

**Explanatory Notes  
for the  
Grouping of  
Toe / Crest Facilities  
in  
Slope Information System**

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## **General Guidelines:**

- 1 Toe/crest facility groups and types for features shall conform to GEO Report No. 68 Table 1 subject to subsequent reviewing and the corresponding Consequence-to-life categories shall refer to GEO TGN No. 15 Annex TGN15 A1 (Appendix 1).
- 2 Only the crest and toe facilities under the worst critical-consequence section 1-1 conforming to GEO Report No. 68 are to be recorded under the Basic Information Section in SIS. The *worst-consequence section* of a feature is detailed in Section 2.3 of GEO Report No. 68. Please refer to the Report for details.
- 3 The toe and crest facilities shall be selected within the influence zone of the landslide. Guidance on the estimation of the reach of landslide debris and the extent of failure is given in GEO TGN No. 15. Facilities at too far away should not be adopted.
- 4 In general, footpaths along a carriageway are considered integrated components of the road and should not be reported separately. Classification of roads as Facility Groups shall refer to the respective Annual Average Daily Traffic (AADT) outlined in GEO Report No. 68 Figure 3 and the report entitled 'The Annual Traffic Census' published by Transport Department.
- 5 Standard facility types (see Appendix 2) should be used in all cases for updating SIS records. These standard facility types have been preset in a standard data file and the NPRS calculation sheets (in Access format downloadable on Internet at <http://hkss.cedd.gov.hk/hkss/eng/slope-info/CNPRS/NPRS.zip>) for updating SIS records. These forms should be used for all EI submissions unless agreed with CGE/SS in advance.
- 6 For amendment of facility types in SIS, record photographs showing the change of facilities should be submitted.

# Appendix 1

Table 1 -Typical Examples of Facilities Affected by Landslides in Each Consequence-to-Life Category

Group	Facilities	Consequence -to-life Category <sup>(1)</sup>
1	(a) Heavily Used Buildings – residential building, commercial office, store and shop, hotel, factory, school, power station, ambulance depot, market, hospital, polyclinic, clinic, welfare centre	1
	(b) Others – cottage, licensed and squatter area – bus shelter, railway platform and other sheltered public waiting area – dangerous goods storage site (e.g. petrol stations) – road with very heavy vehicular or pedestrian traffic density	
2	(a) Lightly Used Buildings – indoor car park, building within barracks, abattoir, incinerator, indoor games' sport hall, sewage treatment plant, refuse transfer station, church, temple, monastery, civic centre, manned substation	2
	(b) Others – major infrastructure facility (e.g. railway, tramway, flyover, subway, tunnel portal, service reservoir) – construction site (if future use not certain) – road with heavy vehicular or pedestrian traffic density	
3	– heavily used open space and public waiting area (e.g. heavily used playground, open car park, heavily used sitting out area, horticulture garden) – road with moderate vehicular or pedestrian traffic density	
4	– lightly used open-air recreation area (e.g. district open space, lightly used playground, cemetery, columbarium) – non-dangerous goods storage site – road with low vehicular or pedestrian traffic density	3
5	– remote area (e.g. country park, undeveloped green belt, abandoned quarry) – road with very low vehicular or pedestrian traffic density	

Note: (1) The consequence-to-life category refers to situation where the facilities are located within the expected travel distance of landslide debris. Any indirect consequence should also be taken into consideration, e.g. debris falling into a catchwater can travel long distance and affect other facilities. Situations where the CTL category can be downgraded are given in Section 5 of TGN No. 15.

# Appendix 2

Group No.	Facility Group	Type No.	Standard Facility Type	Past Examples	Remarks
1(a)	Buildings -occupied buildings	1A	Residential building		
		1B	Commercial office		
		1C	Store and shop	Restaurant / café, arcade, shopping mall	
		1D	Hotel	Hostel	
		1E	Factory	Workshop, vehicle service centre	
		1F	School	College, kindergarten, HK Institute of Vocational Education, university building	Only school buildings are categorised as Group 1 facilities if they are located within the expected travel distance of the landslide debris. Slopes affecting other facilities within the school compound, e.g. playground, should be categorised based on the usage of the facilities; Not including commercial or private training centre (see Facility Type No. 1Y)
		1G	Power station		
		1H	Hospital	Building within hospital premise, clinic	Also see notes for facility type of 'School' under Facility Type No. 1F
		1J	Ambulance depot		
		1K	Welfare centre	Nursery	
		1S	Market		

Group No.	Facility Group	Type No.	Standard Facility Type	Past Examples	Remarks
		1X	Catchwater w/consequence on Group 1(a) facilities		Facility type subject to risk analysis with respect to indirect consequence
		1Y	Other densely populated buildings	Fire station, police station, prison, court / magistracy building, post office, correctional institution, home for the elderly, museum, cinema, theatre, non-commercial offices, convention / exhibition centre, bank, private training centre, youth camp,	
1(b)	Other occupied facilities	1L	Bus shelter	Sheltered queue line of bus terminus	Include sheltered queue line of bus terminus but other areas within the bus terminus should be based on their actual usage; refer to Facility Type No. 3Z for bus stop
		1M	Railway platform and other sheltered public waiting area	Sheltered waiting area, rain shelter / pavilion	
		1N	Cottage, licensed and squatter area	Farm house, village house	One to three storeys village houses are structures with consequence similar to those found in cottage, licensed and squatter areas.
		1Q	Dangerous goods storage site	Kerosene store, LP Gas compound / store, petrol station, petroleum / oil depot, petroleum / fuel tank farm	
		1R	Road/footpath with very heavy traffic density		

Group No.	Facility Group	Type No.	Standard Facility Type	Past Examples	Remarks
		1U	Catchwater w/consequence on Group 1(b) facilities		Facility type subject to risk analysis with respect to indirect consequence
		1Z	Other crowded built-up area		
2(a)	Buildings -built-up area	2A	Indoor car park	Vehicle depot, car-port, garage	Include car parks with covers but without sidewalls
		2B	Building within barracks		
		2C	Abattoir		
		2D	Incinerator		
		2E	Indoor games' sport hall	Gymnasium, sport centre, indoor swimming pool	
		2G	Sewage treatment plant		
		2H	Refuse transfer station		
		2J	Church		
		2K	Temple	Shrine, pagoda	
		2L	Monastery		
		2M	Manned substation	Control room, manned power sub-station	



Group No.	Facility Group	Type No.	Standard Facility Type	Past Examples	Remarks
		2N	Civic centre	Social centre, library, city hall, town hall, youth centre, residents' association, community centre, tsz-tong (祠堂)	
		2X	Catchwater w/consequence on Group 2(a) facilities		Facility type subject to risk analysis with respect to indirect consequence
		2Y	Other thinly populated buildings	Watchman shed / guard house, Green house, changing room/lavatory/bathroom, manned police post, mortuary, crematorium, water treatment plant, bazaar, godown, warehouse	
2(b)	Other built-up facilities	2F	Quarry		A review of facility groups was carried out when preparing TGN No. 15. 'Quarry' was considered to be similar to 'Construction Site' in terms of nature and consequences of failure, and hence deleted from Facility Group No. 3 in TGN No. 15.
		2P	Railway, tramway	Tramway, MTRC/ KCR / LRT railways, Peak tramway	Building/structure above rails shall refer to their specific use and facility type
		2Q	Flyover	Vehicular bridge, viaduct pillars / piers	If it is judged that a landslide would affect the structure of the flyover to the extent that it could post hazards to the traffic on the road deck, the facility adopted should be the flyover or the traffic on the road deck, whichever gives rise to the worst consequence. In case the slope is small and it is judged that the structure will not be affected, the affected facility should be taken as the flyover.

Group No.	Facility Group	Type No.	Standard Facility Type	Past Examples	Remarks
		2R	Road/footpath with heavy traffic density		
		2S	Subway		
		2T	Tunnel portal		
		2U	Catchwater w/consequence on Group 2(b) facilities		Facility type subject to risk analysis with respect to indirect consequence
		2V	Construction sites (if future use not certain)	Demolished site, site office	
		2W	Service reservoir		
		2Z	Other non-crowded built-up facilities	Unmanned power substation, pylon, temporary structure	
3	Densely-used open space	3A	Densely-used playground	Football field, park, sports ground, sports playground, outdoor swimming pool	These examples may be classified under Facility Type No. 4B depending on frequency of usage
		3B	Open car park	Metered parking space	For area designated as car park, not including illegal parking
		3C	Densely-used sitting out area		
		3D	Horticulture garden	Plant nursery	
		3R	Road/footpath with moderate traffic density		

Group No.	Facility Group	Type No.	Standard Facility Type	Past Examples	Remarks
		3X	Catchwater w/consequence on Group 3 facilities		Facility type subject to risk analysis with respect to indirect consequence
		3Z	Densely-used open area/facilities	Bus stop, amenity area, lookout area, military area (without building), BBQ site, picnic area, camp site	These examples may be classified under Facility Type No. 4Z depending on frequency of usage
4	Lightly-used open space	4A	District open space		
		4B	Lightly-used playground		
		4C	Cemetery	Grave	
		4D	Columbarium		
		4E	Non-dangerous goods storage site		
		4R	Road/footpath with low traffic density		
		4X	Catchwater w/consequence on Group 4 facilities		Facility type subject to risk analysis with respect to indirect consequence
		4Z	Lightly-used open area/facilities	Agricultural terrace, cultivation land / area, developed green belt, farmland, helipad, sea wall, catchwater (without risk analysis with respect to indirect consequence), refuse collection point, pigsty, poultry house	These examples may be classified under Facility Type No. 3Z depending on frequency of usage

Group No.	Facility Group	Type No.	Standard Facility Type	Past Examples	Remarks
5	Remote area	5A	Country park		Excluding building and man-made facilities in country park
		5B	Undeveloped green belt	Natural terrain	
		5C	Abandoned quarry		
		5R	Road/footpath with very low traffic density	Lookout lane, pavement, staircase (very low usage), trail	
		5V	Vacant public use facility	Vacant school or civic centre	For a public facility which has been confirmed by respective authorities (e.g. LandsD) that it is not in use, then the facility should be classified as a vacant public use facility.
		5W	Uncovered reservoir		
		5X	Catchwater w/consequence on Group 5 facilities		Facility type subject to risk analysis with respect to indirect consequence
		5Z	Remote area or abandoned facilities	Abandoned facility / building, ruin	
Depends on frequency of usage	Various	Various	Various	Footpath (including footbridge)	For footpaths alongside roads, it may be assumed that footpaths are within the same group as the adjoining roads, except for Expressway (EX), Urban Trunk Roads (UT) and Rural Trunk Road (RT). Footpaths along EX, UT and RT may be taken, by default as Group 5 facility (GEO Report No. 68 Table 1). For standalone footpath, its facility group should be assessed based on pedestrian traffic density.

Group No.	Facility Group	Type No.	Standard Facility Type	Past Examples	Remarks
				Layby	The layby should be considered as part of the road.... should not be considered as an open car park.

Notes:

- (1) Users shall consider facilities within the influence zone of landslide as far as possible as the whole exercise is concerned with the determination of the consequence-to-life category of the features and facility type is just one of the many factors that need to be considered. The above table shall not be adopted for mechanical use.
- (2) The list of past examples are not exhaustive and the users are reminded of the underlying principle in determining the appropriate facility group which is to benchmark the likely consequence of those not on the list with those on the list.
- (3) The past examples listed above shall not be used in the documents for updating Slope Information System.