



JUPG WORKING GROUP
TO MAKE RECOMMENDATIONS TO ENHANCE MEASURES FOR
PREVENTION OF DAMAGE TO UTILITIES AND PROCEDURES FOR
REPORTING DAMAGE TO UTILITIES DURING EXCAVATION WORK

FINAL REPORT

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1. INTRODUCTION

JUPG Working Group on Utility Damage Prevention was formed by JUPG and HEC was appointed as Chairman of this Working Group by JUPG in the JUPG Meeting held on 17/8/2006. Representatives from the following JUPG members had also joined the Working Group:

- The Hongkong Electric Co., Ltd. (HEC)
- CLP Power Hong Kong Ltd. (CLP)
- Drainage Services Department (DSD)
- Highways Department (HyD)
- Hong Kong Broadband Networks Ltd. (HKBN)
- Hong Kong Cable Television Ltd. (HKC)
- Hutchison Global Communications Ltd. (HGC)
- New World Telecommunications Ltd. (NWT)
- PCCW Ltd. (PCCW)
- The Hong Kong and China Gas Co., Ltd. (HKCG)
- Towngas Telecommunications Fixed Network Ltd. (TGT)
- Water Supplies Department (WSD)
- Wharf T&T Ltd. (WTT)

List of representatives of the above members is shown in Appendix 1. Totally three working group meetings were held in 2006 and 2007. An interim report with recommendations was presented in the JUPG meeting held on 16/11/2006. Comments provided by JUPG members were discussed in the subsequent work group meeting.

This report provides a brief summary of the discussions held in the working group meetings and the final recommendations to enhance measures for prevention of damage to utilities and procedures for reporting damage to utilities during excavation work for endorsement by JUPG.

2. TERMS OF REFERENCE OF THE WORKING GROUP

The following term of reference of the working group was endorsed by JUPG in the last JUPG meeting held on 16/11/2006:

“To make recommendations to enhance measures for prevention of damage to utilities and procedures for reporting damage to utilities during excavation work.”

3. STATISTICS OF DAMAGE CASES

According to the UTLC statistics on damage to utility services (2000-2006), the damage cases in 2005 and 2006 were in decreasing trend. Members opined that this was due to less construction activities together with stringent plant protection measures in place, legislation in force, efforts of UTLC and UUs to deter the contractors from damaging utility installations and to

improve the competency of contractors in protection of utility installations etc.

4. REVIEW ON THE CAUSES OF DAMAGE CASES

The common causes of damage cases identified by members were as follows:

- Contractor did not acquire utility information before work commencement.
- Contractor did not know/was not aware of the existence of utility services.
- No hand dig trial hole to identify the exact location of utility services before excavation.
- Use of heavy machine/plants (such as excavator, sheet piling and boring machines etc.) for excavation close to utility services.
- Human problem as higher number of damage cases occurred before and after long holidays as well as special time slot of the day (e.g. 0800-0900 hours was considered as the high risk time zone for damage cases).
- Misjudge utility services as abandoned services.
- Soil settlement or disturbance on the support of utility services.

5. LEGISLATIVE REQUIREMENTS ON DAMAGE PREVENTION ON UTILITY SERVICES

The legislative requirements on damage prevention are only applicable to the following utility services at present:

Utility Services	Legislation	Detailed Legislative Requirements
Underground cables of CLP and HEC	Electricity Supplies Lines Protection Regulation	Code of Practice on Working near Electricity Supply Lines published by Electrical and Mechanical Services Department
Watermain of WSD	Water Works Ordinance	
Drainage pipes of DSD	Public Health and Municipal Services Ordinance (Cap. 132)	
Gas main of HKCG	Gas Safety Ordinance (Cap. 51)	“Avoid Danger from Gas Pipes” published by Electrical and Mechanical Services Department

6. ADVICES GIVEN TO EXTERNAL PARTIES CARRYING OUT EXCAVATION WORK

Some of the members had their own publications to give advices to external parties.

A document titled “Detailed Requirements on Support of Utility Services” was worked out by the Working Group. The document had included the publications and drawings of UUs as well as the photos of the utility services and served as a comprehensive guideline for prevention of damage to utility services.

In the UTLC Meeting held on 15/5/2007, the Chairman of UTLC suggested widely propagating the use of the above-mentioned guideline. The document has been placed at HyD’s web site as a related document of Excavation Permit Processing Manual (XPPM) issued on 18/7/2007.

7. STANDARD REQUIREMENTS ON SUPPORT OF UTILITY SERVICES FOR REFERENCE IN AUDIT INSPECTION OF HIGHWAYS

In the UTLC meeting held on 7/11/2006, the Chairman of UTLC directed HEC, the Chairman of working group to prepare a standard to facilitate Audit Inspection Team of HyD to have a standard in marking non-conformances on support of utility services as well as protection to utility services to prevent damage.

The document titled “Standard Requirements on Support of Utility Services for Reference in Audit Inspection of Highways” worked out by the JUPG Working Group is detailed in Appendix 2.

8. RECOMMENDATIONS TO ENHANCE PREVENTION OF DAMAGE TO UTILITY INSTALLATIONS AND REPORT DAMAGE ON UTILITY INSTALLATIONS DURING EXCAVATION WORK

The following recommendations were worked out by the Working Group:

8.1 Education and Communication

- a. JUPG to write to CITA, VTC, Labour Department, OSHC and other training bodies expressing the concerns of damage of underground utility services especially the higher chance of occurrence during the high risk time zones (as mentioned in item 4 above) and at the time after change of site personnel in the course of work and suggest these training bodies to include the utility services protection measures in the courses organised by them for frontline workers and supervisory personnel, such as:

- Various Load Shifting Machinery Operator Training Courses,
- Construction Safety Supervisor Course,

- Mandatory Basic Safety Training Course (Construction Industry Safety Card or Green Card Course) and Revalidation Course (Refresher Course),
 - Detection of Underground Electricity Cables / Gas Pipes Course and
 - Highways Department Site Audit Inspection Standards (Safety and Roadwork Obligations) Training Course etc.
- b. UUs to encourage their personnel and contractors to attend the above enhanced training courses organised by the training bodies.
- c. UUs to consider enforcing the daily safety briefing or tool box talk system by contractor site representatives for better communication with their workers.
- d. UUs to provide guidelines of protection of their services to all UUs and contractors involved in road excavation works.

8.2 Monitoring

- a. UUs to monitor their own contractors. Guidelines would be given to contractors not only for energised services, but also for non-energised services in order to reduce hazards. Mal-practices had to be stopped.
- b. UUs to consider imposing no-objection / notification system before allowing their contractors to use mechanical powered equipment (such as backhoe, sheet piling vibrator, drilling machines etc.) for excavation work in the vicinity of utility services, provided that such use of mechanical powered equipment is permitted in the Code of Practice on Working near Electricity Supply Lines published by Electrical and Mechanical Services Department.
- c. UUs to consider not allowing their contractors to use pickaxe with sharp ends for excavation.
- d. UUs to review the causes of previous damage cases for means of improvement.
- e. UUs to consider arranging suitable labelling of exposed utility services.
(Some members have reservation on the practicability of this recommendation.)

8.3 Patrolling

- a. UUs to continue to arrange additional site patrolling when the UUs believe that their services may be susceptible to damage.
- b. UUs to consider including in contract requirements to require their contractors to arrange patrolling to spot out the malpractices.
(Some members have reservation on the practicability of this recommendation.)

8.4 As-built Plans

- a. Existing arrangement of handling discrepancies found on as-built plans continues.
- b. Promotion of the use of EMPC for obtaining marked plans before commencement of work.
- c. UUs to consider allowing their contractors to obtain marked plans through their EMPC system or obtain marked plans for their contractors.
- d. Other electronic systems for marked plan requests for contractors shall be explored. JUPG and HyD to review the feasibility of allowing contractors/consultants to obtain marked plans through EMPC.
- e. UUs to adopt the existing JUPG paper for standard of as-built plans.

8.5 Site Photos

Contractors to take photos to show different stages of excavation work including protection of exposed utility services for inspection by their client UUs if such services are considered susceptible to damage at the concerned location.

8.6 Reporting

- a. UUs to update their reporting hotlines for use by other UUs and contractors.
- b. Contractors are encouraged to promptly report damage and suspected damage cases to the owner.
- c. UUs or their contractors to consider reporting malpractice of other contractor in handling the exposed utility services to the affected UU.
(Some members have reservation on the practicability of this recommendation)

APPENDIX 1List of Representatives of the JUPG Working Group

Company/Department	Name of Representative
The Hongkong Electric Co., Ltd.	Mr. K.C. Wong (Chairman)
The Hongkong Electric Co., Ltd.	Mr. H.W. Li (Secretary)
The Hongkong Electric Co., Ltd.	Mr. W.K. Chan
The Hongkong Electric Co., Ltd.	Mr. K.M. Wong
CLP Power Hong Kong Ltd.	Mr. K.P. Liu
Drainage Services Department	Mr. Joe H.P. Yip
Highways Department	Mr. S.S. Wong
Highways Department	Mr. Harry T.W. Chan
Highways Department	Mr. Kenneth Wong
Hong Kong Broadband Networks Ltd.	Mr. Mick Tong
Hong Kong Cable Television Ltd.	Mr. K.K. Chan
Hong Kong Cable Television Ltd.	Mr. Alan Choi
Hutchison Global Communications Ltd.	Mr. Jansen Yuen
Hutchison Global Communications Ltd.	Mr. C.W. Wong
New World Telecommunications Ltd.	Mr. Eric Cheung
PCCW Ltd.	Mr. K.T. Yeung
PCCW Ltd.	Mr. W.Y. Lui
PCCW Ltd.	Mr. S.K. Chiu
The Hong Kong and China Gas Co., Ltd.	Mr. Y.L. Lau
Towngas Telecommunications Fixed Network Ltd.	Mr. H.K. Yang
Water Supplies Department	Mr. Chris H.C. Cheung

Company/Department	Name of Representative
Wharf T&T Ltd.	Mr. F.C. Leung