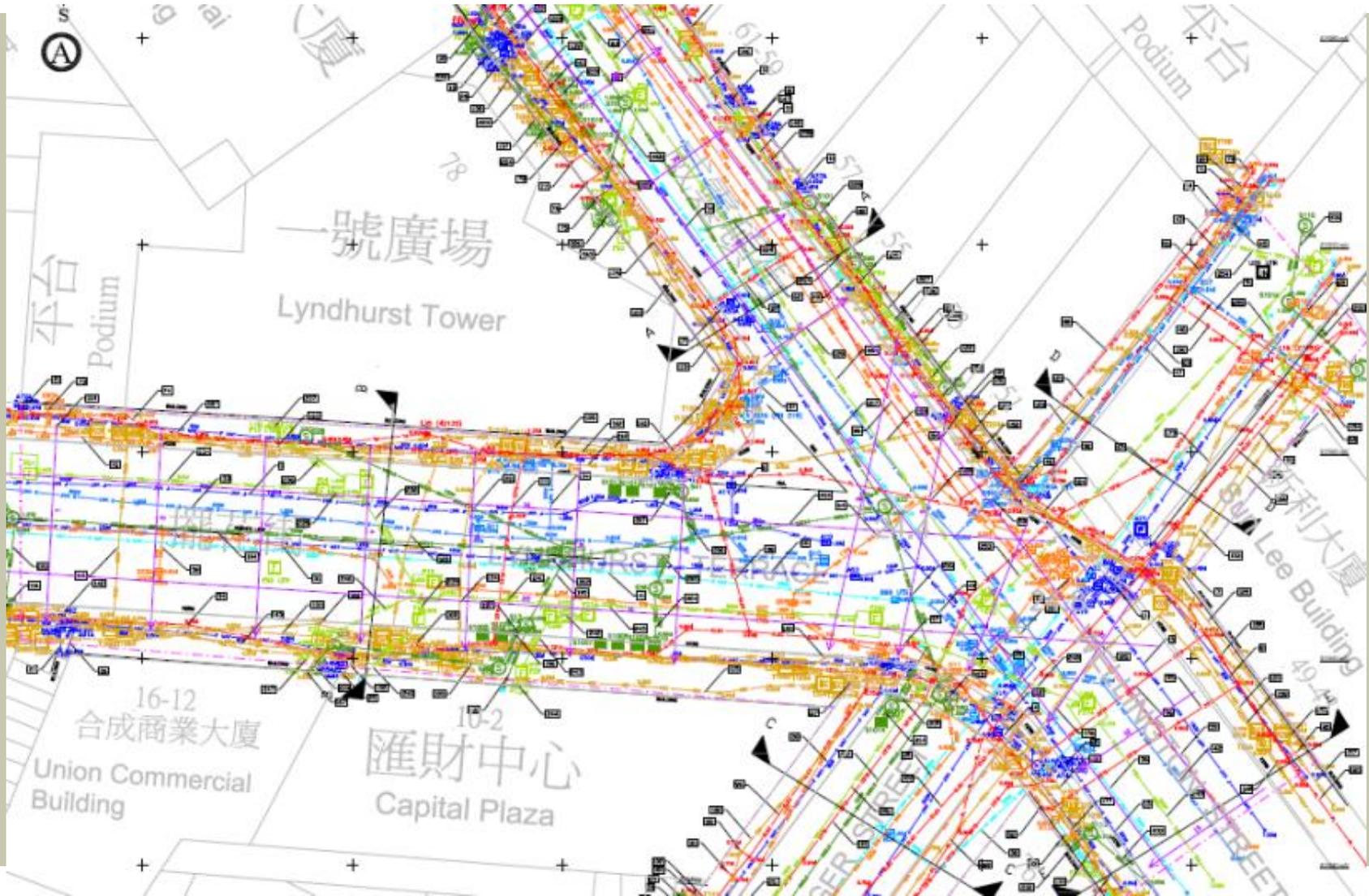
PROFESSIONAL?



WHY PROFESSIONALS



WHY PROFESSIONALS



3. CONSEQUENCE OF INACCURATE SURVEYS!



SUCCESSFUL PROJECT – TRUNK SEWER AND BC

- Consultancy Agreement No. C11024, Utility Investigation for Shatin to Central Link



SUCCESSFUL PROJECT - SAFETY

- Consultancy Work For Providing services of Risk Assessment by RSO and engineering method statement for Tsuen Wan Drainage Tunnel, HKSAR



SUCCESSFUL PROJECT - CONSULTANCY

- Consultancy for Modification/installation of U/G A/C Cooling Water Intake Pipes By Pipe-Jacking for China Insurance Group Building, 141 Connaught Road Central

CLIENT: CHINA INSURANCE GROUP BUILDING

Modification/Installation of U/G A/C Cooling Water Intake Pipe By Pipe Jacking Method
以頂管方法鋪設地下冷氣冷卻水供水管道

CONSULTING ENGINEER
顧問工程師

BU DA BU DA ENGINEERS & CONSULTANTS LIMITED
沛達工程顧問有限公司

PROPERTY MANAGEMENT
物業管理

HARRIMAN PROPERTY MANAGEMENT LTD.
夏利文物業管理有限公司

SPECIALIST CONSULTANT
專家顧問

US & Associates
US & Associates
測量師及監理事務所

MAIN CONTRACTOR:
總承建商

B BESTWIN ENGINEER LTD
加穎工程有限公司

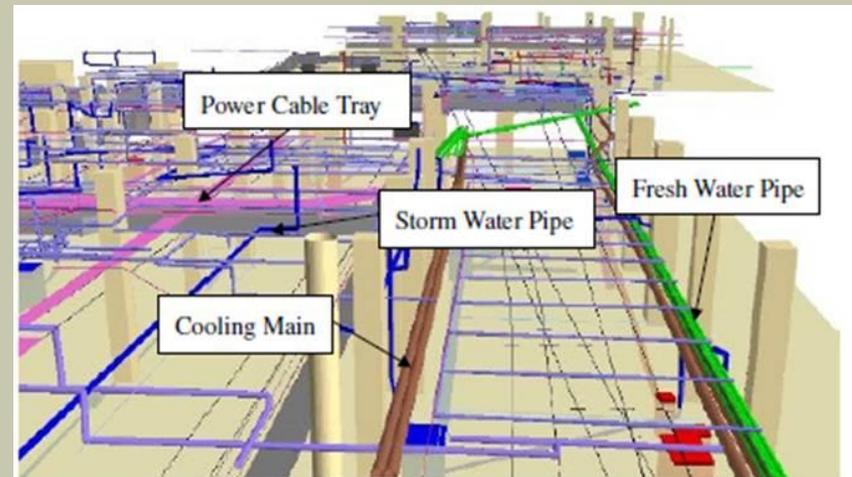
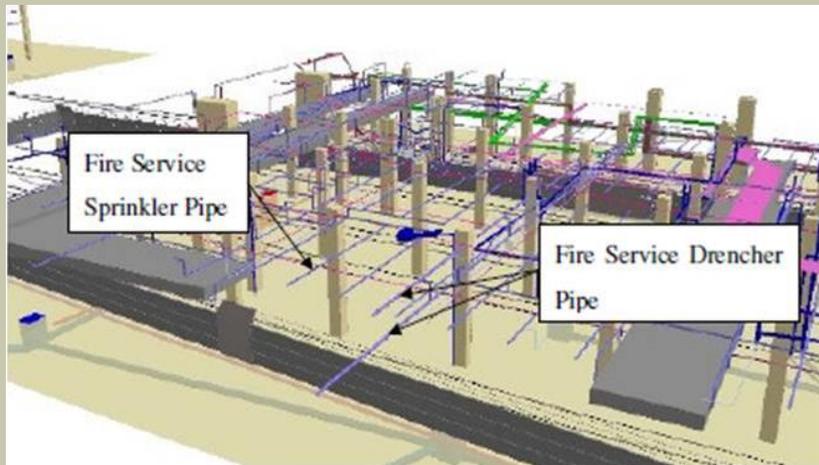
SUCCESSFUL PROJECT - WATERWORKS

- Repair of Underground Flush water supply at Mt. Kellett Road



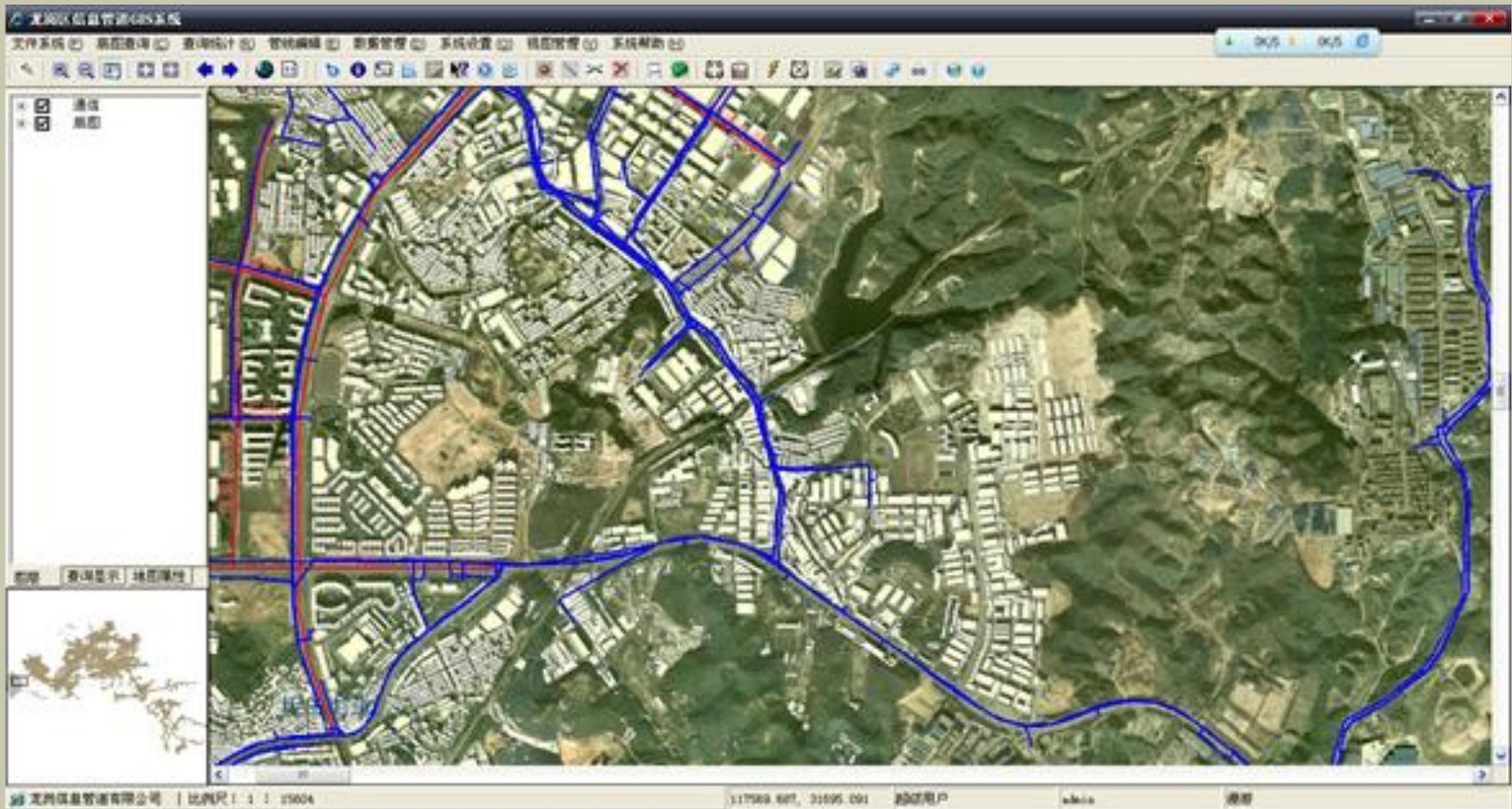
SUCCESSFUL PROJECT - BUILDING

- Utility Identification and 3D Mappings for Railway Station

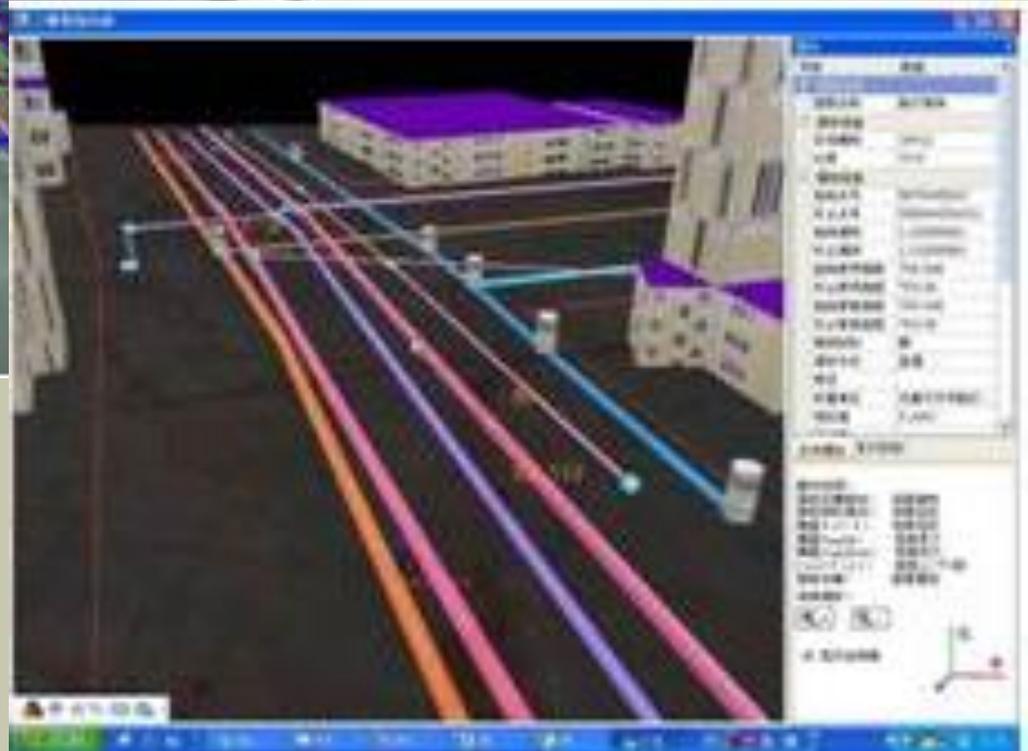
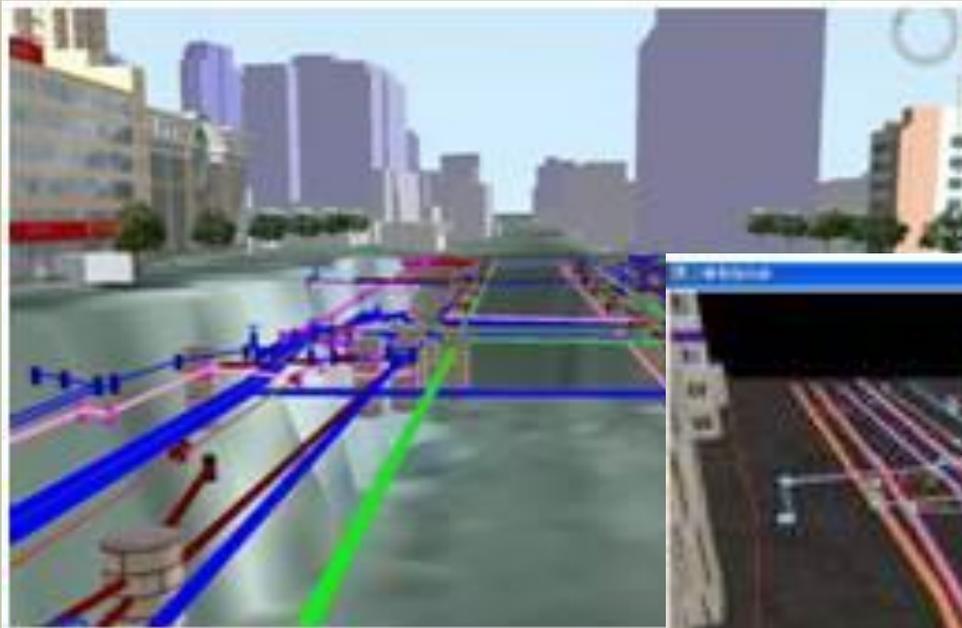


IDMS II

Interface of IDMS II:

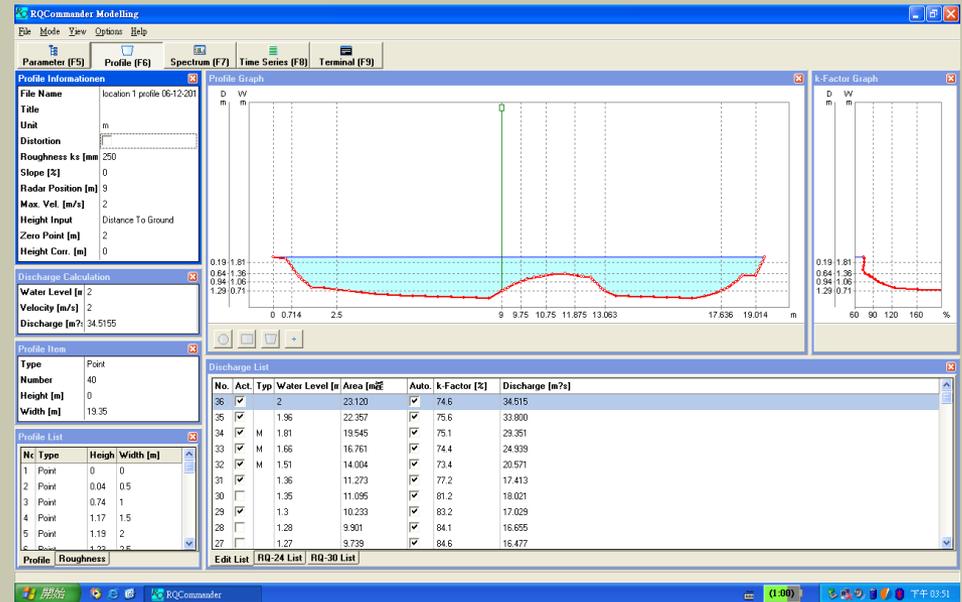
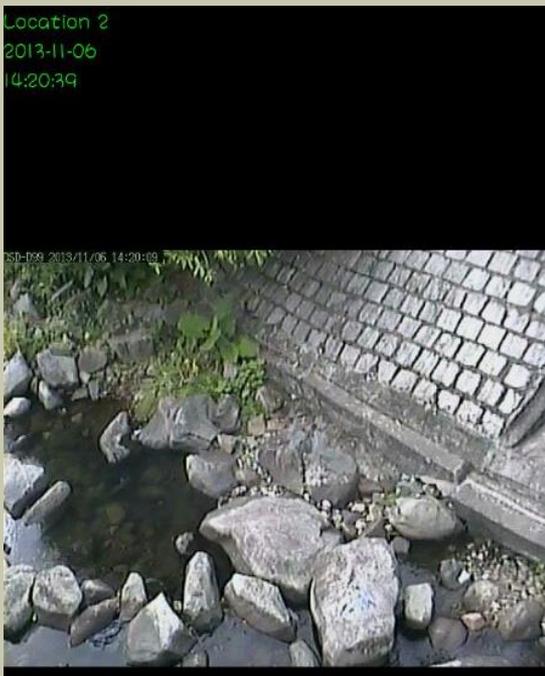


Generated 3D Utility Record Plan



SUCCESSFUL PROJECT - RISK STUDY

■ Contract No. 06LD2013 River Flood Risk Study - Stage 1



SUCCESSFUL PROJECT - FLOW MONITORING

- **Contract 823B Sub-contract Agreement for Existing Stream Flow Monitoring and Reporting System for new railway**



SUCCESSFUL PROJECT – OTHERS

- South Island Line (East) Contract 903 Ocean Park Station, Wong Chuk Hang Station, Vidaducts and Aberdeen Channel Bridge Underground Utilities Survey and Detection



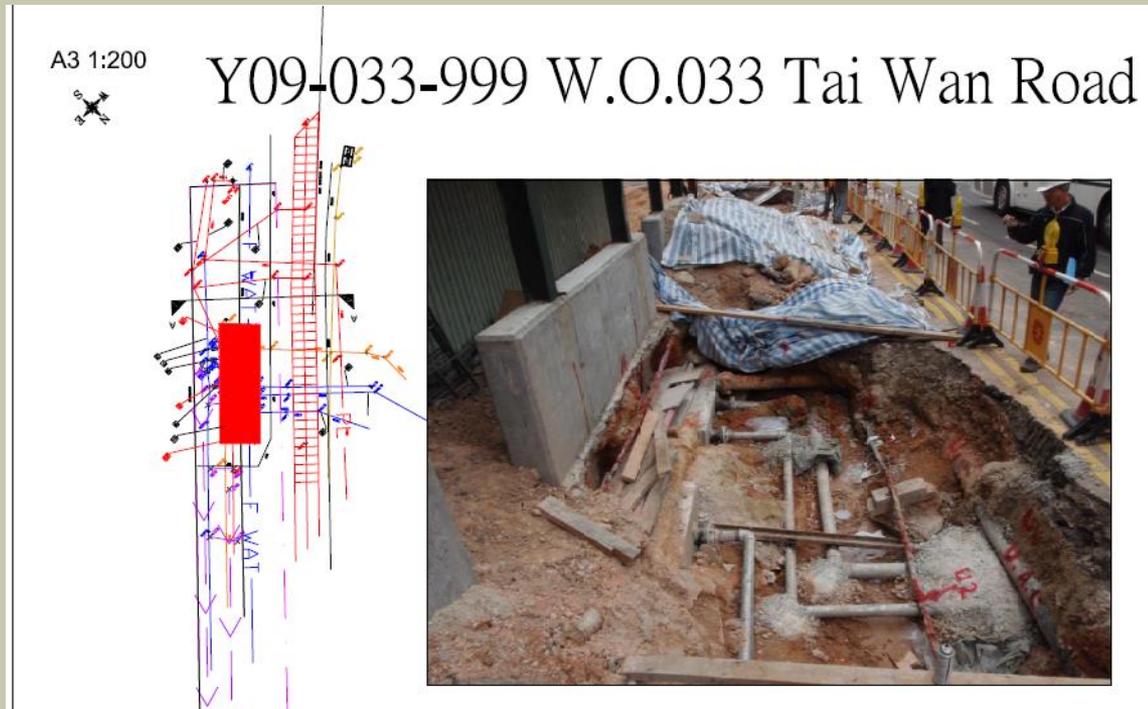
SUCCESSFUL PROJECT – GPR INSIDE BC

- GPR Survey at Decked Nullah, Fu Ning St



SUCCESSFUL PROJECT – 3D MAPPING

- Contract No 20090061 HKHA Utility Survey Term Contract 2009-2011



SUCCESSFUL PROJECT – REHAB

- Joint repair at the Central Reclamation III site for two DN900mm sea water cooling mains by AMEX-10



4. HOW AND WHY PROFESSIONAL MEMBERSHIP CAN HELP?

Rigorous entry and renewal requirements

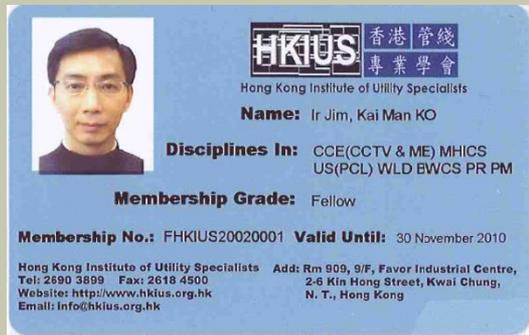
- ✓ Training
- ✓ Education
- ✓ Safety
- ✓ CPD Requirements
- ✓ Job reference
- ✓ Audit

HONG KONG INSTITUTE OF UTILITY SPECIALISTS (HKIUS)-CPD REQUIREMENTS

Individual Members

- ✓ Achieve not less than 35 hours of CPD learning in every calendar year or not less than 70 hours within two consecutive years, 10 hours of which shall be relevant to **safety issues**

REQUIREMENTS OF HKIUS MEMBERSHIP



Membership Renewal Reminder

- At least 35 hours of CPD programmes each year (including 10 hours on occupational safety and health issues)
- Annual Membership Fee
- Digital, passport photo in JPEG format (with high resolution)



Approved by Labour Department that Fellow Members, Manager Members and Operative Members of HKIUS could be issued with a relevant certificate for the construction industry under section 6BA(4) of the **Factories and Industrial Undertakings Ordinance** (“the Ordinance”) as the Commissioner for Labour Department is satisfied that the safety training (“the training”) required for qualifying for such membership is of a standard not less than the relevant safety training course required under section 6BA of the Ordinance.

HONG KONG INSTITUTE OF UTILITY SPECIALISTS (HKIUS)-CPD REQUIREMENTS

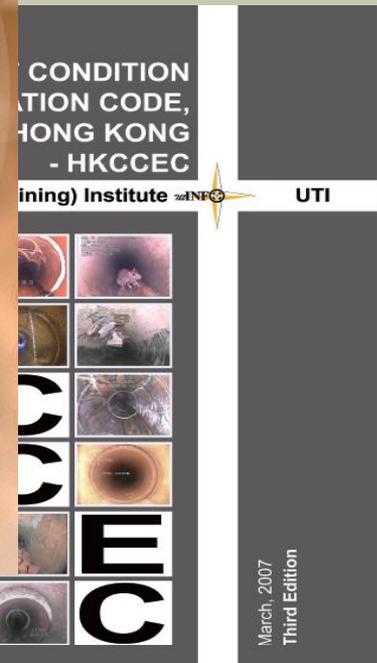
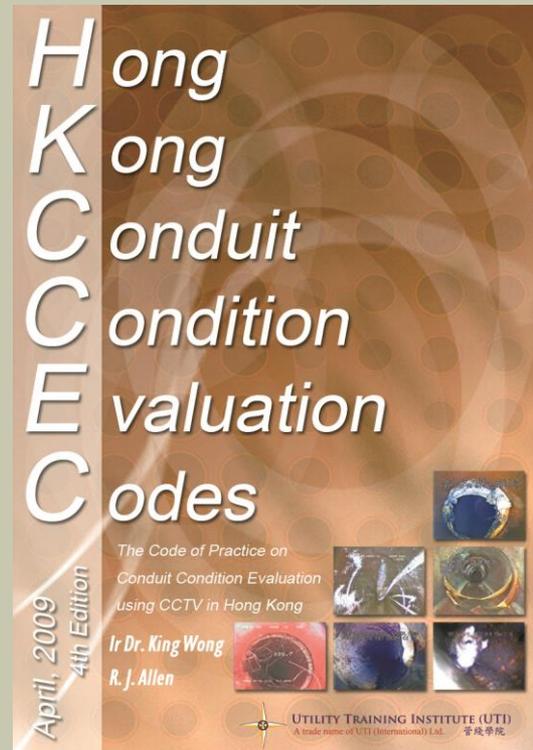
Corporate Members

- ✓ Annual renew
- ✓ Job reference
- ✓ Equipment requirement
- ✓ Safety requirements
- ✓ Management Training

STANDARDIZATION

- More detailed description & more Photos example for defects/ features in conduit
- More samples: sample forms, sample photo, video, report, etc., which made it easier to understand.
- Structural Performance Grade (SPG), which is overlooked in pervious version, is now taken into account.

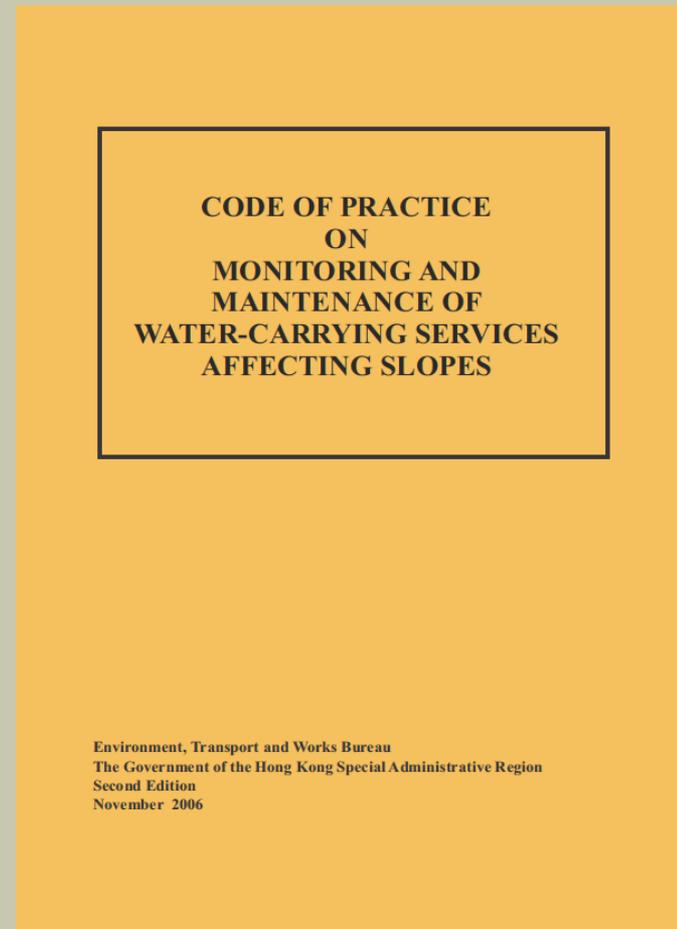
HKCCEC 2009



HKCCEC 2007

STANDARD DESIGNED FOR HONG KONG

- **Work Branch,
Development Bureau**
 - **Code of Practice on
Monitoring and
Maintenance of
Water-Carrying Services
Affecting Slopes (2006)**



STANDARD DESIGNED FOR HONG KONG

- **Hong Kong Institute of Utility Specialists (HKIUS)**
 - A. 管綫狀況評價(排水) Conduit Condition Evaluation and Man-Entry Survey(CCTV & ME)
 - B. 沙井狀況評價 Manhole Internal Condition Survey
 - C. 管綫測量 Utility Survey (Pipe Cable Locator Survey, PCL)
 - D. 漏水監控 Water Leakage Detection and Control
 - E. 斜坡管道測漏 Advanced Leakage Detection of Buried Water Carrying Services Affecting Slopes

NEW PUBLICATIONS-GUIDELINES



NEW PUBLICATIONS-PS



NEW PUBLICATIONS-MS



NEW PUBLICATIONS-WP



STANDARDIZATION OF TRAINING (RECOGNIZED BY HKIUS)(標準培訓)

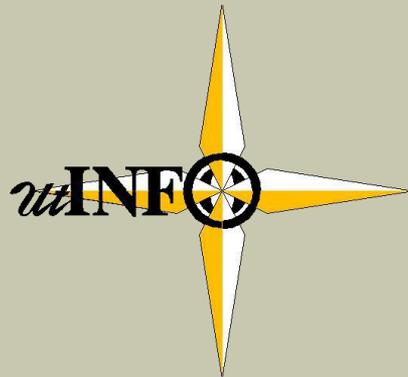
- “Utility Survey” included as a course in Applied Learning in Senior Secondary Curriculum;
 - *Utility Management and Applications (管線管理專業技術應用)*
- Co-organized by UTI & The University of Hong Kong or Hong Kong Polytechnic University;
- Students will be equipped with training on theoretical and practical basis.



Hong Kong Utility
Research Centre
香港管綫管理研究中心

STANDARDIZATION OF TRAINING (RECOGNIZED BY HKIUS)(標準培訓)

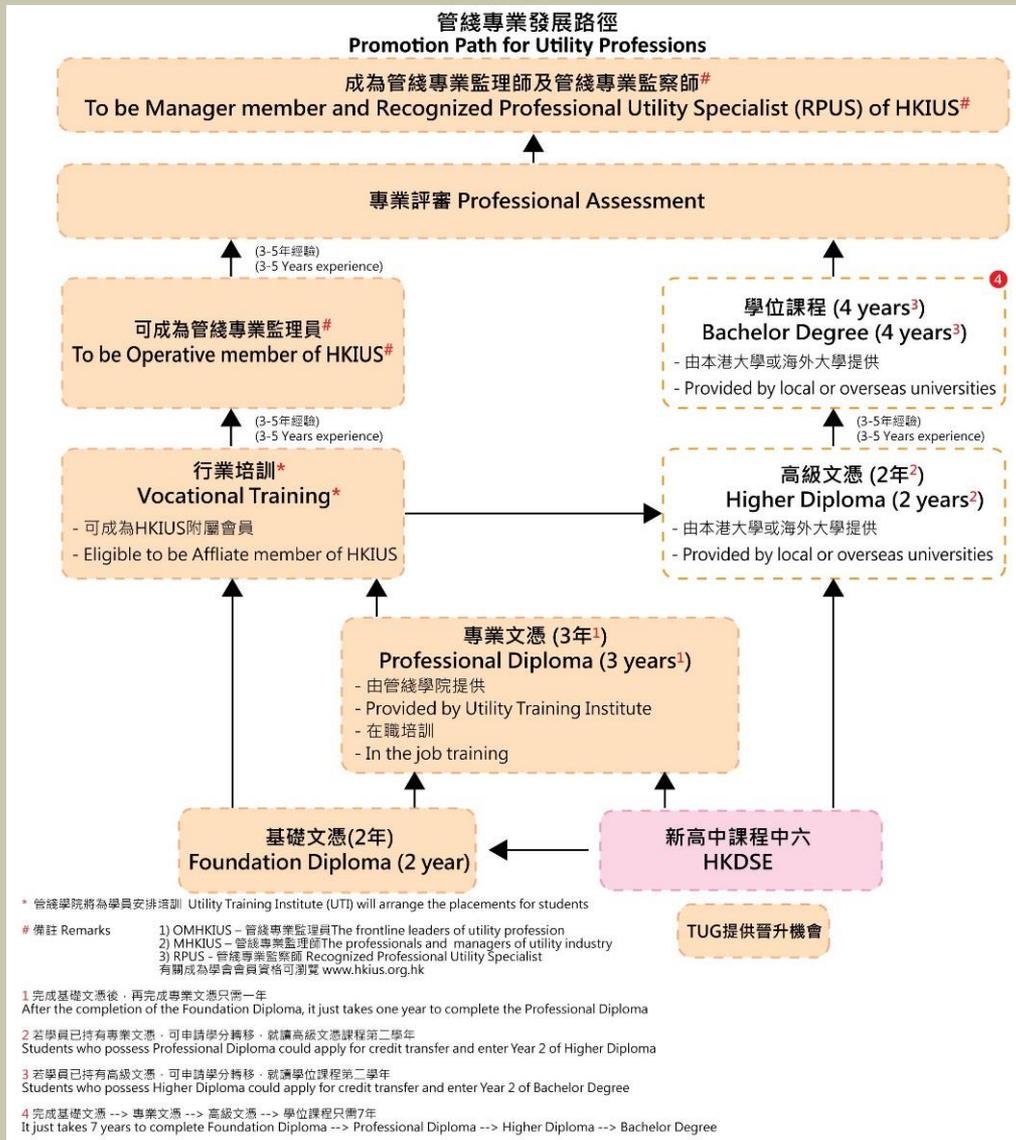
- CICTA-Cable and gas pipe location
- IVE(Haking Wong)-Cable Location
- PolyU-BSc (Utility Survey & Mnaagement), PhD Thesis-GPR Survey)
- HKU (MSc Thesis-Utility Safety)
- UTI-Foundation/Professional Cert, Foundation/Professional Dip, CPD, Seminars, Visits, Publications



CERTIFICATES



EDUCATION – TRAINING OF PERSONNEL



- **Utility Training Institute (管綫學院) organizes courses to nurture teenagers to be Utility professionals**

- **Degree course “BSc. In Geomatics (Utility Surveying)” being hosted by the Land Survey and Geo-Informatics Department (LSGI) of the Hong Kong Polytechnic University is commencing from 2009.**



RECOGNITIONS

1. Enhance the recognition of Institutes between utility specialists

The survey shall be conducted by a qualified member of Hong Kong Institute of Utility Surveyors in Conduit Condition Evaluation Discipline (O/MHKIUS-CCE(CCTV))

and report in the form of DVD-R together with documentary report. The survey shall be conducted by a qualified member of Hong Kong Institute of Utility Surveyors in Conduit Condition Evaluation Discipline (O/MHKIUS-CCE(CCTV)).

(2) The contactor shall clean the pipes to be inspected when directed by the Client's Representative with relevant training and experiences. The pipes shall be

CCTV Survey shall be carried out by MHKIUS (CCE-CCTV) with at least 5 years experiences and relevant training provided locally.

equipment and camera should continue recording during the time of lowering into and taking out from the culvert/pipe/manhole.

(4) CCTV Survey shall be carried out by MHKIUS (CCE-CCTV) with at least 5 years experiences and relevant training provided locally.

YOUTH DEVELOPMENT



SCIOAL CARING

- Social Status
- Community & Construction Professionals' Development Centre (CCPDC)



社區、建造及工程專業發展中心
CCPDC 社建 Community & Construction Professionals' Development Centre



HONG KONG INSTITUTE OF UTILITY SPECIALISTS (HKIUS)-WHAT WE HAVE DONE

- Types of CPD activities provided
- Technical seminars
- Visits
- Conferences
- Social events



DSD OPEN DAY ON 11&12 JAN, 2014

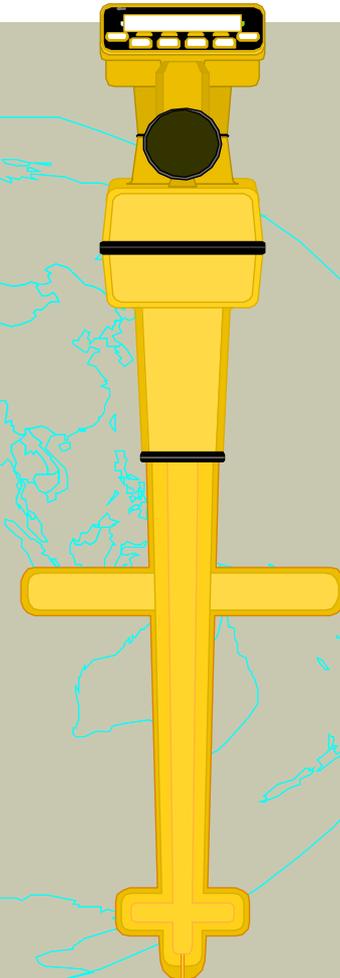
BOOTH GAME - TREASURE FINDING



6. NEW TECHNOLOGY – INTELLIGENT MARKING SYSTEM (智能標纖系統)



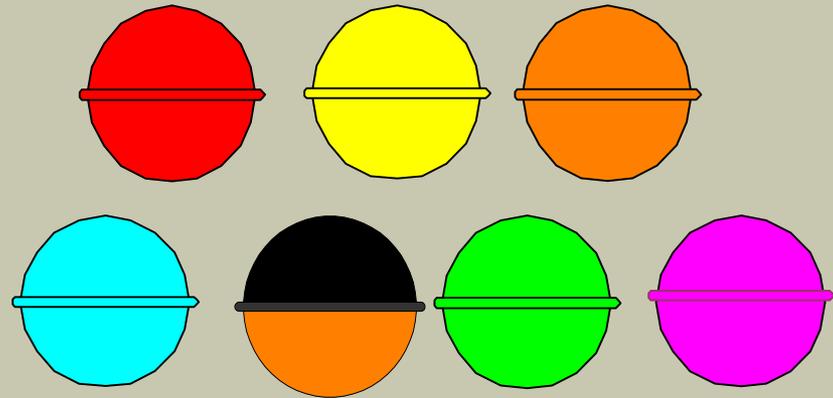
TRANSMITTER



RECEIVER

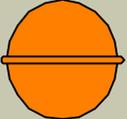
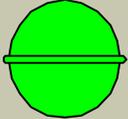
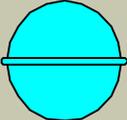
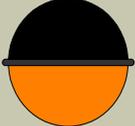
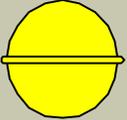
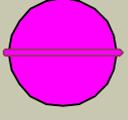
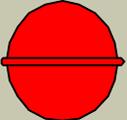
NEW TECHNOLOGY

- IDMS(綜合資料管理系統)
(Integrated Data Management System)



STANDARD MARKER FREQUENCIES

不同頻率的電子標識器

Color	Type	Color	Type
	Telephone		Waste water
	Water		CATV
	Gas		General
	Power		

EMS-ID MARKING APPLICATIONS



For bundle of cables
(iD Ball Marker)



For Gas pipe without tracer wire
(mini marker)

EMS-ID MARKING SYSTEM WITH GPS APPLICATION

GPS Receiver



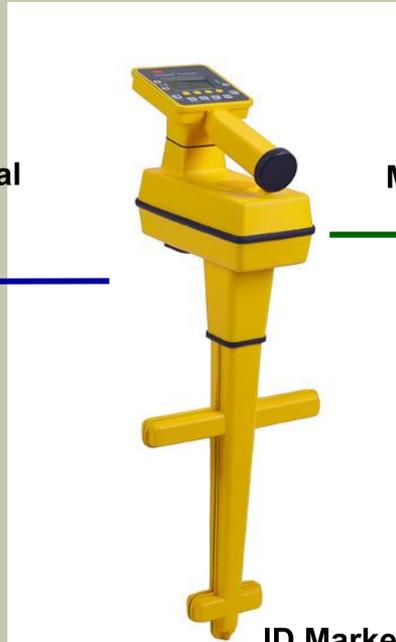
GPS Positional Coordinates



ID Marker Read/Write Data



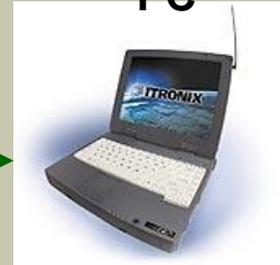
CAD/GIS Database
(Mapping System)



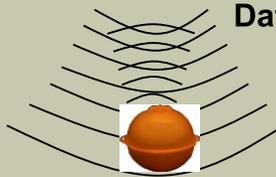
Marker Read/Write Data with GPS Coordinates



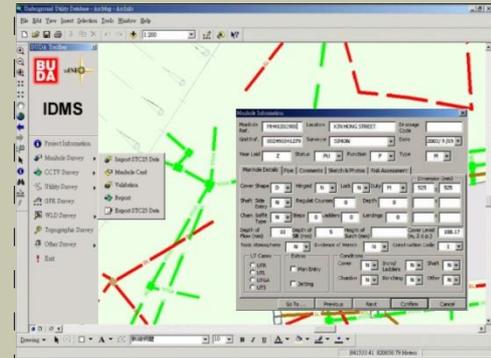
PC



ID Marker Read/Write Data

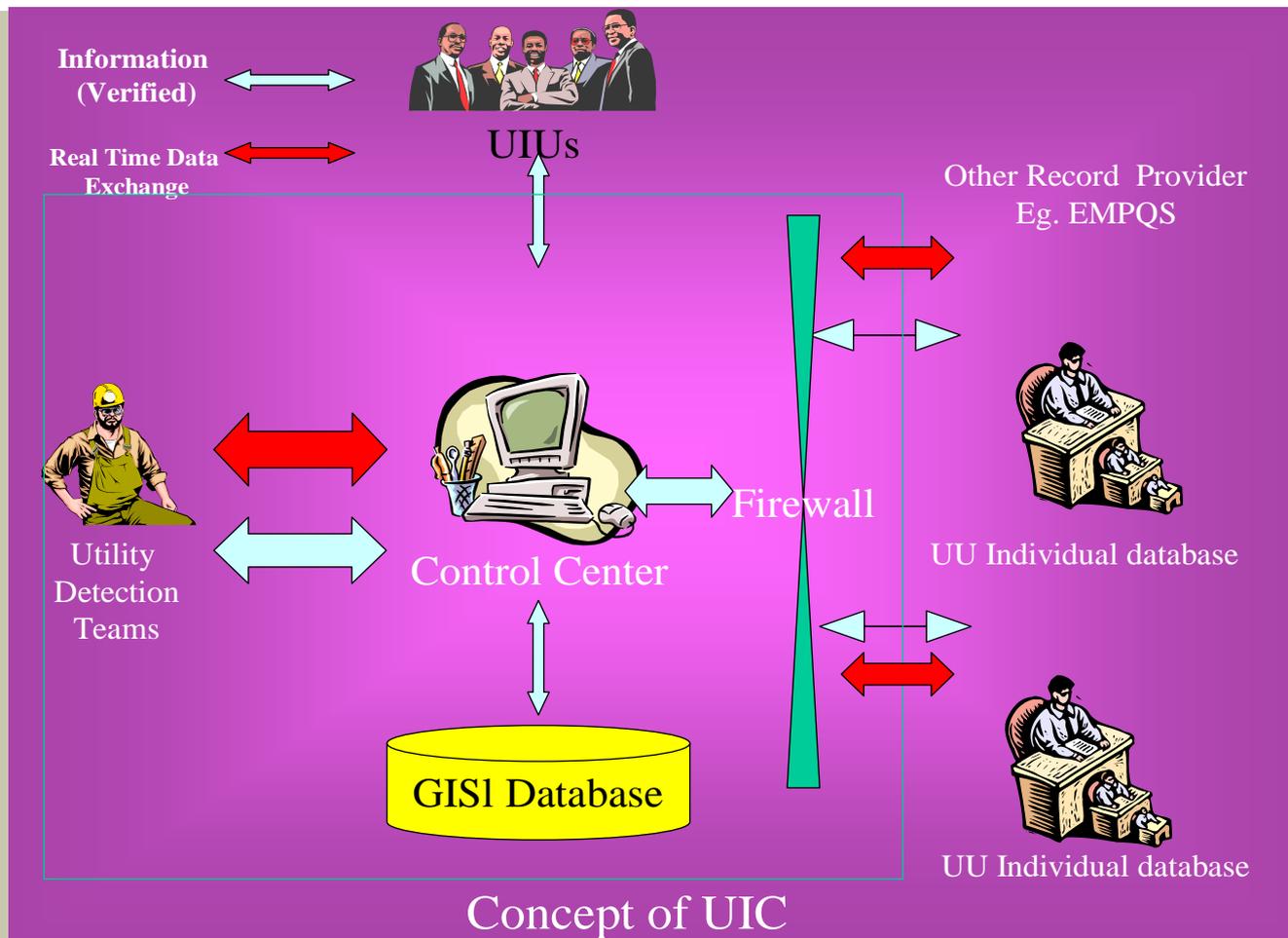


iD
Marker



ID Marker Data Documented
in Customer GIS System

CONCEPT OF PROPOSED CENTRALIZE UIC (分享平台)



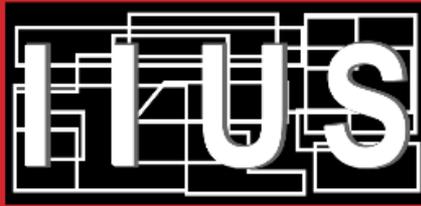
UIU – Utility Information User (Government departments, Consultants, contractors, planners etc)
UU – Utility Undertakers (Utility companies)



國際管綫
專業學會

International Institute of Utility Specialists





國際管綫
專業學會

International Institute of Utility Specialists

- **Formed on 1st Nov., 2013 in Hong Kong**
- **Over 300 attended.**
- **May have Sabah IUS**
- **Becoming sharing platform for:**
 1. **Professional Standards**
 2. **Course Accreditation**
 3. **Personnel Recognition**
 4. **Promotion via ICUMAS**

PAST MAJOR EVENTS OF HKIUS



Date	1 st -3 rd ICUMAS
1 - 4 Mar, 2009	First International Conference on Utility Management and Safety
7-8 Mar, 2011	The Second International Conference on Utility Management and Safety, ICUMAS
30 Oct to 1 Nov, 2013	8th World Congress on Engineering Asset Management & 3rd International Conference on Utility Management & Safety



PAST MAJOR EVENTS OF HKIUS

The 1st International Conference in Utility Management and Safety 2009





HKIUS 6th Anniversary & ICUMAS Opening Banquet
 2nd March 2009



HKIUS 6th Anniversary 2 March 2009



The First International Conference on Utility Management & Safety 第一屆國際管綫管理及安全會議

Hong Kong 1st - 4th March, 2009



PAST MAJOR EVENTS OF HKIUS 2009

Recruitment Talks for Utility Professionals 2009



PAST MAJOR EVENTS OF HKIUS 2009

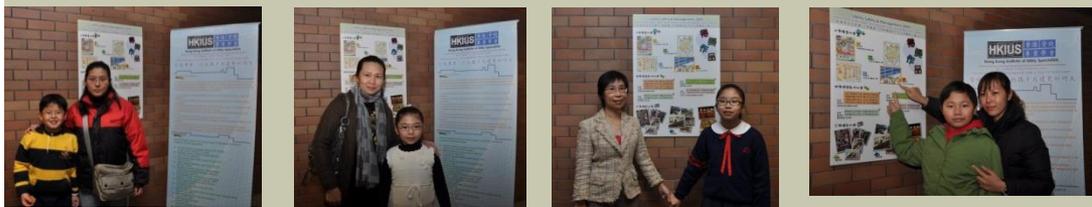
Grand Opening Ceremony of Utility Specialists' Resource, Training and Technical Assessment Centre at Kwai Chung (20 Jun 2009)



PAST MAJOR EVENTS OF HKIUS 2009

"Utility Safety & Management 2009-Drawing(Primary Schools), Slogan Creation(Secondary Schools) & Photography Competitions(Open)"

管綫安全及管理- 小學繪畫、中學標語創作及公開攝影比賽2009 18 Dec 2009



Utility Safety & Management 2009

Drawing (Primary Schools), Slogan Creation (Secondary Schools) and Photography (Open) Competitions
管綫安全及管理- 小學繪畫、中學標語創作及公開攝影比賽2009

小學繪畫比賽

得獎作品

冠軍 謝浚浩 德華書院附屬小學

亞軍 李敏潔 保良局何壽南小學

季軍 林思如 保良局何壽南小學

優異 謝曉瑛 聖馬利亞小學

中學標語創作比賽

冠軍 黃美玉 中華基督教會基用中學

亞軍 凌敏儀 聖馬利亞中學

季軍 謝德智 聖馬利亞中學

優異 李安玉 光潤公立中學校及會師慈雲中學

公開攝影比賽

冠軍 黃志強

亞軍 黃浩輝

季軍 黃志強

PAST MAJOR EVENTS OF HKIUS 2009

Technical Conference on “New Technology for Water Rehabilitation”
23 Oct 2009



UPCOMING EVENTS

1Call Utility Safety and Practical Competition 2014-2015

- Jointly organized by IIUS, HKIUS and CCPDC from 2014-2015.
- Supported by CIC, HKIA, HKIE, etc
- The competitions are:
 - Building Information Modeling (BIM)
 - Drawing and Slogan Competition
 - Practical Competition

Host Organizers:





Event Management:


1CALL Utility Safety and Practical Competition 2014-2015

With an increasing public awareness on the effective management of underground utilities (Gas, Water, Drains, Power, Telecom, etc) and work safety in road excavation, a series of open competitions will be jointly organized by IIUS, HKIUS and CCPDC from 2014 to 2015. The competition aims to educate public, students and professional of the principle of utility surveys and the importance of safe excavation, how to improve our living standards with lower rate of incidents, appreciation of advanced technologies of Building Information Modeling (BIM).

Chairman: Ir. C.S. WAI, IP
 冼志誠 工程師 - 太平紳士
 Organizing Committee Chairman

Hon. Secretary: Ir. Dr. King WONG
 黃敬權 博士 - 工程師
 Hon. Secretary

CC-Chairman: Building Information Modeling (BIM) Competitions
 Ir. NG Chun-hung
 伍國榮 工程師

Drawing Competitions: Ir. Dr. HO Shing-yi, Vincent
 何志光 博士 - 工程師

Slogan Competitions: Ir. Dr. LOOK Pak-ching, Louis
 梁家威 博士 - 工程師

Practical Competitions: Ir. Dr. LAI Wai-ick, Wallace
 賴耀榮 博士 - 工程師

Secretary General: Ir. Dr. Wing-tsz, Spencer
 岑國賢 工程師

Register Now

www.hkiaus.org.hk/competition/utility/safety

Title Sponsor


Platinum Sponsor


Supporting organizations (Honorary Organizing Committee):









For Enquiries
 Tel: (852) 2690 3899 Fax: (852) 2618 4500 E-mail: talk@uti.hk
 Address: Unit 209, 2/F, Favor Industrial Center, 2-6 Kin Hong Street, Kwai Chung, N.T., HKSAR

UPCOMING EVENTS

- China International Underground Pipeline Exhibition & Conference 2014 and The 4th International Conference on Utility Management & Safety (ICUMAS) Summit

4th ICUMAS is going to be conducted at **Beijing** at 14-16 Nov, 2014

China International Underground Pipeline Exhibition & Conference 2014
&
The 4th International Conference on Utility Management & Safety (ICUMAS) Summit

2014中國國際地下管綫大會及第4屆國際管綫管理及安全會議高峰會

主題: 管綫資產管理
 Topic: Utility Total Asset Management

地點: 國家會議中心
 Venue: China National Convention Center

日期: 2014年11月14-16日
 Date: 14 - 16, November, 2014

www.hkius.org.hk/conference/ICUMAS2014

Register Now!
 馬上報名

批准單位 Approved by:
 中華人民共和國商務部
 Ministry of Commerce of the People's Republic of China

支援單位 Supported by:
 中華人民共和國住房和城鄉建設部
 Ministry of Housing and Urban-Rural Development of the People's Republic of China

主辦單位 Host organizations:
 中國城市規劃協會地下管綫專業委員會
 China Association of City Planning - Underground Pipeline Committee
 中國國際經濟技術交流中心
 China International Center for Economic And Technical Exchanges
 國際管綫專業學會
 International Institute of Utility Specialists

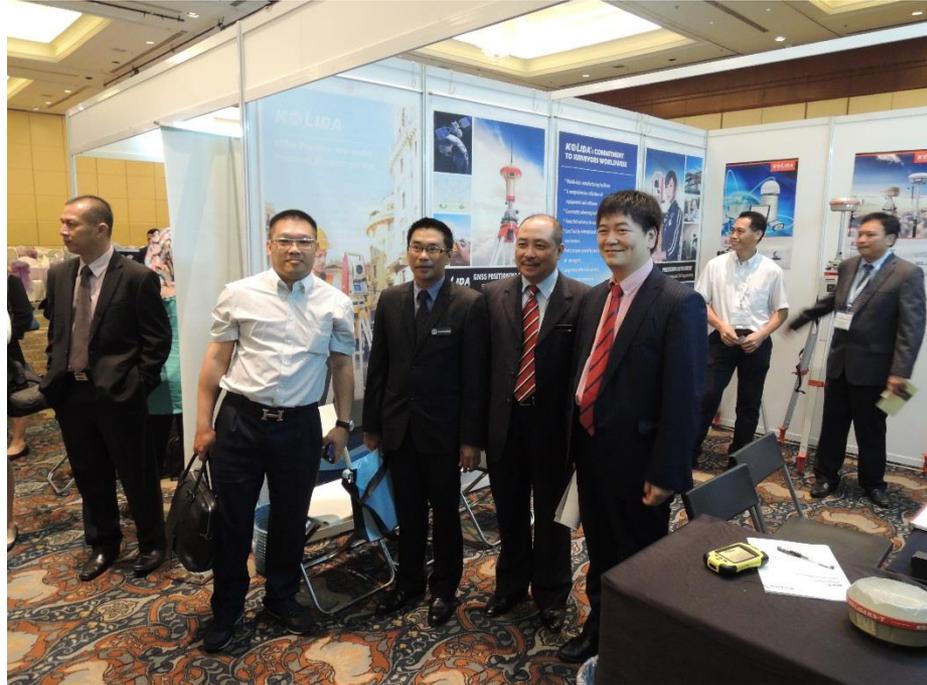
香港及海外聯絡處 Hong Kong & Overseas Contact:
 管綫學院
 Utility Training Institute

Supporting Organizations (Hong Kong Region)
 CCPC 中國管綫專業協會
 HKIUS 國際管綫專業學會
 Hong Kong Institute of Utility Specialists

UTI
 Institute of Technology & Information 科技及資訊學院
 Utility Training Institute 管綫學院
 International Training Institute 國際管綫學院
 110-112, HONG KONG ROAD, HONG KONG

Contact us:
 Tel: (852) 2967 0000 Fax: (852)2618 4500 E-mail: info@hkius.org.hk
 Address: 110-112, HONG KONG ROAD, HONG KONG

A VERY SUCCESSFUL SISC 2014



FUTURE MAJOR EVENTS

- **ICUMAS 2015-Sabah or somewhere in Malaysia?**
- **IUS in States of Malaysia?**
- **IDMS in States of Malaysia?**

9. PROJECT 348 (三世發項目) -THE WAY TO SUCCESS

3T

嘗試 Trial

信任 Trust

交易 Trade

4R

合適人選
(Right Person)

合適儀器
(Right Equipme
nt)

合適準備
(Right Preparatio
n)

價錢
(Right Price)

8P

Plan

- 規劃 (Plan), 主動 (Proactive), 正面 (Positive)

Act

- 專業 (Professional), 進度 (Progress), 耐性 (Patience)

Review

- 承諾 (Promise), 盈利 (Profit)

WHERE DR. KING FROM?

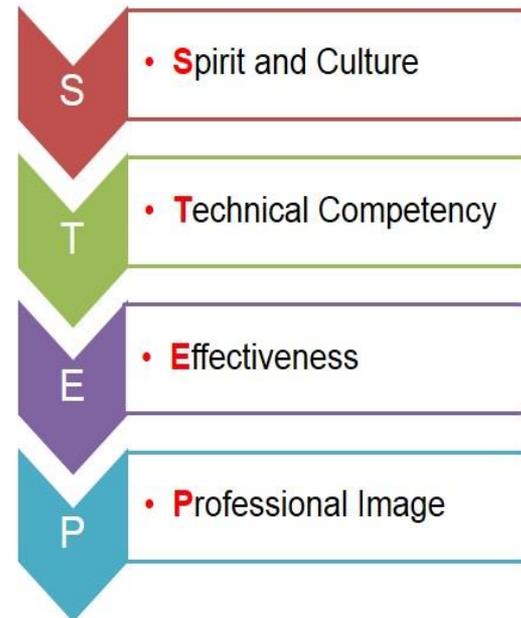
TUG Core Values



TUG



TUG Step



DR. KING 理念創造富裕人生

- **D** – **Don't be Ashamed** 管綫精神
- **R** – **Right Now** 坐言起行

- **K** – **Knowledge** 專業求真
- **I** – **Innovation** 意念創新
- **N** – **Network** 團結齊心
- **G** – **Guts** 勇氣奪金



We Strive for Enhancing Utility Professions in the Society

Thank you

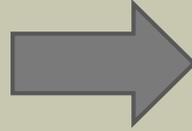
7. RECOMMENDED SURVEY APPROACH

How accurate results can be assured?

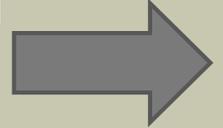
- ✓ Project 3(T) 4 (R) 8(P)
- ✓ Specifications, Method Statement, Work Procedures
- ✓ Guidelines
- ✓ Ethics for data integrity



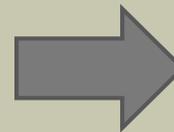
Collect relevant information
(e.g. record plan)



Observe surface installations



Safety precautions (PPE, TTA)



Qualified Personnel



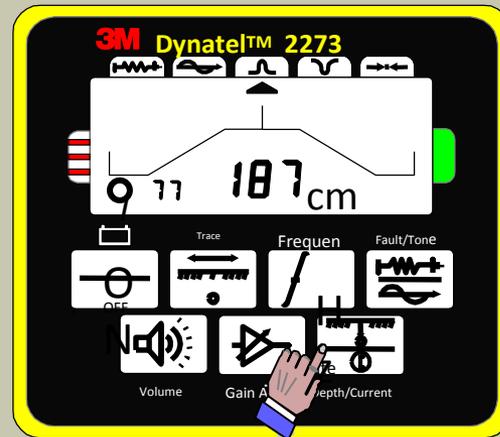
Passive detection



Active detection



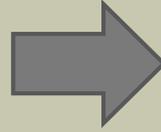
Marking



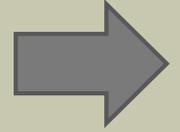
Depth measurement



Quality control



Topo / total station



UtilityINFO Ltd.
 香港工程師聯合有限公司
 The Underground Utility Information Provider
 In Associate with BUDA Surveying Ltd.
 (The Defined Space Problem-Solver)

Utility Survey Report

Contract No. 16/WSD/06
 Replacement & Rehabilitation of Water Main Stage 2,
 Mains in West Kowloon and Kowloon City

Revision: 00

September 2008

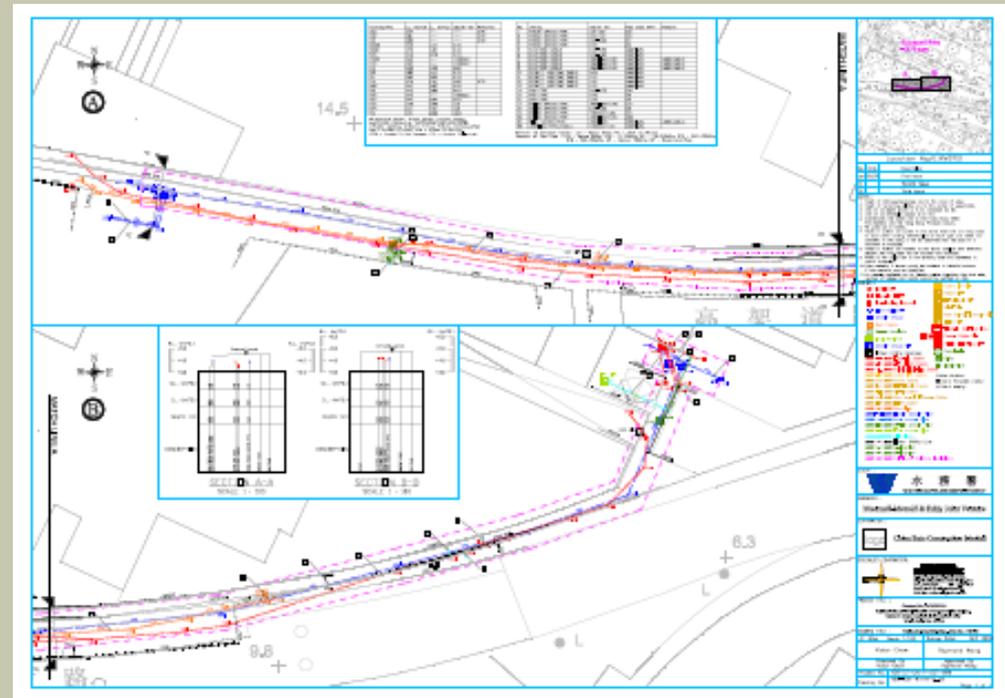
Reference No: Y08-UT-UN-P-037-999
 Client: Water Supplies Department
 Consultant: Maunsell-Metcalf & Eddy Joint Venture
 Contractor: China State Construction Limited
 Work Order No.: 119
 Site location: Mei Foo Sun Chuen

Quality, Environment & Safety Management Systems are Certified to

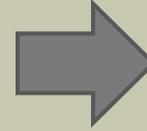
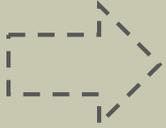




Address: Suite 212, FAVOR Industrial Centre,
 2-6 Kin Hong Street, Kwai Chung, NT
 Tel: 3620 3208 E-mail: info@utilityinfo.com.hk
 Fax: 2724 9119 Web: www.utilityinfo.com.hk

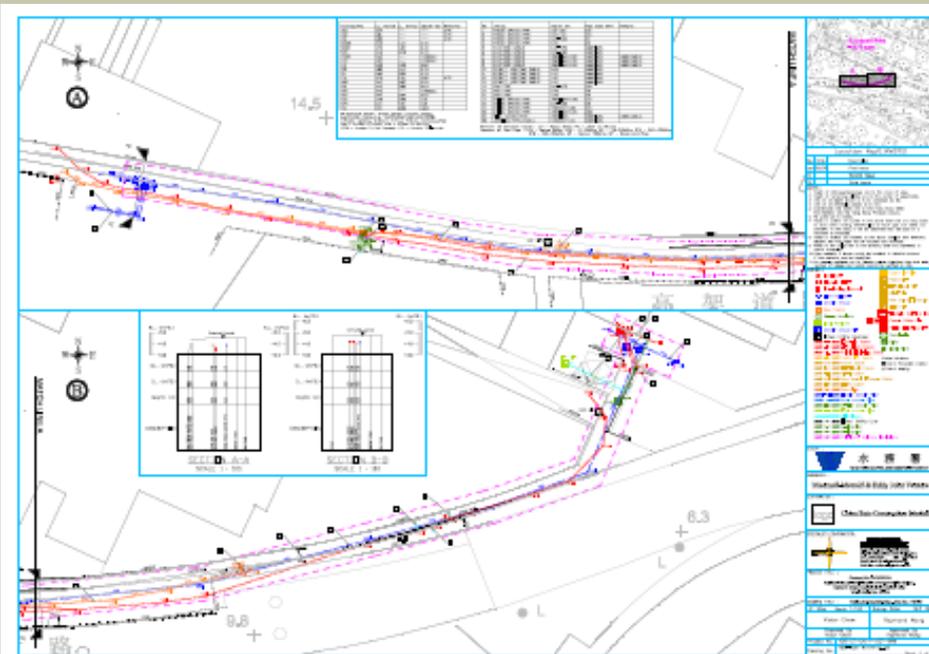


Report with drawing



Propose trial pit location for verification IF NECESSARY/REQUESTED BY CLIENT.

Verify the alignment by signal clamping



Update the drawing for final reporting.

THE IMPORTANCE OF CPD TO PROFESSIONAL INSTITUTE AND ITS MEMBERS

- Established in 2002
- First EC commenced on 1st April, 2003
- With an aim to promote and advance the knowledge and practice of underground utility services
- Maintenance of a high standard of professional qualification in utility survey and specialist industries



Hong Kong Institute of Utility Specialists

INTRODUCTION OF HKIUS

-To promote and advance the knowledge and practice of underground utility survey profession, and to create and maintain a high standard professional qualification;

推廣及促進地下管綫測量專業知識

-To provide an advisory service on underground utility surveys for members of HKIUS and members of the public in general;

為會員及公眾提供地下管綫測量諮詢服務

-To facilitate exchange of opinions with other professional bodies on underground utility survey;

促進與業內專業團體交流

-To help maintaining reasonable post-service standard in underground utility survey industry for both members and non-members;

建立及維持高水準的專業資格及合理售後服務標準

-To build and develop the role and status of underground utility survey profession in the community.

建立及發展業界在社會上的角色和地位

-To cooperate and confer with, or otherwise assist and advise, government departments, quasi-governmental organizations, public utilities organizations, universities, colleges and other public or private bodies or corporations in the utility survey industry.

與政府部門、半政府機關、公共事業機構、大學、學院及其他公共或私人團體/公司在有關管綫測量業方面合作及磋商，或提供相關協助和諮詢服務

DISCIPLINES OF UTILITY PROFESSION

HKIUS members come from a wide range of disciplines involved in underground utility specialists.

A) *CCE(CCTV&ME):	Conduit Condition Evaluation (CCTV and ME Survey) (管道狀況評價(排水))
B) *MHICS:	Manhole Internal Condition Survey (沙井狀況評價)
C) *US(PCL):	Utility Survey (Pipe Cable Locator Survey, PCL) (管綫測量(PCL))
D) *WLD:	Water Leakage Detection and Control (漏水監控)
E) *BWCS:	Advanced Leakage Detection of Buried Water Carrying Services Affecting Slopes (斜坡管道測漏)
F) PR:	Pipe Rehabilitation by Trenchless Technology (管綫維修(非開挖工程技術喉管修補))
G) GPR:	GPR(Ground Penetrating Radar) Survey (管綫雷達探測)
G) FLOW:	Flow Study in Drainage Conduit (流量監控)
I) PCS:	Pipe Condition Surveys by other non-destructive methods (管道狀況評價)
J) DM:	Data Management for Utility Records (管綫資料管理)
K) UM:	Utility Management (管綫管理)
L) PM:	Project Management for Utility Industries (管綫項目管理)
M) BIM:	Building Information Modelling for Infrastructure (建築資訊模型(基建))
N) Others:	Membership without Discipline (非管綫專業會員)

PROSPECTS OF UTILITY PROFESSIONS

- **Demand for maintenance and protection**
 - The demand for maintenance and protection of various kinds of public utilities is greater than supply
 - Utility Survey plays an important role
- **Market of Utility Surveys**
 - Contracts related to utilities work has tremendous increase
 - Eg. Existing Utility Professionals can only afford half of works (Slopes with high risk) which means a large amount of personnel is needed
 - Other government organizations, such as WSD, DSD, TD, HD and private organizations would also invite utility professionals to do utility surveys, maintenance and protection works
- **Demand for personnel**
 - Lack of trained personnel in the industry

PROSPECTS OF UTILITY PROFESSIONS



偉景樓爆炸 地下管綫敲警鐘

管綫測量員渴市成新貴

水管、電綫、煤氣管、有線電視，我們每日踏足的水泥地下，埋藏了四通八達的地下管綫，密度比美國高8倍，甚至比英國多24倍！月前牛頭角偉景樓的煤氣爆炸事件，喚醒市民對地下管綫保養的重視。

專責為地下管綫「把脈」的管綫測量行業，近年已迅速崛起，前景樂觀。大學畢業生有數年經驗便有機會晉身合夥人，即使只有中五畢業，但入行十年，每月也有約2萬元薪酬（見另文）。
■本報記者 林嘉英

政府年批過億測量工程

「香港市區的高危斜坡約有5,800個，根據每5年檢驗一次的法例，每年便有1,000個以上工程批出，總值1,500萬元，但行內每年只能負擔約500個檢驗工程，做都做不及！」管綫測量師學會秘書長黃敬表示，近年港府對地下管綫保養愈益重視，使管綫測量成為了炙手可熱的新興行業。

除了上述的斜坡檢驗外，水務處、渠務處、路政署及房屋署，每年亦批出過億元的測量工程，再加上金額數以億計的修補工程，龐大的市場，為有志入行的青年展現美好前景。

大學生數年可成合夥人

中五畢業生加入管綫測量行業，可由工程助理做起，起薪點約7千至9千元，經過多年的經驗累積及進修，有機會晉升至工程主任一職，賺取年薪過20萬的穩定收入。

大學畢業生的初入職職位則為助

理工程測量師，起薪點約1萬元，表現優異的，最終可成為公司合夥人，前途及收入無可限量。

學會夥院校培訓規範化

黃敬指出，因現時香港的大學尚未有管綫測量學系，故入行的畢業生多出自測量系、工程系及應用數學系等，然後再於職訓局等培訓機構進修相關的技能。管綫測量師學會亦積極與各院校合辦課程，逐步將業內的培訓規範化及專業化。

「香港是一個已發展城市，維修的需求遠大於建設。」他指出，近年除政府外，私人機構對管綫測量的需求亦不斷提升；而量行業的規模，遠追上需求的增長，所以新入行者的發展空間十分廣闊。業界每年與各大學及職訓機構聯絡，及於報章刊登招聘廣告，吸納不同學歷的新人加入。

對有志入行的年輕人，黃敬忠告指測量師經常要與組員在戶外工作，性格外向及刻苦耐勞是必要的條件；同時要有耐性，苦學4、5年後便會看見真正的前景。



管綫測量晉升途徑

職位	薪酬(萬元)
持大學學位	
合夥人	3以上
高級工程測量師	2至3
工程測量師	1.5至2
助理工程測量師	0.9至1.1
中五畢業	
總技術主任	1.5以上
高級技術主任	1.5以上
技術主任	1至1.5
助理技術主任	0.9至1.1
工程助理	0.7至0.9

資料來源：管綫測量師學會

剛畢業於科大機械工程系的古家俊，主責操作探地雷達，表示會繼續進修相關的知識。
(梁偉榮攝)

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資料來源：管綫測量師學會

(經濟日報, 23/6/2006)

REQUIREMENTS OF HKIUS MEMBERSHIP (NEED AMEND)

Membership Type	Abbreviation	Requirements	Total no.
Student	N/A	Full time students and age below 25.	196
Affiliate	N/A	Age over 18 and Support to HKIUS constitution	2
Associate	AMHKIUS	F.5+1 year +Training +Safety +CPD	21
Operative 管綫專業監理員	OMHKIUS	F.5+3 year +Training +Safety +CPD + Interview	50
Manager 管綫專業監理師	MHKIUS	Degree+5 years +Training +Safety +CPD + Interview	64
Fellow 管綫專業監理師	FHKIUS	Degree+8 years (or MHKIUS+ 5 years)+ Training +Safety +CPD + contribution to the industry	20
Recognized Professional Utility Specialist 管綫專業監察師	RPUS	M/FHKIUS+2 years local exp.+ CPD+ interview (accept application from 1 st Jan, 2009)	2
Honorary Fellow	Hon. FHKIUS	Professionals with substantial contribution to the industry and by invitation only.	6

REQUIREMENTS OF HKIUS MEMBERSHIP COMPANY MEMBERS (NEED AMEND)

Corporate Company Membership	Years of Experience (Years with HKIUS) and requirements	Min. No. of member Total/ (Professional)	Total no.
(Group A)	3 years + Quality and Safety System	3/ (1)	3
(Group B)	5 (3) years + Quality and Safety System	6 /(3)	8
(Group C)	10 (5) years + Quality and Safety System	10/ (5)	6 (accept application from 1 st April, 2009)
Sponsor Company Member	Not Required but supportive to the industry	Not Required	0