

Guideline on Permit Period Assessment for Road Excavation Works

29 May 2013

Version 1.0

1.0 Introduction

- 1.1 Under Land (Miscellaneous Provisions) Ordinance (LMPO), a street excavation promoter shall apply for an excavation permit (XP) from Highways Department (HyD) before making and maintaining excavation works (hereinafter called the works) in unleased Government land which is a street. The XP is only valid for the period (hereinafter called the permit period) specified therein with a view to control the time of excavation and minimize disturbance to traffic network and road users.
- 1.2 To cater for delay of excavation due to unexpected issues, an XP extension mechanism is established under the LMPO. HyD, may on payment of the appropriate prescribed fee, inclusive of economic cost if carriageway is affected, extend the permit period. Permittees can apply for an extension without any charge if it is unable to have access to a reasonably substantial portion of the street before the commencement of the works, or can apply for refund of economic cost if the extension is caused by any reasons other than the fault of the permittee or its contractor.
- 1.3 In order to determine a reasonable permit period, period permit assessment (PPA) shall be carried out during the XP application. Under the PPA process, applicants are required to propose a permit period of its excavation works to HyD for approval. The permit period is the duration from the start date of the first plan item to the end date of the last plan item for its excavation works covered by an XP.
- 1.4 This guideline aims to set out principles and criteria of HyD on approving XPs and procedures for applicants to follow during the PPA process. For step-by-step PPA

procedures in Excavation Permit Management System (XPMS), please refer to Training Notes B5. For details on other application and administration processes, please refer to XP Processing Manual.

2.0 Types of Excavation Permit

2.1 Under the current XP system, there are several types of XP to cater for different nature and scale of excavation works. The common types of XP include Normal Excavation Permit (NXP), Urgent Excavation Permit (UXP), Emergency Excavation Permit (EXP), Small Scale Works Excavation Permit (SSWXP) and Capital Works Excavation Permit (CWXP). Permit period of some of these permit types are determined by the PPA process, whereas some are dictated under the LMPO or the XP Processing Manual.

2.2 For EXP and SSWXP, PPA process is not required and the permit period is set as follows:

Type of XP	Duration of Block Permit	Duration of Permit Section
EXP	6 months	7 days for each emergency incident*
SSWXP	184 days	24 hours for each SSW job affecting carriageway 48 hours for each SSW job not affecting carriageway

* Remarks: If emergency excavation work cannot be completed within 7 days, the EXP permittee shall apply a continuing emergency XP of which the PPA process is the same as the UXP.

2.3 For NXP and UXP, the need of PPA process to undergo is dependent on the type of works. Permit period of excavation works under the category of short duration works, standard works and non-standard works shall be determined by the respective method.

2.4 For CWXP, permit period shall be determined through the PPA process for non-standard works.

3.0 Types of Work

3.1 Road excavation works can be categorized into 3 types, namely the short duration works, standard works and non-standard works. Their definitions and requirements are described as follows:-

3.2 Short Duration Works

Short duration works refer to minor road excavation works, in which the permit period is limited to 14 working days. The list of short duration works under each trade is shown in Table 1, **Appendix A**.

In the PPA process, applicants shall indicate the minor work involved and a permit period shall be proposed to HyD for vetting; no detailed works programme is required.

3.3 Standard Works

Standard works refer to typical excavation works on roads, in which the permit period of an XP is assessed by standard templates set in the XPMS. The list of standard templates for each trade is shown in Table 2, **Appendix B**.

In the PPA process, applicants shall adopt standard templates, of which each includes a list of work items for different common works of the trades, to apply for a permit period.

3.4 Non-standard Works

Non-standard works refer to uncommon works other than short duration works and standard works. It can also be works of nature similar to standard works but with some

specific work items which have not been covered by standard works.

In the PPA process, applicants shall clearly explain the reason(s) the excavation works have to be categorized as non-standard works. The applicants shall propose to HyD a permit period supported with a works programme in the form of a simple Gantt chart. The applicants are encouraged to develop the works programme for the non-standard works by modifying the standard templates, such as inserting specific work items into the standard templates, as far as possible. If no suitable standard templates can be modified, the applicants shall then complete a blank template for each plan items under the non-standard works to develop the works programme. The applicants may need to provide further substantiation, such as breakdown of works activities or master programme of the construction contract for justification.

4.0 Structure of PPA Templates for Road Excavation Works

- 4.1 In the XPMS, there are standard templates established for assessing permit period of excavation works under various utility trades: Architectural Services Department (ASD), Civil Engineering and Development Department (CEDD), Drainage Service Department (DSD), electricity supplies (ELE), fixed telecommunication network services (FTN), gas supplies (GAS), Housing Department (HSD), Hong Kong Tramway Limited (HTL), Highways Department (HyD) and Water Supplies Department (WSD). The applicants are only allowed to use standard templates of its own trade during the application.
- 4.2 Under each utility trade, some templates are set to cater for excavation works on different road surface types: flexible carriageway, rigid carriageway and footway. Applicants shall use templates appropriate to the road surface types. In case the works lay across both carriageway and footway, the applicants shall register individual plan items for the works undertaken on two road surface types.
- 4.3 In each template, works are further broken down into a series of work items with logical sequences. Some of these work items are common across standard templates and utility trades while some are specific for individual trades. The list of work items under each trade is shown in Tables 3 and 4, **Appendix C**, for utility trench works and excavation works other than utility trench, respectively.
- 4.4 The logical sequence among work items is governed by predecessor and overlap. The preceding work item(s) are the works, of which they must be completed before the subsequent work item(s) can start. The overlap indicates the length of time of

concurrency work items.

- 4.5 Duration of a work item is determined by the formula set in the standard templates. Different formulas are used for various combinations of excavation length, width, and depth for line model, and area for polygon model. In addition, fixed duration work items and dimension dependent work items are specified in the standard templates for better determination of permit period.
- 4.6 The fixed duration work items are the activities not dependent on excavation dimensions. For instance, item 011 for “take over site” and item 062a for “construct drawpit / manhole / valve pit”; fixed durations are assigned for these types of work items in the standard templates.
- 4.7 For line model, the dimension dependent work items are the activities dependent on excavation length, width and/or depth. Their durations are determined by two parts: a nominal and a varied part. The former part is a fixed value set in the formulas; the latter part is directly proportional to the excavation size.
- 4.8 For polygon model, the dimension dependent work items are the activities dependent on excavation area. Their durations are directly proportional to the area of the excavation.
- 4.9 For trench excavation works with trench length between 10m and 50m, the length is rounded up to the nearest 10m in the calculation process of permit period.
- 4.10 In some occasions, duration of work items can be influenced by site conditions, such as

time constraints, climatic condition, hard rock condition and other physical site constraints. Applicants can select suitable and justifiable multiplication factor(s), which are listed in Table 5, **Appendix D**, to represent the effect of site conditions on work progress. The duration of the affected work items will be prolonged by multiplying the corresponding multiplication factor(s).

4.11 For applications including multiplication factors, HyD may require the applicants to provide substantiation such as site photos and records, temporary traffic arrangement (TTA) plans and/or ground investigation reports as reference in assessment.

5.0 Procedures of PPA

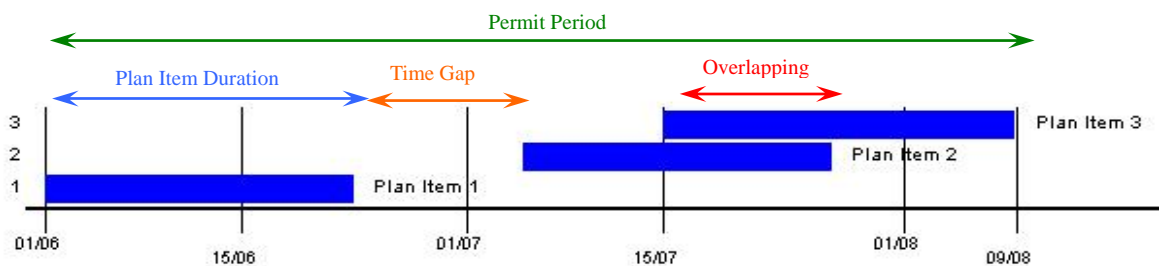
5.1 Firstly, the excavation alignments should be digitized. Applicants shall indicate the locations and dimensions of all plan items under the XP in this step. Multiple numbers of plan items are allowed in each XP application. Length or area of each plan item shall represent the extent of workfront to be fenced off at each stage of works (e.g. each TTA phase). In practice, lengths of road openings are usually limited to 20m to 30m as imposed by Hong Kong Police Force (HKPF) / Transport Department (TD). To avoid unreasonably long excavation works, the excavated length is limited to 50m; the excavated area is limited to 250m² with either the length or width being less than 50m in the XPMS. However, there is an exception to the works of cold milling and resurfacing which the excavated area can be up to maximum 500m² with either the length or width being less than 150m in every eight-hour operation period. For step-by-step process of alignment and area digitization in the XPMS, please refer to Training Notes B2.

5.2 Secondly, the appropriate category of road excavation works should be selected. Applicants shall indicate whether the excavation works are short duration works, standard works or non-standard works. For standard works, applicants shall use the standard templates established under the PPA process to determine the durations of the plan items. For short duration and non-standard works, the requirements in Clauses 3.2 and 3.4 should refer. For step-by-step process of using templates for standard work applications, please refer to Training Notes B5.

5.3 After assessing the duration of each plan item by the standard PPA template, the applicants shall schedule all plan items under the XP by adjusting the start date of

individual work items. Under normal circumstance, administrative time gap of not more than 14 days can be introduced between plan items to cater for the time required for necessary administrative preparation works (Please refer to **Scenario 5.1**). Typical administrative preparation works include applications of road work advice, parking meter suspension and/or gazette for road closure, etc. However, there is also practical situation that the area covered by an XP is neither occupied nor excavated in most of the time during the permit period and works will only be carried out under several plan items on discrete days (e.g. cold milling and resurfacing works and renewal of tram track). Under this occasion, a longer time gap of not more than 28 calendar days can be introduced between these plan items (Please refer to **Scenario 5.2**). Applicants shall clearly state the reason(s) of introducing any time gap. HyD may require the applicants to provide substantiation to justify the need and duration of such time gap introduced. The permit period is calculated after scheduling the plan items (See **Figure 5.1**).

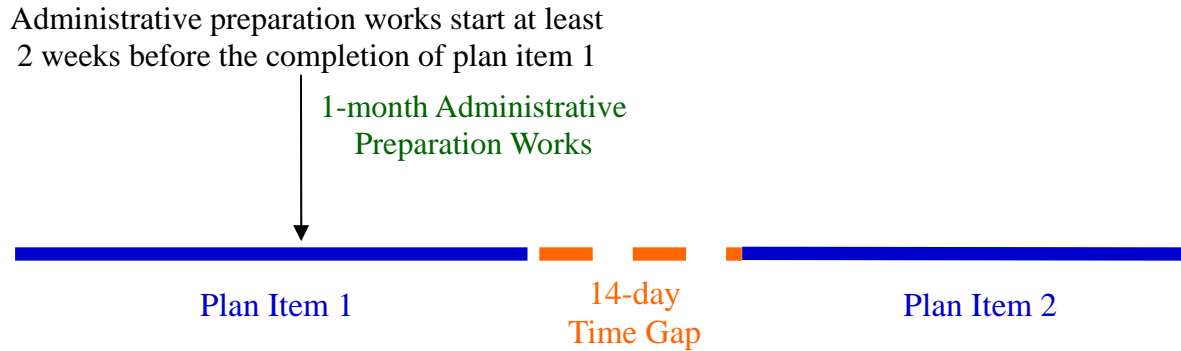
Figure 5.1 - Permit Period = Sum of Plan Item Duration + Time Gaps – Overlapping



5.4 The applicants are reminded to start any administrative preparation works as early as practical to avoid unnecessary delay. For instance, if 1 month is required to complete the administration preparation works before the commencement of the succeeding plan item, the application shall start the administrative preparation works at least 2 weeks before the completion of the preceding plan item and make use of the 14-day administrative time gap so as to ensure timely commencement of the succeeding plan item (See **Figure**

5.2). The applicants shall also change the proposed start date throughout the permit application process until reaching the permit application stage so as to isolate the time for administration preparation works before commencement of the XP.

Figure 5.2 – Administrative Time Gap

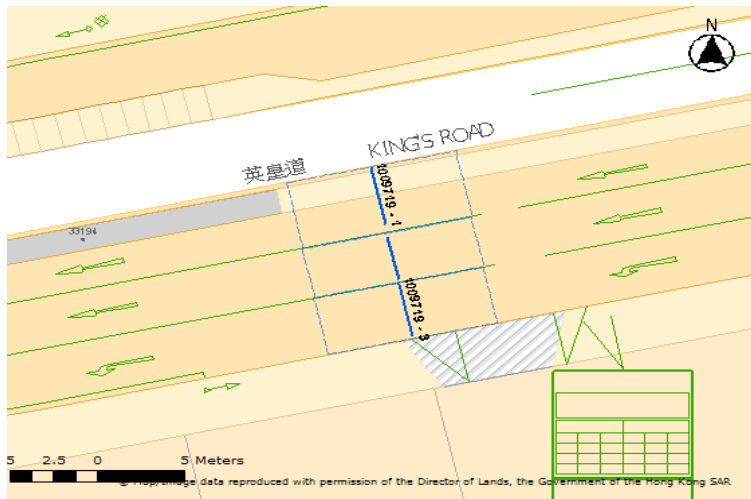


5.5 Permittees shall submit the Completion Notice (CN) in the XPMS to notify HyD about the satisfactory completion of the works.

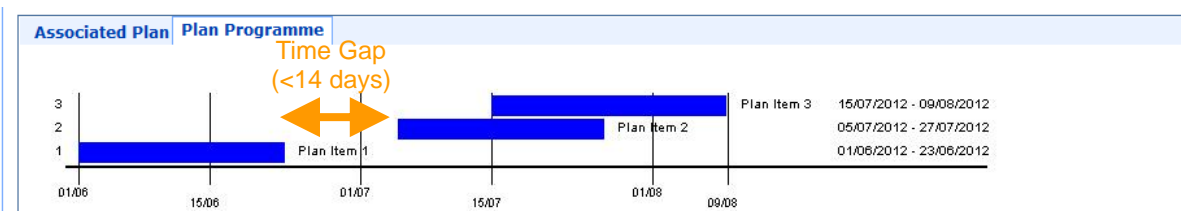
Scenario 5.1 - Excavations affect carriageways (Normal circumstance – Introduction of administrative time gap of not more than 14 days)

Example: A cross road duct will be laid in 3 phases. Site area under each phase will be kept occupied / temporarily decked until the completion of the works in that phase.

Step 1: Draw the plan items according to the phasing of approved TTA.



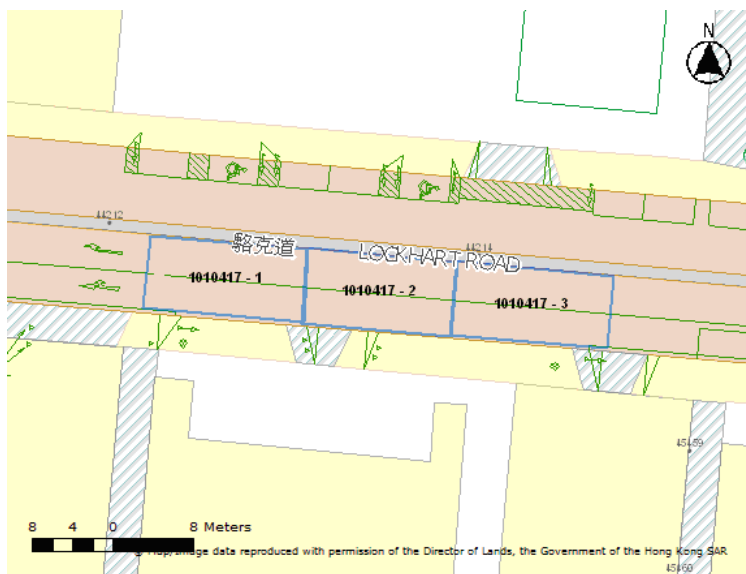
Step 2: Adjust the start date of each plan item to allow time for administrative preparation works. Introduce time gap(s) of not more than 14 days between plan items where necessary.



Scenario 5.2 - Excavations affect carriageways (Neither occupied nor excavated in most time of the permit period – Introduction of administrative time gap of not more than 28 days)

Example: Cold milling and resurfacing works will be carried out in 3 phases. Works under each phase will be completed in 1 day (on 3 Sundays). The roads will be fully reopened for public use (not occupied / temporarily decked) for other time during the permit period.

Step 1: Draw the plan items according to the phasing of approved TTA.



Step 2: Adjust the start date of each plan item. Introduce time gap(s) of not more than 28 days between plan items where necessary.

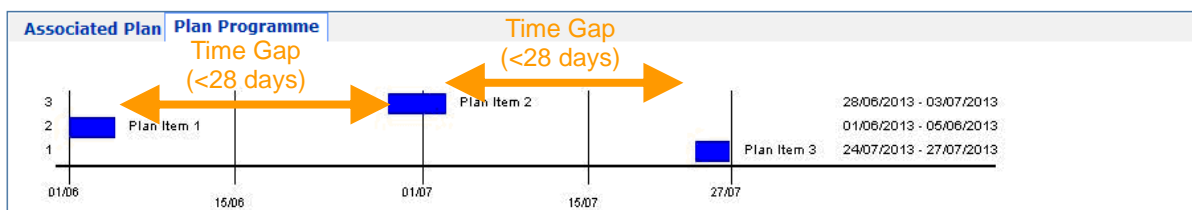


Table 1 - List of Short Duration Works

Trade	Short Duration Works
ASD	(1) Excavation for hoarding, signage, railing, street furniture, tree planting and planter construction
	(2) Trial pit excavation to identify utilities location
	(3) Minor service connection / repair works
CEDD	(1) Inspection pit excavation
	(2) Drilling of borehole
	(3) Trial pit excavation
	(4) Trial trench excavation
	(5) Slope stripping
	(6) Rectification of reinstatement defects
	(7) Removal / installation of traffic signs for Temporary Traffic Measures or rectification of defects
	(8) Continuation of emergency work carried out under Emergency Excavation Permit
DSD	(1) Breaking up manhole shafts for lining works
	(2) Continuation of emergency work carried out under Emergency Excavation Permit
	(3) Filling and sealing the disused pipes and manholes
	(4) Make good or repair manholes
	(5) Minor diversion in conjunction with the work of other utilities
	(6) Minor service / reinforcement / repair work of drainage or sewerage system
	(7) Rectification of reinstatement defects
	(8) Removal / installation of traffic signs, railings, crash gate, lamp post, fire hydrants, post box, etc. for Temporary Traffic Measures or rectification of defects
	(9) Temporary carriageway / footway widening for TTA
	(10) Trial pit excavation

Trade	Short Duration Works
ELE	(1) Continuation of emergency work carried out under Emergency Excavation Permit
	(2) Minor diversion in conjunction with the work of other utilities
	(3) Minor service / reinforcement / repair work of power supply system
	(4) Rectification of reinstatement defects
	(5) Removal of low voltage service cables not requiring shutdown of supply to other customers
	(6) Removing / installing traffic signs for Temporary Traffic Measures or carrying out rectification of defects
	(7) Replacement of underground pit cover / rectification of pit cover defect
	(8) Trial pit excavation
FTN	(1) Adjusting / raising / replacing jointing chamber frames and covers
	(2) Carrying out minor underground duct repair
	(3) Carrying out rectification work to minor reinstatement defects
	(4) Erecting / recovering telephone poles
	(5) Excavating one to three trial holes (up to 1m length x 1m breadth x 1m depth each) at adjacent locations
	(6) Laying lead-in ducts to buildings (up to 5 metres trench length)
	(7) Removing / installing traffic signs for Temporary Traffic Measures or carrying out rectification of defects
GAS	(1) Capping-off of underground main / service
	(2) Inspection of underground pipes
	(3) Installation / repair / replacement of valve
	(4) Installation of recessed type cover
	(5) Locate lost pit cover
	(6) Rectify unsatisfactory reinstatement work
	(7) Repair / replacement of subsided or damaged pit cover
	(8) Repair / replacement of syphon standpipe, corroded service pipe and risers
	(9) Repair governor impulse line / vent stack
	(10) Small pipe laying / connection work
	(11) Trial pit excavation

Trade	Short Duration Works
HSD	(1) Excavation for hoarding, signage, railing, street furniture, tree planting and planter construction
	(2) Trial pit excavation to identify utilities location
	(3) Minor service connection/repair works
HTL	(1) Broken rail joint repair / renewal
	(2) Repair of underground signaling system for autopoint switching
	(3) Erection and removal of tram pole
	(4) Trial hole excavation for facilities installation
	(5) Unsatisfactory Reinstatement Notice or road defect rectification
	(6) Continuation of emergency works carried out under Emergency Excavation Permit
HyD	Regions / Structures Division
	(1) Cold milling and resurfacing with wearing course
	(2) Cold milling and resurfacing with base course and wearing course
	(3) Coring of construction materials for testings and subsequent reinstatement
	(4) Repair of potholes, anti-skid surface and colour dressings
	(5) Repair of spalled joints and movement joints
	(6) Repair of manhole covers, rodding-eye covers, gullies, drainage gratings and utility trough covers
	(7) Construction of drop kerbs with new tactile warning tiles
	(8) Repair of paving blocks, floor tiles, tactiles warning tiles and kerbs
	(9) Installation / relocation / repair of post for street name plate, traffic sign, traffic signal, crash cushions, parapets, barriers, railings and fencing
	(10) Construction of ATC drawpit, plinth for traffic controller and bollard
	(11) Installation of mail box
	(12) Installation of detector loop
	(13) Construction of tree pits / planting
(14) Removal of planter	

Trade	Short Duration Works
HyD	Lighting Division
	(1) Installation / repair / replacement / removal / relocation of public lighting column/controller
	(2) Repair of public lighting cable faults
	(3) Installation of joint bays
	(4) Excavation of trial holes
	(5) Excavation on footway for laying lighting cables
WSD	(1) Adjust / raise / replace manhole, pit cover or frame
	(2) Connection to consumer supplies
	(3) Connection to fire hydrant for temporary supply
	(4) Continuation of emergency work carried out under Emergency Excavation Permit
	(5) Ground investigation (such as trial pit excavation, borehole, piezometer installation etc.)
	(6) Installation of pedestal fire hydrant
	(7) Installation of small size valves (150mm and below)
	(8) Minor diversion in conjunction with the work of other utilities
	(9) Minor diversion works in conjunction with the works of other utility undertaking
	(10) Rectification of minor reinstatement defects e.g. missing road markings
	(11) Removal / installation of traffic signs
	(12) Repair of damaged fire hydrants
	(13) Repair of valves / mains with minor leakage

Table 2 - List of Standard Works Templates

Trade	Standard Works Template	
ASD	0010a	Typical Works Programme for Connection Work on Flexible Carriageway
	0010b	Typical Works Programme for Connection Work on Rigid Carriageway
	0010c	Typical Works Programme for Connection Work on Paving Block Footway
	0050	Typical Works Programme for Ground Investigation on Footway (not exceeding 30m in depth)
	0060	Typical Works Programme for Installation of Settlement Marker (1 No.)
	0020	Typical Works Programme for Run-in Construction
	0030	Typical Works Programme for Construction or Removal of Hoarding Footing
	0040	Typical Works Programme for Ground Investigation with Trial Pit on Footway (not exceeding 1.5mx1.5m width and 3m in depth)
CEDD	0080	Typical Works Programme for Landslip Preventive Measures (LPM) Work
	0070	Typical Works Programme for Ground Investigation
DSD	D1	Typical Works Programme for Flexible Carriageway - Drainage Pipe Laying Work
	D2	Typical Works Programme for Rigid Carriageway - Drainage Pipe Laying Work
	D3	Typical Works Programme for Footway - Drainage Pipe Laying Work
ELE	D1	Typical Works Programme for Flexible Carriageway - Distribution Work
	D2	Typical Works Programme for Rigid Carriageway - Distribution Work
	D3	Typical Works Programme for Footway - Distribution Work
FTN	T1	Typical Works Programme for Flexible Carriageway - Ducts / Cables Laying Works
	T2	Typical Works Programme for Rigid Carriageway - Ducts / Cables Laying Works
	T3	Typical Works Programme for Footway - Ducts / Cables Laying Works

Trade	Standard Works Template	
GAS	T1	Typical Works Programme for Flexible Carriageway - Gas Pipe Laying Work
	T2	Typical Works Programme for Rigid Carriageway - Gas Pipe Laying Work
	T3	Typical Works Programme for Footway - Gas Pipe Laying Work
HSD	0010a	Typical Works Programme for Connection Work on Flexible Carriageway
	0010b	Typical Works Programme for Connection Work on Rigid Carriageway
	0010c	Typical Works Programme for Connection Work on Paving Block Footway
	0050	Typical Works Programme for Ground Investigation on Footway (not exceeding 30m in depth)
	0090	Typical Works Programme for Construction of Draw Pit / Manhole / Value Pit
	0020	Typical Works Programme for Run-in Construction
	0030	Typical Works Programme for Construction or Removal of Hoarding Footing
	0040	Typical Works Programme for Ground Investigation with Trial Pit on Footway (not exceeding 1.5mx1.5m width and 3m in depth)
HTL	0190	Typical Works Programme for Tram Pole Erection Work
	0200	Typical Works Programme for Central Refuge Construction on Carriageway (1 No.)
	0210	Typical Works Programme for Light Pole Erection Work (1 No. of Light Pole with 40m Cable)
	0100	Typical Works Programme for Renewal of Tram Track
	0110	Typical Works Programme for Ducts / Cables Laying Work on 50 m Flexible Carriageway
	0120	Typical Works Programme for Ducts / Cables Laying Work on 50 m Rigid Carriageway
	0130	Typical Works Programme for Ducts / Cables Laying Work on 50 m Footway
	0140	Typical Works Programme for Ducts / Cables Laying Work on 10 m Flexible Carriageway
	0150	Typical Works Programme for Ducts / Cables Laying Work on 10 m Rigid Carriageway
	0160	Typical Works Programme for Ducts / Cables Laying Work on 10 m Footway
	0170	Typical Works Programme for Ducts / Cables Laying Work on Road Crossing of Flexible Carriageway (per lane)
	0180	Typical Works Programme for Ducts / Cables Laying Work on Road Crossing of Rigid Carriageway (per lane)

Trade	Standard Works Template	
HyD	0390	Typical Works Programme for Construction of Pedestrian Zone with Paving Block
	0400	Typical Works Programme for Construction of Lift
	0410	Typical Works Programme for Cold Milling and Resurfacing Work (Intermittent Permit Period)
	0420	Typical Works Programme for Installation of Soil Nail
	0430	Typical Works Programme for Natural Terrain Work
	0440	Typical Works Programme for Boulder Stabilisation Work
	0220	Typical Works Programme for Concrete / Paving Block Footway Construction
	0230a	Typical Works Programme for Flexible Carriageway Construction
	0230b	Typical Works Programme for Rigid Carriageway Construction
	0240a	Typical Works Programme for Repairing Safety Fence or New Safety Fence
	0240b	Typical Works Programme for Repairing Railing or New Railing
	0240c	Typical Works Programme for Repairing Crash Cushion or New Crash Cushion
	0250a	Typical Works Programme for Road Crossing Work of Flexible Carriageway (per lane) - Roadside Gully with 5m Pipe Connection / Construction Work
	0250b	Typical Works Programme for Road Crossing Work of Rigid Carriageway (per lane) - Roadside Gully with 5m pipe Connection / Construction Work
	0250c	Typical Works Programme for Flexible Carriageway-Drainage Pipe Installation
	0250d	Typical Works Programme for Rigid Carriageway-Drainage Pipe Installation
	0250e	Typical Works Programme for Concrete / Paving Block Footway-Drainage Pipe Installation
	0250f	Typical Works Programme for Surface Channel Work
	0260	Typical Works Programme for Roadside Slope Maintenance Work
	0270	Typical Works Programme for Run-in Construction
0280	Typical Works Programme for Demolition, Extension or Repair of Central Divider	
0290a	Typical Works Programme for Cross Road Duct Laying on Flexible Carriageway (per lane)	
0290b	Typical Works Programme for Cross Road Duct Laying on Rigid Carriageway (per lane)	
0300a	Typical Works Programme for Ducting / Drawpit Construction on Flexible Carriageway	

Trade	Standard Works Template	
HyD	0300b	Typical Works Programme for Ducting / Drawpit Construction on Rigid Carriageway
	0300c	Typical Works Programme for Ducting / Drawpit Construction on Footway
	0310	Typical Works Programme for Construction of Taxi Shelter
	0320a	Typical Works Programme for Construction of Tram Shelter with Service Duct on Flexible Carriageway
	0320b	Typical Works Programme for Construction of Tram Shelter with Service Duct on Rigid Carriageway
	0330	Typical Works Programme for Directional Sign (Installation)
	0340	Typical Works Programme for Construction of Footing of Gantry Sign (1 No.)
	0350a	Typical Works Programme for Construction of Signalized Junction (without Kerb Realignment)
	0350b	Typical Works Programme for Construction of Signalized Junction (with Addition of a Traffic Lane / Kerb Realignment)
	0200	Typical Works Programme for Central Refuge Construction on Carriageway (1 No.)
	0360	Typical Works Programme for Public Lighting Installation (1 No. Lighting with 40m Cable) on Footway
	0370	Typical Works Programme for Replacement of Rusty Public Lighting Column (4 No.)
	0380	Typical Works Programme for Installation or Relocation of Public Lighting Controller (1 No.)
WSD	T1	Typical Works Programme for Flexible Carriageway - Pipe Laying Work
	T2	Typical Works Programme for Rigid Carriageway - Pipe Laying Work
	T3	Typical Works Programme for Footway - Pipe Laying Work

Table 4 - List of Work Items for Excavation Works Other Than Utility Trench Works

Work Activity Code	ASD	CEDD	HSD	HTL	HyD
011	Take over site				
021	Fence off site with necessary temporary traffic arrangement (follow the approved TTM; demarcation of site by the appropriate signs and guarding, relocation of road signs, etc)				
022a	Conduct major traffic arrangement (e.g. trial run as requested by the Police, temporary rerouting of carriageway) - 3 days				
022b	Conduct major traffic arrangement (e.g. trial run as requested by the Police, temporary rerouting of carriageway) - 7 days				
022c	Conduct major traffic arrangement (e.g. trial run as requested by the Police, temporary rerouting of carriageway) - 10 days				
023aP		Conduct clearance to new site			
023bP		Conduct initial survey on existing slope			
023cP		Conduct surface stripping on existing slope			
024aP		Mobilize material and plant			Mobilize material and plant
024bP		Set out soil nail position			Set out soil nail position
024cP					Erect hoarding
024dP		Drill hole for soil nail			Drill hole for soil nail
024eP		Conduct grouting to soil nail			Conduct grouting to soil nail
024fP		Conduct pull out test			Conduct pull out test
024gP		Construct soil nail head			Construct soil nail head
024hP					Construct drainage system
024iP					Construct staircase on slope
024jP		Fix erosion control mat			Fix erosion control mat
024kP		Conduct hydroseeding to slope			Conduct hydroseeding to slope
024lP		Dismantle hoarding			
024mP		Conduct landscaping work (as hydroseeding)			
024nP		Conduct hard rock slope surfacing work			
024pP		Conduct rock scaling and remove boulders (only rock scaling)			
024qP		Construct granite stone facing			
024rP		Construct skin wall (for 500mm thick)			
024sP		Erect fence and gate			
024tP		Install railing on slope			

Work Activity Code	ASD	CEDD	HSD	HTL	HyD
024uP		Carry out tree protection and preservation work			
024vP		Conduct tree survey			
024xP		Construct staircase on slope (for 1m wide with single handrailing)			
024yP		Construct drainage system (as 300mm U - channel with masnory apron)			
024zP		Erect hoarding for LPM			
025					Dismantle hoarding
025cP		Dismantle hoarding (as Type A hoarding)			
026					Conduct site clearance for lift construction
031	Locate utilities (gas pipe / cable location)				
032a					Erect scaffolding for spray concrete
032b					Erect scaffolding for other work
033a					Erect working platform for surface stripping
033b		Erect working platform for soil nail and rock dowel			Erect working platform for soil nail and rock dowel
041a	Break up road surface and remove spoil - Rigid surface				
041b	Break up road surface and remove spoil - Flexible surface				
041c	Break up road surface and remove spoil - Footway			Break up road surface and remove spoil - Footway	
041d			Cover walkway		
042					Break up and remove defective slope surface
042a					Demolish central divider
042b					Extend central divider
042c					Repair central divider
043					Strip surface
044		Excavate plant hole			Excavate plant hole
044a					Conduct greening work (with drilling)
045					Conduct ground investigation for lift construction

Work Activity Code	ASD	CEDD	HSD	HTL	HyD
045a		Drill hole (up to 30m deep) - Excavate inspection pit, set up drill rig & equipment, drilling, in-situ testing & sampling, logging, backfill, reinstatement			
045b		Drill hole (> 30m to 60m deep) - Excavate inspection pit, set up drill rig & equipment, drilling, in-situ testing & sampling, logging, backfill, reinstatement			
045c		Drill hole (> 60m to 90m deep) - Excavate inspection pit, set up drill rig & equipment, drilling, in-situ testing & sampling, logging, backfill, reinstatement			
045d		Drill hole (> 90m to 150m deep) - Excavate inspection pit, set up drill rig & equipment, drilling, in-situ testing & sampling, logging, backfill, reinstatement			
045e		Drill core hole			
045f		Drill inclined hole			
046a		Conduct trial pit work (1.5m x 1.5m, up to 3m deep) - Excavate, in-situ testing & sampling, logging, backfill, reinstatement			
046b		Conduct trial pit work (1.5m x 1.5m, > 3m to 5m deep) - Excavate, in-situ testing & sampling, logging, backfill, reinstatement			

Work Activity Code	ASD	CEDD	HSD	HTL	HyD
047a		Conduct trial trench work (1.5m wide, 3m deep, >1.5m to 3m long) - Excavate, in-situ testing & sampling, logging, backfill, reinstatement			
047b		Conduct trial trench work (1.5m wide, 3m deep, >3m to 5m long) - Excavate, in-situ testing & sampling, logging, backfill, reinstatement			
048a		Conduct slope stripping work (0.5m wide, 0.3m deep, up to 15m long) - Erect access ladder, excavate, in-situ testing & sampling, logging, backfill, reinstatement			
048b		Conduct slope stripping work (0.5m wide, 0.3m deep, > 15m to 30m long) - Erect access ladder, excavate, in-situ testing & sampling, logging, backfill, reinstatement			
049		Provide instrumentation			
050	Install settlement marker				
051	Excavate trench / pit in soft material, install shoring and remove spoil				
051a					Excavate trench / pit in soft material, install shoring and remove spoil for lift construction
052	Support and protect utilities / Drill and install soil nail (HyD) / Insitu tests / Conduct other in-situ testing (ASD)		Support and protect utilities / Drill and install soil nail (HyD) / Insitu tests / Conduct other in-situ testing (ASD)		
053		Drill and install rock dowel			Drill and install rock dowel
053a					Install rock mesh
053b					Construct tubular steel framed passenger shelter

Work Activity Code	ASD	CEDD	HSD	HTL	HyD
054					Construct raking drain
055	Provide temporary decking				
055a					Remove working platform for surface stripping
055b		Remove working platform for soil nail and rock dowel			Remove working platform for soil nail and rock dowel
056					Conduct tunneling work (e.g. under tram track per carriageway lane) / Form weep hole
056a					Form weep holes
057					Provide concrete for binding layer
057a					Spray concrete (include BRC fixing, curing and coring for checking)
058					Construct surface channel (including formworking and concreting) / Remove scaffolding for spray concrete
058a					Remove scaffolding for spray concrete
058b	Remove scaffolding for typical work				Remove scaffolding for typical work
059					Construct planter wall
060a					Construct simple retaining structure up to 2m high
060b					Construct simple retaining structure > 2m and up to 3m high
061	Lay pipe / cable				
061a					Construct U-channel of size up to 300mm
061b					Construct U-channel of size > 300mm up to 450mm
061c	Adjust existing utility / manhole covers		Adjust existing utility / manhole covers		
061d	Lower existing underground utilities		Lower existing underground utilities		
061e	Diverse existing underground utilities		Diverse existing underground utilities		

Work Activity Code	ASD	CEDD	HSD	HTL	HyD
061f	Remove abandoned pipe and backfilling		Remove abandoned pipe and backfilling		
061g					Conduct utility diversion for lift construction
062a	Construct drawpit / manhole / valve pit			Construct drawpit / manhole / valve pit	
062b	Connect existing manhole				
063	Conduct site inspection, testing and commissioning (CCTV record) / Water test and water connection / Cable connection including testing and commissioning				
063a	Erect hoarding post and construct concrete footing				
063b	Dismantle hoarding footing				
064	Lay drop kerb			Lay drop kerb	
064aP				Remove and dispose of tram track	
064bP				Install and fix track alignment	
064cP				Conduct rail joint welding and grinding	
064dP				Level track	
064eP				Drill and install of holding down bolt	
064f				Remove tram pole	
064g				Erect tram pole	
065a	Construct paving block run-in		Construct paving block run-in		Construct paving block run-in
065b	Construct concrete run-in		Construct concrete run-in		Construct concrete run-in
066a					Remove existing staircase
066b					Construct temporary staircase foundation
066c					Construct temporary staircase on footbridge
066c					Remove existing ramp for lift construction
067a					Construct link bridge foundation and columns

Work Activity Code	ASD	CEDD	HSD	HTL	HyD
067b					Construct link bridge
067c					Construct pre-bored H-piles
067d					Construct mini pile
067e					Construct lift foundation
067f					Install lift tower
067g					Construct lift shaft
067h					Provide finishing
067i					Conduct electric room
067j					Install glass canopy
067k					Install E&M, testing & commissioning
067l					Install untensioned beam barrier, railing and signage
067m					Construct backfilling & reinstatement after lift construction
068P					Conduct cold milling after fence off site with approved TTM, strength local area, adjust manhole cover, spray tack coat, conduct resurfacing, curing, conduct testing, provide road marking and furniture, clear site
069f		Conduct planting work			
069zP		Conduct planting work (as hydroseeding)			
070aP					Conduct boulder stabilisation work
070bP					Construct foundation for flexible barrier
070cP					Erect flexible barrier
071	Conduct backfilling and soil test				
072a	Reinstate (concrete / asphalt)				

Work Activity Code	ASD	CEDD	HSD	HTL	HyD
072b	Reinstate (paving block)				
072c					Reinstate (concrete / asphalt) after lift construction
072d					Reinstate (paving block) after lift construction
073a	Provide curing to freshly laid concrete (3 days)		Provide curing to freshly laid concrete (3 days)		
073b	Provide curing to freshly laid concrete (7 days)		Provide curing to freshly laid concrete (7 days)		
074	Provide road marking and furniture				
075	Conduct site clearance (demobilisation)				
075al					Conduct site clearance (demobilisation) after lift construction
076				Lay kerb	
076a				Lay kerb (for central refuge)	
077	Conduct geological logging by geologist		Conduct geological logging by geologist		
078					Excavate and provide temporary shoring
079					Erect formwork
080					Conduct R.C work
081	Check reinstatement quality and report completion of road opening work				
C001				Build central refuge	
C002					Prepare concrete foundation
C003					Install controller and internal wiring
C004					Remove of existing controller
F051					Footing
F052					Place anchor block
F053					Install safety fence
F054a	Install railing on straight road				Install railing on straight road
F054b					Install railing at junction bend
F055					Construct crash cushion

Work Activity Code	ASD	CEDD	HSD	HTL	HyD
F071					Construct gantry footing
F071a					Construct gantry sign footing
P001				Prepare pole hole	
P002				Disconnect power and remove existing column	
P003				Erect pole, install lantern and internal wiring	
S001					Erect traffic signal post
S002					Connect cable for traffic signal by EMSD
S003					Connect power supply by CLP / HEC
S74a					Fabricate and erect directional sign support & frame
T051					Erect tram shelter

Table 5 - Multiplication Factors for PPA Templates

Site Condition	Division	Description	Multiplication Factor
A - Time constraint	A1	10:00-16:00 only (Police / customer restriction)	2.0
	A2	2.5 hours * 2 per day (e.g. 09:00 - 11:30 & 14:30 - 17:00 for restaurants, schools or busy shopping areas)	2.4
	A3	3 working hours per day (e.g. 13-16 at Kam Wah St. market)	4.0
	A4	CNP - 19:00 to 23:00 only	3.0
	A5	CNP - 21:00 to 23:00 only	6.0
	A6	CNP - Night (19 to 23) and Sunday/holidays (10 to 17)	2.3
	A7	Others	
A - Time constraint (exclusive factors for HTL)	A7	Light Traffic Zone; (i.e. Kennedy Town, Sai Wan Ho, Shau Kei Wan, Happy Valley) (for tram track renewal only)	1.2
	A8	Heavy Traffic Zone; (i.e. Whitty Street Depot to North Point) (for tram track renewal only)	1.6
	A9	Others	
B - Climatic conditions	B1	Rainy season (April to September with % days lost > 10%) - necessity for additional preventive measures such as water pumping, erection of bund walls etc.	1.1
C - Hard rock factor	C1	Hard rock > 80% *	6.5
	C2	Hard rock > 50% & < = 80% *	5.2
	C3	Hard rock > 30% & < = 50% *	3.2
	C4	Hard rock > 10% & < = 30% *	1.9
D - Site constraint (physical)	D1	Congested underground installations (e.g. footpath of urban area or footpath of <3.5m width in rural area)	1.5
	D2	Steep road (> 1 : 10) / staircase	1.8