

**GUIDELINES FOR TREE RISK ASSESSMENT AND
MANAGEMENT ARRANGEMENT**
(9th edition (Rev. 1), 1 April 2020)



**GREENING, LANDSCAPE AND TREE MANAGEMENT SECTION
DEVELOPMENT BUREAU**

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GUIDELINES ON TREE RISK ASSESSMENT AND MANAGEMENT ARRANGEMENT

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PART 1 – RESPONSIBILITIES OF TREE MANAGEMENT DEPARTMENTS

1.1 PURPOSE

The Guidelines for Tree Risk Assessment and Management Arrangement (TRAM Guidelines) serve to provide technical and performance guidance on tree risk assessment, management, monitoring and maintenance. The key objectives are

- (a) Maximise public safety
- (b) Establish sustainable tree care practices

The TRAM Guidelines are based on international best practices with due consideration to the circumstances in Hong Kong. They should only be applied, supervised and endorsed by qualified inspection officers when exercising their professional judgment. They should not be used in a prescriptive manner, nor inhibit the development of new techniques or approaches that aim to add value to existing tree management practices. During the process of tree risk assessment, tree maintenance departments, inspection officers should consider the life-cycle of the tree and its relationship with its surrounds.

1.2 OBJECTIVES

For Tree Maintenance Departments

- *Recognise your role and responsibilities in tree risk assessment and management (TRAM) for all trees within your purview.*
- *Understand the importance of prioritising resources for undertaking TRAM of trees within high priority areas.*
- *Understand the importance of quality tree maintenance and risk assessment in protecting public safety.*

For TRAM Inspection Officer

- *Recognise your role and responsibilities in delivering quality TRAM work.*
- *Follow the TRAM Guidelines.*
- *Demonstrate competency and professionalism in your tree risk assessment.*

(Remarks: tree maintenance department refers to departments demarcated with tree maintenance responsibilities under DEVB TCW No. 6/2015 and its Appendix A.)

1.3 STRUCTURE OF GUIDELINES

The Guidelines comprise the following five parts, together with a list of supplementary appendices.

Part 1 highlights the purpose and objective of the Guidelines, and the importance of adopting an integrated approach and strategic risk assessment in tree management.

Part 2 provides the overall framework and details in implementation of tree risk assessment.

Part 3 provides examples of a series of location types of trees highlighting unfavourable tree growth conditions affecting tree stability.

Part 4 covers a set of baseline considerations to help the decision-making process in tree care.

Part 5 provides some practical checklists to facilitate tree management works.

1.4 INTEGRATED APPROACH IN TREE MANAGEMENT

The Government has adopted an 'integrated approach' in assigning responsibilities for preserving and maintaining trees on Government land among relevant departments. It is the responsibility of all tree maintenance departments to manage all assets, including trees, within areas, facilities and premises under their maintenance ambit.

A holistic process is adopted to the management of our assets. It is fundamental to understand that our trees are inextricably connected to and thus impacted by numerous bio-physical, bio-mechanical and urban conditions. Hence, the more dense and compact our urban environment, the more stress our trees will suffer. Trees grow on land that is managed by a range of responsible parties. This land may also contain soil, other vegetation and a host of other infrastructure and landscape elements that must be managed and maintained in a holistic manner.

1.5 STRATEGIC RISK ASSESSMENT IN TREE MANAGEMENT

Making reference to overseas best practices and taking into account the urban conditions in Hong Kong, the TRAM is based on a dual approach – Area Basis Assessment and Tree Basis Assessment.

Area Basis Assessment

- *Identify high priority areas where public will be affected if a tree fails.*

Tree Basis Assessment

- *Identify valuable trees (i.e. Old and Valuable Trees, stonewall trees, and Mature Trees) and high risk trees within high priority areas.*
- *Assess tree conditions in accordance with a standardised format with emphasis on the risk angle.*

1.5.1 Identify Your High Priority Areas for Tree Risk Assessment

Tree maintenance departments are required to identify areas where tree failure will pose a hazard to public safety, damage to property or cause disturbance to human activity and hence categorise the land under their management into tree risk management zones according to the intensity of use in target areas.

1.5.2 Prioritise Resources for Valuable Trees and High Risk Trees

By identifying valuable trees and high risk trees, tree maintenance departments can allocate resources to conduct tree risk assessment efficiently and undertake appropriate mitigation measures as far as practicable in a timely manner to alleviate tree risk and prioritise management of these trees.

1.5.3 Mitigate Tree Risk to Protect Public Safety

Human safety is the most important aspect in tree risk management. Tree maintenance departments must undertake management diligence to keep trees in healthy and structurally sound conditions, identify hazardous trees and take appropriate mitigation measures as far as practicable in a timely manner to protect human safety. In case of conflict between tree preservation and public safety, the latter should be given the higher priority.

PART 2 – TREE RISK ASSESSMENT

2.1 IDENTIFY YOUR LAND ALLOCATION AND TREE STOCK

Before carrying out tree risk assessment, tree maintenance departments have to:

#	Requirements
1	Reconfirm the extent of all areas with trees under your maintenance ambit. It is recommended to refer to the Geospatial Information Hub (GIH) in the Government intranet (http://gih.landsd.ccgo.hksarg/gih-hksar/view/HGH.jsp) and check with Lands Department on the extent of all your land allocation.
2	Ensure all trees under your maintenance ambit are included in your tree risk assessment and maintenance works.

2.2 UNDERTAKE TREE RISK ASSESSMENT ON AREA BASIS

Tree maintenance departments are required to categorise all the sites under their management into tree risk management zones with reference to the intensity of use in target areas.

The tree risk assessment on an 'Area Basis' aims to:

- (a) Identify areas where tree failure will pose a hazard to public safety or cause disruption to human activity; and
- (b) Prioritise resources for tree risk management according to the frequency of use of the area.

Targets are people, property, or human activity that can be injured, damaged, or disrupted by a tree failure, e.g. partial or complete road closure. A tree cannot be a hazard without the presence of a target. For sites managed by departments, tree risk management zones are determined based on the intensity of use in target areas which would be affected by tree failure.

Such site categorisation also covers sites temporarily under the management of works departments during the course of public works projects. Works departments have to approach the departments that previously managed the trees, including the Maintenance Agent of SIMAR Slopes if any, to obtain the records of previous tree inspections for at least one year or as appropriate, and familiarise themselves with existing tree conditions prior to commencement of works.

2.2.1 Categorisation of Tree Risk Management Zones

Categorisation of tree risk management zones is shown in the following table .

Intensity of Use in Target Area	Examples	Tree Risk Management Zone	Priority for Tree Risk Management	Tree Risk Assessment Frequency
<u>Intensive use</u> Areas of high traffic flow and/or high pedestrian flow, i.e. areas having traffic flow and/or pedestrian flow for at least a large portion of a day or a week.	Popular urban public parks and playgrounds, crowded streets, busy carriageways, open car parks, busy footpaths, areas adjacent to schools and buildings, popular barbecue sites in country parks, etc.	High (Category I)	Top priority	At least once a year before onset of wet season and when necessary (e.g. act on complaint)
<u>Infrequent use</u> Areas of low traffic flow and/or low pedestrian flow, i.e. target is present infrequently or irregularly within the areas.	Road verges of limited access, countryside roads, village footpaths, hiking trails, picnic sites in remote country parks, work site of a government project with hoardings and/or restricted access (except fall zone of trees, along edges of works site and abutting accessible road/footpath, which may be classified as Zone 1 category), catchwater roads, country parks forest tracks, etc.	Medium (Category II)	Second priority	Every 3 to 5 years, if resources permit, and when necessary (e.g. act on complaint)
<u>Rare use</u> Areas of rare access such as inaccessible areas, i.e. target is not commonly present within the areas.	Remote countryside slopes, dense woodlands within water gathering grounds and/or country parks, maintenance access not open to public, etc.	Low (Category III)	Low priority	When necessary (e.g. act on complaint)

Appendix 1 - Working Examples of Demarcation of Tree Risk Management Zone
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2.3 UNDERTAKE TREE RISK ASSESSMENT ON TREE BASIS

Once high tree risk management priority areas (i.e. Category I Zones) are identified, tree maintenance departments are required to undertake the risk assessment on tree basis for trees within Category I Zones.

#	Actions
1	Identify the valuable trees and high risk trees within Category I Zones.
2	Assess health and structural conditions of the identified trees systematically and professionally with particular emphasis on the risk perspective.
3	Use standardised forms promulgated by the DEVB to record the inspection findings.

Appendix 2 - Overall Workflow of Tree Risk Assessment and Management Arrangement

2.4 TREE BASIS ASSESSMENT – TREE GROUP INSPECTION (FORM 1)

#	Objectives of Tree Group Inspection (Form 1)
1	Facilitate initial screening of trees within Category I Zones.
2	Keep records for further monitoring.
3	Identify potential tree hazards for appropriate mitigation measures or for more detailed individual tree risk assessment using Form 2.

#	Actions for Undertaking Tree Group Inspection (Form 1)
1	Follow requirements for Inspection Officers in Appendix 3 to undertake Tree Group Inspection.
2	Inspect each tree in the tree group systematically.
3	Follow requirements as stipulated in Section 2.4.1 to undertake TRIAGE System.
4	Pay particular attention to potential tree hazards due to the health or structural conditions of each individual tree.
5	Use binoculars to obtain a closer view of the conditions of the canopy if necessary.
6	Use appropriate equipment and hand tools such as mallet, hand spade and probe, etc. for preliminary assessment of individual trees when required.
7	Conduct sounding tests when required, for trunks or accessible scaffold limbs with decay or suspected decay cavity, to assess the extent of structural problems.
8	Undertake mitigation measures for trees with minor defects to mitigate tree risk.
9	Decide if an Individual Tree Risk Assessment will be necessary for a particular tree.
10	Record all the findings in Form 1: Tree Group Inspection Form in Appendix 4.
11	Provide photo records in accordance with requirements as listed in Appendix 6.

For users with Tree Management Information System (TMIS) or the Tree Management Common Platform (TMCP) (under development) accounts, the use of Form 1 under the TMIS/TMCP format is recommended.

Appendix 3 - Requirements for Inspection Officers

Appendix 4 - Form 1: Tree Group Inspection Form

Appendix 5 - Explanatory Notes for Form 1

Appendix 6 - Photo-taking Guidelines for Tree Risk Assessment

2.4.1 The TRIAGE System

The Triage system is only for trees in Category I Zones. The purpose is to:

- (i) Identify trees that require more urgent attention than others.
- (ii) Prioritise these trees based on a combination of factors that impact a tree's structural health.
- (iii) Prioritise mitigation works based on the TRIAGE classification of a tree.

(a) TRIAGE Trees

- Dead trees
- Trees confirmed with Brown Root Rot (BRR) disease infection
- Old and Valuable Trees (OVTs)
- Stonewall trees
- Mature trees with an individual trunk(s) over 750mm DBH

(b) TRIAGE Classification and Colours

How TRIAGE System works?		
Tree maintenance departments have to classify their trees as per Section 2.4.1(a) within Category I Zones into the following three categories;		
Black	= Hazardous:	Trees programmed to be removed
Red	= Problematic:	Trees identified for prompt inspection and mitigation measures
Yellow	= Remaining	Trees not in 'Black' and 'Red' category
Triage Trees:		

Categorisation, necessary action and monitoring requirements of Black, Red and Yellow trees are illustrated in the following tables.

Black	
Criteria	<ul style="list-style-type: none"> ▪ Dead trees ▪ Non-OVTs confirmed with BRR disease infection
Action	<ol style="list-style-type: none"> 1. Tree removal within 4 weeks after completion of Form 1 inspection; or 2. If removal cannot be completed in 4 weeks, departments have to provide appropriate temporary mitigation measures as far as practicable to ensure public safety.
Monitoring Requirement	<ol style="list-style-type: none"> 1. For Non-OVTs confirmed with BRR disease infection, <ol style="list-style-type: none"> (a) Undertake Form 2 assessment every 3 months to monitor the tree condition until the removal of the tree; and (b) Upload the tree information to the Tree Register.

RED	
Criteria	<ul style="list-style-type: none"> ▪ OVTs confirmed with BRR disease infection ▪ Mature trees with individual trunk(s) over 750mm DBH / OVTs / stonewall trees with crown spread within dripline of confirmed BRR disease infected tree ▪ Mature trees with individual trunk(s) over 750mm DBH / OVTs / stonewall trees having one or more of the following major structural defects or health problems: <ol style="list-style-type: none"> (i) Open cavity on trunk having the longest axis \geq 1/3 trunk diameter; (ii) Co-dominant trunk with included bark / decay / cavity / split in the union; (iii) Decay / damage with more than 120 degree in the root flare; (iv) Over 25% die-back of crown; (v) Presence of wood decay fungi at trunk and / or root zone within dripline.
Action	<ol style="list-style-type: none"> 1. Undertake Form 2 assessment and complete appropriate mitigation measures within 6 weeks as far as practicable after completion of Form 1 inspection.

RED	
Monitoring Requirement	<ol style="list-style-type: none"> 1. Close monitoring by Form 2 assessment: <ol style="list-style-type: none"> (a) Every 3 months for BRR infected OVTs. (b) Every 6 months for remaining 'Red' category trees; and 2. Upload the tree information to the Tree Register; and 3. Undertake emergency inspection within 7 calendar days as far as practicable after the lowering of: <ol style="list-style-type: none"> (a) Typhoon Signal No. 8 or above; and (b) Red or Black Rainstorm Signal. <p>The emergency inspection should focus on the damage, stability and potential hazard that the tree poses to the public.</p>
Downgrading Mechanism	<ol style="list-style-type: none"> 1. To downgrade a 'Red' category tree to 'Yellow' category, tree maintenance department needs to: <ol style="list-style-type: none"> (a) Undertake all the mitigation measures as recommended in Form 2 assessment to alleviate the potential tree risk. (b) Record the completion date of mitigation measures in Form 2. (c) Provide reports and photos on the mitigation measures. (d) Confirm the major structural defects or health problems have been mitigated. (e) Record the recommendation for downgrading the tree to 'Yellow' category in Form 2. (f) Update the tree information in the Tree Register.

YELLOW	
Criteria	<ul style="list-style-type: none"> ▪ Mature trees with individual trunk(s) over 750mm DBH /OVTs / stonewall trees that are not classified in 'Black' and 'Red' category.
Action	<ol style="list-style-type: none"> 1. Undertake Form 2 assessment and provide appropriate mitigation measures for OVTs and stonewall trees. 2. Undertake appropriate mitigation measures for mature trees with individual trunk(s) over 750mm DBH having structural defects or health problems; and undertake Form 2 assessment if necessary. 3. Undertake Form 2 assessment and provide appropriate mitigation measures for mature trees with individual trunk(s) over 750mm DBH that have no visible structural defects or health problems if resources permit.
Monitoring Requirement	<ol style="list-style-type: none"> 1. Undertake Form 2 assessment every 6 months for OVTs and stonewall trees; and 2. Upload the tree information of OVTs and stonewall trees to the Tree Register.

2.4.2. Trees for Mitigation Measures or Individual Tree Risk Assessment (Form 2)

For other trees in Category I Zones not assessed through TRIAGE System, tree maintenance departments are required to identify the trees with the following criteria in Tree Group Inspection for implementing proper mitigation measures and undertaking Individual Tree Risk Assessment (Form 2) if necessary.

- Trees on a complaint list with structural or health problems.
- Trees belonging to species with brittle wood structure and having unsatisfactory health or structural conditions with failure potential.
- Trees with major defects or health problems.
- Trees growing in very stressful site conditions, i.e. severe root restriction, severe head-room restriction, with failure potential.

If a detailed tree risk assessment of individual tree is required, Form 2 shall be used for assessment on the tree conditions and formulation of appropriate mitigation measures.

2.5 TREE BASIS ASSESSMENT – INDIVIDUAL TREE RISK ASSESSMENT (FORM 2)

Form 2 is used for conducting detailed assessment of individual trees that need more attention. For all the OVTs and stonewall trees, tree risk assessment with Form 2 is required every 6 months to enhance close monitoring the conditions of these trees.

#	Actions for Undertaking Individual Tree Risk Assessment (Form 2)
1	Follow requirements for Inspection Officers in Appendix 3 to undertake Individual Tree Risk Assessment.
2	Walk completely around the tree to inspect the site conditions, root collar, trunk, and branches including inspection of the tree from some distance away, as well as close up, to assess the tree condition in relation to its surroundings.
3	Use appropriate equipment and hand tools such as binoculars, mallet, hand spade and probe, etc. when required.
4	Conduct sounding tests for trunks or accessible scaffold limbs with decay or suspected decay cavity to assess the extent of structural problems.
5	Conduct root collar inspection for trees growing at confined sites or having suspected root defects which may adversely affect tree stability.
6	Conduct aerial inspection (if necessary) to assess the structural conditions for trees in areas with frequent use and suspected structural defects which are difficult to inspect at ground level.
7	Make reference to the 'Manual of the Management of Brown Root Rot Disease' (https://www.greening.gov.hk/filemanager/content/pdf/knowledge_database/Manual-on-the-Management-of-Brown-Root-Rot-Disease.pdf) and 'Note on Common Wood Decay Fungi on Urban Trees of Hong Kong' (https://www.greening.gov.hk/filemanager/content/pdf/tree_care/Note_on_Common_Wood_Decay_Fungi_on_Urban_Trees_of_HK(May2015)_e.pdf) for tree inspection.
8	Make reference to Part 3 – Landscape and Location Conditions for inspection of stonewall trees, trees in confined space, trees with ground disturbance and trees on slopes.
9	Rate the tree risk rating with recommendations on follow-up mitigation actions to address the identified defects and tree problems.
10	Follow the 'Management Guidelines for Mature Trees' (https://www.greening.gov.hk/filemanager/content/pdf/tree_care/Paper_Mature_Trees_(finalised_and_issued)_e.pdf) and 'Management Guidelines for Stonewall Trees' (https://www.greening.gov.hk/filemanager/content/pdf/tree_care/Guilelines_for_stone_wall_trees_e.pdf) in conducting tree inspection and formulating mitigation measures.
11	Record all the findings in Form 2: Tree Risk Assessment Form in Appendix 7.
12	Provide photo records in accordance with requirements as listed in Appendix 6.

For users with TMIS / TMCP accounts, the use of Form 2 under the TMIS / TMCP format is recommended.

Appendix 3 - Requirements for Inspection Officers

Appendix 7 - Form 2: Tree Risk Assessment Form

Appendix 8 - Explanatory Notes for Form 2

Appendix 6 - Photo-taking Guidelines for Tree Risk Assessment

2.6 SENSITIVITY ANALYSIS

Trees of particular interest often draw intense public attention. When removal (including dead trees) or transplanting of these particular types of trees is necessary, tree maintenance departments are required to undertake a Sensitivity Analysis to consider the potential social impact to the community for advance planning and decision-making before tree removal. The purpose of Sensitivity Analysis is to address social concern, to improve communication and prepare proactive responses to stakeholders in the community.

The objective of Sensitivity Analysis is to enhance transparency, assist in communication with the Urban Forestry Advisory Panel (UFAP) members, and address potential public concern on particular tree removal.

2.6.1 Trees for Sensitivity Analysis

Tree maintenance departments shall undertake Sensitivity Analysis when considering the proposed removal (including dead tree) or transplanting of trees of particular interest under non-emergency circumstances. Examples of trees of particular interest are listed as below for reference:

- OVTs and trees that are potentially registerable in the Register of OVTs;
- Trees of 100 years old or above;
- Trees with trunk diameter equal to or exceeding 1.0 m (measured at 1.3 m above ground level), or with height/canopy spread equal to or exceeding 25 m;
- Stonewall trees or trees of outstanding form (taking account of overall tree sizes, shape and any special features);
- Rare tree species listed in 'Rare and Precious Plants of Hong Kong' (<http://herbarium.gov.hk/PublicationsPreface.aspx?BookNameId=1>) published by Agriculture, Fisheries and Conservation Department;
- Endangered plant species protected under the Protection of Endangered Species of Animals and Plants Ordinance (Cap 586);
- Tree species listed in the Forestry Regulations (Cap 96A) under the Forests and Countryside Ordinance (Cap. 96);
- Well-known Fung Shui trees;
- Landmark trees with evidential records to support the historical or cultural significance of the trees;
- Trees which may arouse widespread public concerns; or
- Trees which may be subject to strong local objections on removal.

2.6.2 Checklist for Sensitivity Analysis

Responsible officer of senior professional rank or equivalent is recommended to follow the checklists to undertake the Sensitivity Analysis.

#	Checklist: Actions
1	Report to the departmental directorate level of the tree maintenance department on the proposed removal of tree.
2	Explore alternative options of mitigation measures.
3	Directorate level officer to validate tree removal proposal and options of mitigation measures; and evaluate reporting requirements to address public concern on the tree removal proposal.
4	Consult GLTMS on the proposed mitigation measures and the UFAP when necessary.
5	Seek appropriate approval of the tree removal proposal.

#	Checklist: Communication
1	Involve other relevant professionals for further site inspection or review alternative mitigation measures if necessary.
2	If tree removal is still considered necessary, engage concerned stakeholders in communication prior to commencement of any tree works.
3	Prepare proactive responses to stakeholders in the community.
4	Identifying the parties, key opinion leaders and community personalities in the community (e.g. District Council (DC), local organisations, local residents, relevant concern groups, etc. to be consulted and the likely responses of these parties.
5	Appropriate initiatives (e.g. community involvement event, memorabilia, replanting, etc.) in commemoration of the tree should also be considered and included in the community engagement plan.
6	All consultation should be undertaken with clarity of risk rationale in conjunction with the landscape enhancement plan.

#	Checklist: Documentation
1	Tree Risk Assessment Forms (i.e. Form 1 and 2).
2	Tree Risk Assessment reports, e.g. tree inspection reports by resistography or sonic tomography.
3	Records of mitigation measures.
4	Previous maintenance records.
5	Compliance with reporting requirements and standards.

2.7 MITIGATION MEASURES

To ensure public safety, tree maintenance departments are required to carry out necessary mitigation measures, such as tree pruning, installation of support system, pest and disease control, site condition improvement works and / or tree removal promptly to alleviate the risk of failure.

#	Requirements
1	Refer to the "Guidelines on Arboriculture Occupational Safety and Health" (https://www.greening.gov.hk/filemanager/content/pdf/tree_care/OSH_Guidelines_2012_Dec_Issue_e.pdf) issued by the DEVB and ensure adequate occupational safety and health measures in carrying out the tree works.
2	Refer to the guidelines promulgated by the GLTMS on proper pruning practices, such as "General Guidelines on Tree Pruning" (https://www.greening.gov.hk/filemanager/content/pdf/tree_care/guideline_e.pdf) and "Do's and Don'ts in Pruning" (https://www.greening.gov.hk/filemanager/content/pdf/tree_care/factsheet_e.pdf).
3	Refer to the "Guideline on Pavement Renovation Works and Tree Stability" (https://www.greening.gov.hk/filemanager/content/pdf/tree_care/Guideline_on_Pavement_Renovation_Works_and_Tree_Stability_e.pdf) issued by the GLTMS for trees in stressful conditions.
4	Refer to guidelines promulgated by the GLTMS on pest and disease control, such as "Manual of the Management of Brown Root Rot Disease" (https://www.greening.gov.hk/filemanager/content/pdf/knowledge_database/Manual_on_the_Management_of_Brown_Root_Rot_disease.pdf) and "Note on Common Wood Decay Fungi on Urban Trees of Hong Kong" (https://www.greening.gov.hk/filemanager/content/pdf/tree_care/Note_on_Common_Wood_Decay_Fungi_on_Urban_Trees_of_HK(May2015)_e.pdf).
5	Refer to the "Proper Planting Practice – Staking and Guying" (https://www.greening.gov.hk/filemanager/content/images/tree_care/Staking_and_Guying_of_Trees_e.jpg) promulgated by the GLTMS on syinstallationstem.

Tree maintenance departments are required to follow the requirements as stated in the Technical Circular on 'Tree Preservation' (DEVB TC(W) No. 4/2020) to carry out tree removal and compensatory planting as far as practicable. Factors, such as available growing space and soil to sustain healthy tree growth, gradient of slopes, etc. have to be considered.

2.8 RECORD KEEPING

Tree maintenance departments are required to keep retrievable and accurate records of tree risk assessments, risk mitigation measures and monitoring programme undertaken for the trees under their management. For OVTs, stonewall trees and trees that require regular monitoring, tree maintenance departments need to upload the tree information to the Tree Register to enhance transparency and facilitate community surveillance of the condition of the trees concerned.

#	Actions
1	<p>Upload relevant information on the following trees that have been identified in the tree risk assessment to the Tree Register at https://www.greening.gov.hk/en/community_outreach/tree_register.html</p> <p>(a) Black TRIAGE tree confirmed with BRR disease infection that cannot be removed within 4 weeks after completion of Form 1 inspection.</p> <p>(b) Red TRIAGE trees.</p> <p>(c) Yellow TRIAGE OVTs and Stonewall trees.</p> <p>(d) Trees that require regular monitoring.</p>
2	Refer to 'Guidelines on Tree Register – data input and updating' in the Cyber Manual for Greening for uploading the required tree information in a timely manner onto the Tree Register for public information.
3	Departments have to closely monitor the conditions of those trees included in the Tree Register so that timely actions can be taken in response to any change in the tree conditions.

2.9 AUDIT INSPECTION

Tree maintenance departments are required to set up a departmental audit checking mechanism to:

- (a) Ensure tree risk assessment is carried out properly and professionally.
- (b) Ensure necessary mitigation measures are carried out promptly.

#	Actions
1	Refer to 'Guidelines on Audit of Tree Risk Assessment' in Cyber Manual for Greening and GLTMS website.
2	The audit checks shall cover not less than 10% of total number of tree risk assessments carried out by in-house staff and / or tree risk assessments conducted by outsourced service providers.
3	Conduct the audit checks as soon as practicable to monitor the quality of the assessment.
4	Review the accuracy and completeness of records.
5	Check for appropriateness of the mitigation measures and against the timelines for completion.
6	Follow up promptly with any irregularities identified during the audit checks.
7	Tree risk assessments and related procedures carried out by departments are subject to further audit checks by the GLTMS.

PART 3 – LANDSCAPE AND LOCATION CONDITONS

3.1 OBJECTIVES

Healthy trees with sound structure are valuable assets to the community. Very often, trees are confronted with various environmental stresses such as space limitation, soil compaction, lack of nutrients, abnormal soil pH, damage by construction and roadwork activities, etc. where restricted root growth, root damage and soil disturbance leading to poor root anchorage are major factors causing tree decline thus affecting stability.

A series of location types of trees highlighting unfavourable tree growth conditions affecting tree stability, such as trees on stonewalls, in confined space, with ground disturbance and on slopes are identified to draw special attention when undertaking the tree risk assessment in order to minimise the potential tree risk.

Figure 3.1.1 - Location Types of Stonewall Trees (SWT) with Surface Attachment on Stonewall

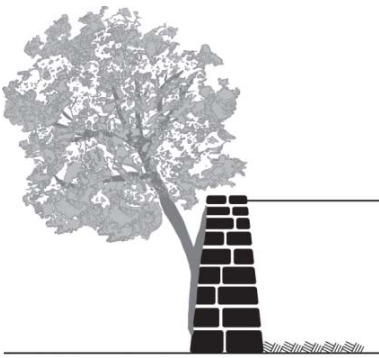
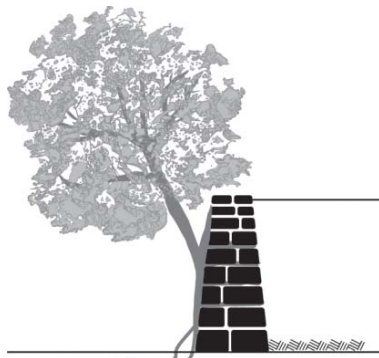


Root spread on masonry wall				
	(a) Surface attachment only	(b) Surface attachment and ground roots at toe	(c) Surface attachment and ground roots at crest	(d) Surface attachment and ground roots at crest and toe
Structural condition of tree anchorage	<ul style="list-style-type: none"> • Support solely by the surface root mass on wall with unknown amount of root penetration • Roots are mostly confined within masonry wall only 	<ul style="list-style-type: none"> • Support by the surface root mass on wall with unknown amount of root penetration and additional ground roots protruded to the wall toe • Only limited physical support could be provided by roots at toe 	<ul style="list-style-type: none"> • Support by the surface root mass on wall with unknown amount of root penetration and additional ground roots protruded to the wall crest • Provides additional strength on the tension side of SWT for anchorage 	<ul style="list-style-type: none"> • Support by the surface root mass on wall with unknown amount of root penetration and additional ground roots protruded to both wall crest and toe • Provides additional strength on the tension side of SWT for anchorage
Health Condition	<ul style="list-style-type: none"> • Nutrient / water uptake limited to confined space behind the masonry wall 	<ul style="list-style-type: none"> • Nutrient / water uptake would be facilitated by the extended ground roots at wall toe 	<ul style="list-style-type: none"> • Nutrient / water uptake would be facilitated by the extended ground roots at wall crest 	<ul style="list-style-type: none"> • Nutrient / water uptake would be facilitated by the extended ground roots at both wall crest and toe
Attention on tree anchorage (among stonewall trees)	High	High	Low	Low

Figure 3.1.2 - Stonewall Trees (Modes of Failure)

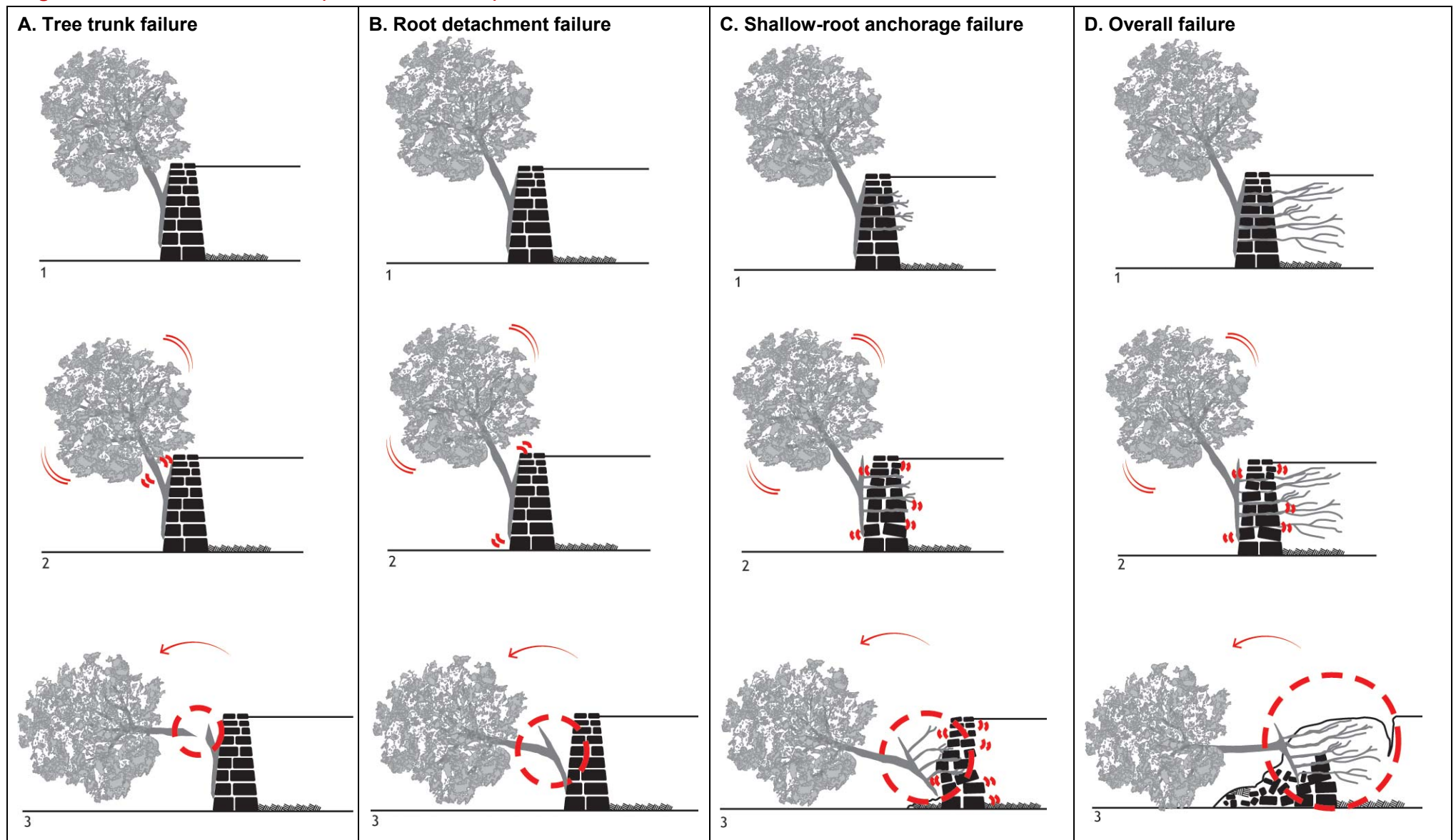


Figure 3.2 - Location Types of Trees in Confined Space

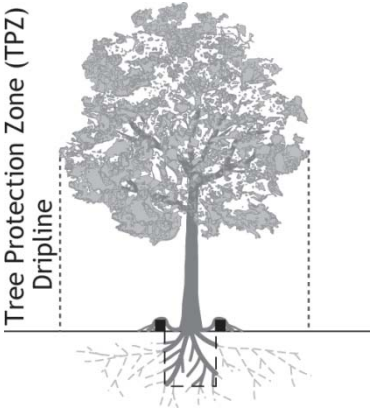
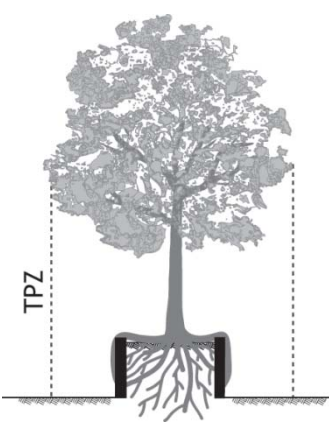
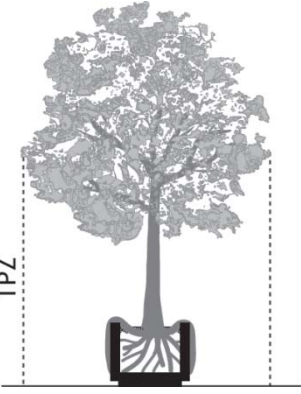
Trees grown in confined space	 <p style="text-align: center;">(a) Tree Pit</p>	 <p style="text-align: center;">(b) Small (Raised) Planter</p>	 <p style="text-align: center;">(c) Planter Box</p>
Structural condition on tree anchorage	<ul style="list-style-type: none"> • Open bottom planter • Typical tree pit size is around 1.2 m (L) x 1.2 m (W) x 1.0 m (D) • Extent of root spread outside the tree pit is uncertain as most of the surrounding soil is generally compacted or ground surface paved 	<ul style="list-style-type: none"> • Open bottom planter • Sinker root could be developed for tree anchorage • Extent of root spread depends on the planter size and relative size of the tree 	<ul style="list-style-type: none"> • Closed bottom planter • Roots confined within planter box • Tree anchorage depends on the size of planter box and relative size of the tree
Health condition	<ul style="list-style-type: none"> • Nutrient / water uptake would highly depend on maintenance 	<ul style="list-style-type: none"> • Nutrient / water uptake would highly depend on maintenance 	<ul style="list-style-type: none"> • Nutrient / water uptake would highly depend on maintenance
Attention on tree anchorage	Medium to Low (depending on extent of paving around tree pit)	Medium to Low (depending on the planter size)	High

Figure 3.3 - Location Types of Trees with Ground Disturbance

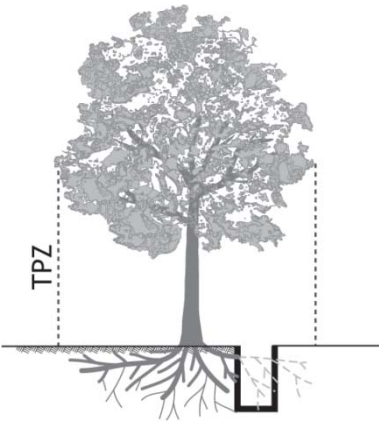
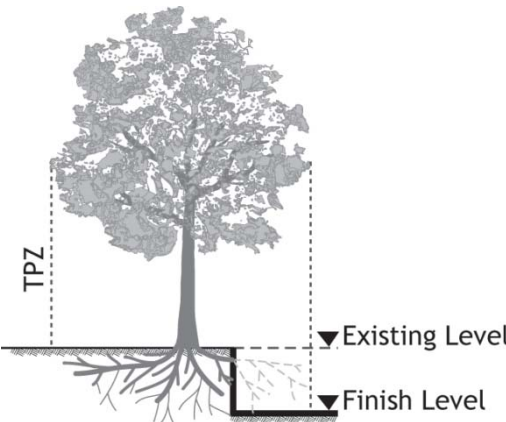
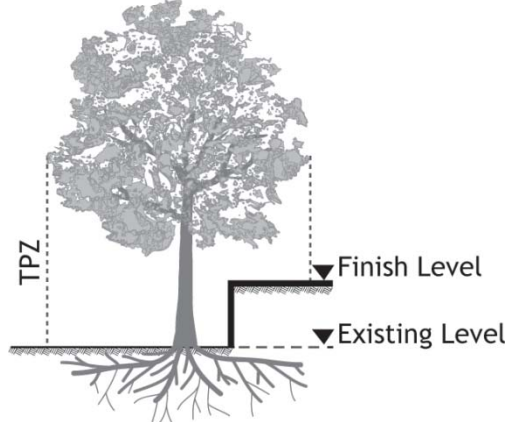
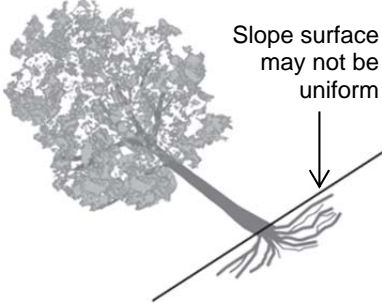

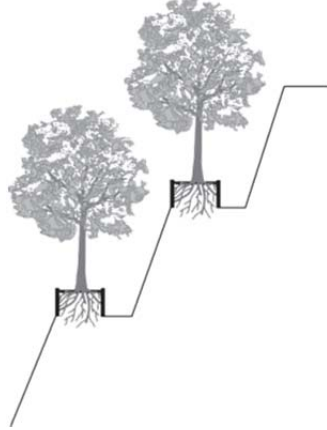
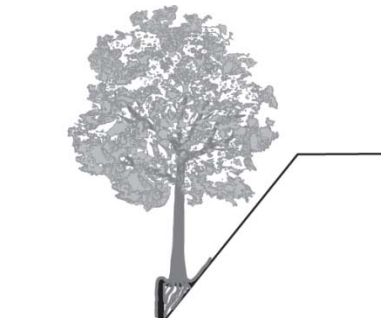
Trees with ground disturbance	 <p>(a) Trenching</p>	 <p>(b) Cutting (lowering of level)</p>	 <p>(c) Filling (raising of level)</p>
Structural condition on tree anchorage	<ul style="list-style-type: none"> • Poor root anchorage due to imbalanced root system caused by removal of roots within the dripline • No further trenching / cutting of roots should be allowed • Large roots cut from trenching may easily be infected by decay organisms and extended to lower trunk over time 	<ul style="list-style-type: none"> • Poor root anchorage due to imbalanced root system caused by removal of roots within the dripline • No further cutting of roots should be allowed • Large roots cut from lowering of level may easily be infected by decay organisms and extended to lower trunk over time 	<ul style="list-style-type: none"> • Existing root system would become stressed and suffocated, and the tree may eventually die • No soil filling should be allowed within dripline to the trunk and above root flares
Health condition	<ul style="list-style-type: none"> • Nutrient / water uptake would be affected by the physical root loss • Crown dieback on the trenching side would be obvious in the first year after trenching 	<ul style="list-style-type: none"> • Nutrient / water uptake would be affected by the physical root loss • Crown dieback in the cutting side would be obvious in the first year after cutting 	<ul style="list-style-type: none"> • Tree health may decline over time due to lack of oxygen, inadequate soil aeration and poor drainage • Health decline may not immediately become obvious
Attention on tree anchorage	High	High	Low

Figure 3.4 - Location Types of Trees on Slopes

	Trees on Slopes (natural or man-made slopes)	Trees on Hard Surfaced Slopes (shotcreted and/or with granite stone facing)		
Trees grown on slopes	<p>Leaning tree with no sign of self-correction</p> 	 <p>(a) Trees in tree rings</p>	 <p>(b) Trees in berm planters</p>	 <p>(c) Trees in toe wall planters</p>
Tree Risk Assessment Considerations (tree leaning and root anchorage)	<ul style="list-style-type: none"> • Extent of root development on tension side • Defects in roots on tension side • Root anchorage (loosen / cracked / uneven soil within root zone) • Extent of leaning versus height of tree • Sign of increased extent of leaning when compared with previous inspection • Condition of reaction wood on tension side 	<ul style="list-style-type: none"> • Site history (condition of site under hard paved surface) • Extent of roots that are visible on the slope • Conditions of roots that are visible • Position of tree on slope • Extent of leaning / falling zone • Anomalies of slope surface around tree 	<ul style="list-style-type: none"> • Exposed roots spill over planter edge • Aggressive root growth causing damage to planter wall • Refer to items (b) in Figure 3.2 "Trees in Confined Space" 	<ul style="list-style-type: none"> • Exposed roots spill over planter edge • Aggressive root growth causing damage to planter wall • Refer to items (b) or (c) in Figure 3.2 "Trees in Confined Space"
Modes of failure	<ul style="list-style-type: none"> • Root failure (e.g. root decay, poor attachment) 	<ul style="list-style-type: none"> • Root failure (e.g. root decay, poor attachment, girdling roots) 	<ul style="list-style-type: none"> • Root failure (poor root anchorage, exposed roots, girdling roots) 	<ul style="list-style-type: none"> • Root failure (root decay, poor root anchorage, exposed roots, girdling roots)
Attention on tree anchorage	High	High	Medium	High

PART 4 – TREE CARE

Responsible tree care is a team effort. Its success is founded upon the clarity of roles, responsibilities and communication amongst internal and external personnel. The following sections provide a set of baseline considerations to help the decision-making process in delivering quality work to international best practice.

4.1 MANAGEMENT

The table below illustrates the different levels of responsibilities in the process of decision-making:

Strategic Decision (director)	Professional Decision (managerial)	Operational Decision (frontline)
<ul style="list-style-type: none"> Establish the direction of steer. Formulate principles of judging the alternatives. Brainstorm and analyse the different choices. Give steer. Oversee outcome. Evaluate feedback and prioritise departmental resources. 	<ul style="list-style-type: none"> Recognise the need for a steer. Generate alternatives. Evaluate the alternatives. Green light to execute or seek steer. Monitor outcome. Gather feedback. Evaluate feedback and refine work processes. 	<ul style="list-style-type: none"> Identify, verify and establish the tree problem. Carry out assessment and determine the constraints. Identify alternatives and recommend the preferred option. Execute or seek steer. Evaluate results and provide feedback.

Purpose	
To maximise the long-term efficiency and effectiveness of tree management, maintenance, monitoring and compliance.	
#	Actions
1	A robust institutional set up of qualified and trained in-house staff to undertake the required duties to meet the short, medium and long-term delivery on all aspects of tree management.
2	A strategic framework to progressively procure, train and qualify in-house staff to meet the short, medium and long-term needs.
3	Verify tree works are carried out, supervised, monitored and validated by relevant personnel.
4	Communication and consultation are efficiently and effectively undertaken to manage public expectations and sensitivities.
5	The tree management supply chain complies with all requirements at all stages of works.
#	Communication
1	Communication framework that clearly identifies the following: <ul style="list-style-type: none"> ▪ Chain of command; ▪ Feedback loops; ▪ Timeframes for communicating to different parties; ▪ Consultation requirements to parties such as, but not limited to: stakeholders; local residents; District Councils; government departments, bureaux and agencies; ▪ Method of communication and consultation such as types and frequency of meetings; notifications; forums; displays.
2	A developed and tested emergency communication procedure in the event of tree failure or emergency tree removal.
3	Suite of communication templates that can be readily deployed to succinctly and factually articulate: <ul style="list-style-type: none"> ▪ Upcoming scheduled works; ▪ Chronology of events; ▪ Progressive updates.
4	Assigned personnel to execute the communication framework across all stages of works.

#	Documentation
1	A robust set of contract documents and technical specifications that covers all required aspects of tree care to meet the quality standards as detailed in all relevant Technical Circulars, Guidelines and Standards, the British Standards BS3998, the American National Standards ANSI Z133 and ANSI A300 as the reference.
2	Contract documents that clearly articulate the following: <ul style="list-style-type: none"> ▪ Defined standards-based scope of works. ▪ Required services with onus on the Contractor to deliver methodology of works; completeness of documentation; inspection points; sign-offs; regulatory approvals during all stages of works. ▪ Measurable outputs through contract enforcement procedures.
3	Verify documentation and compliance to record-keeping standards and protocols.

4.2 MAINTENANCE

Quality tree care starts when a tree is selected and planted. Good maintenance assures the tree's sound establishment and healthy growth throughout its life, minimises remedial costs and significantly contributes to tree safety.

Purpose	
To instil a positive culture and quality practices toward the long-term care of your tree assets and minimise risk to 'As Low As Reasonably Practicable' (ALARP).	
#	Actions
1	Confirm that the contract specifies all maintenance requirement details.
2	Conform to government planting guidelines and international best practices.
3	Right tree in the right place: <ul style="list-style-type: none"> ▪ Plant with clear objectives. Choose the right species. ▪ Procurement of quality nursery stock: Buy young, buy healthy. ▪ Thorough site and stock preparation before planting. ▪ Provide and maintain optimal environment for healthy tree growth such as but not limited to: adequate aerial and underground space for sustainable growth; fertile soil of appropriate type, well aerated, correct soil volume and optimum moisture content; proper drainage.
4	Structural training at right age and right time to achieve structural integrity for life.
5	Draw up maintenance planner to plan ahead and coordinate effectively.
6	Engage qualified professionals to assess and maintain the trees. Undertake TRAM to maximise tree safety (Part 2 refers).
7	Instil proper arboricultural practice in all facets of tree maintenance.
8	Protect trees from construction damage.
9	Build and upkeep staff knowledge, skills and quality of work through continuous training and knowledge sharing.
#	Communication
1	Proactive communication both internally and externally with suppliers and contractors for: <ul style="list-style-type: none"> ▪ Recognising areas for improvement for prompt follow-up; ▪ Establish feedback loop for improvement; ▪ Regular review of maintenance planner to improve workflow and better use of resources.
2	Close and constant liaison with suppliers for provision of quality stock and equipment.
3	Maintain supervisory accountability through establishing communication two-way across all levels to facilitate supervision and reflection.

#	Documentation
1	Succinct and informative maintenance manual.
2	Clear, retrievable maintenance records.
3	Up to date inventory or database of tree asset.
4	<p>Regular Scheduled Programmed update of tree inventory with a particular focus on OVTs, stonewall trees, TRIAGE Red trees and trees require regular monitoring (Section 2.8 refers):</p> <ul style="list-style-type: none"> ▪ Update information on Tree Register. ▪ Update input to TMIS or TMCP.

4.3 MONITORING

Improvement in tree management performance relies on continuous monitoring and evaluation which help track work progress and facilitate decision making. Monitoring and evaluation processes can be undertaken in-house or outsourced, but independence of the monitoring team is important in ensuring credibility.

Purpose	
To validate the integrity of your tree management programme and facilitate continuous feedback and improvement.	
#	Actions
1	Establish clear objectives in drawing up the monitoring programme.
2	Sound, systematic and consistent monitoring methodology.
3	Compliance check against contract specifications, government guidelines and regulations.
4	Desktop review for quality of output and deliverables.
5	Site checks for accuracy against written records.
6	Track progress.
7	Promptly rectify identified anomalies. Investigate and analyse the cause.
8	Carry out regulatory actions as required.
9	Forward-looking evaluation to improve workflow and refine approaches.
10	Review effectiveness and make adjustments in future work.
#	Communication
1	Clear chain of command for effective communication and prompt follow-up.
2	Evidence based findings clearly conveyed to staff and contractors.
3	Clear time frame for reporting rectified output.
4	Inform management on systematic issues identified.

#	Documentation
1	<p>A set of record that clearly articulate the following:</p> <ul style="list-style-type: none"> ▪ Date, time, personnel involved, type of tree management work, observations, result of each monitoring event; ▪ All communications with outsourced service provider (consultants and contractors); ▪ Follow-up action of identified anomaly and / or disorder.
2	Monitoring manual with clear objectives, methodology and schedule.
3	Retrievable records of monitoring results.
4	Updated records of rectified deliverables.
5	Report on systematic issues and improvement recommendations.

4.4 COMPLIANCE

Compliance reflects competence and success of departments in meeting the required standards and delivery of quality work. It involves an ongoing process of auditing and monitoring.

Purpose	
To validate the accuracy of tree management actions, communication and documentation against current internal and external policies, procedures, regulations and guidelines.	
#	Actions
1	Establish systematic internal control procedures that comply with the “Guidelines on Audit of Tree Risk Assessment” (Section 2.9 refers).
2	Engage independent personnel to achieve an objective audit.
3	Identify key elements for audit.
4	Review output and deliverables for evidence of non-compliance.
5	Investigate the cause of non-compliance.
6	Explore ways to rectify non-compliance.
7	Recommend improvement measures to prevent recurrence of non-compliance or non-conformity.
8	Review the need for refinement of departmental policies, strategies, regulations, guidelines, procedures and resource allocation.
9	Identify and recommend areas for long term improvement.
#	Communication
1	Verify compliance to set communication processes.
2	Verify completeness of communication and consultation material including but not limited to: minutes of meetings; follow-up actions; confirmation of recorded information; prompt correction to inaccurate or misleading public statements.
3	Auditors to maintain constructive communication with auditees.
4	Auditees to receive feedback from auditors with openness.
5	Encourage information sharing on feedback and recommendation to bridge performance gaps across different teams of the department.
#	Documentation
1	Audit manual or guideline with clear objectives, scope and schedule.
2	Retrievable records of audit results and recommendations.
3	Retrievable records of improvement measures implemented.

PART 5 – FORMS | TEMPLATES | CHECKLISTS

Good planning and close supervision are essential to the delivery of quality tree management work. This part provides some tools including forms, templates and checklists to assist you in carrying out your work more effectively. You can customise them to suit your departmental use.

5.1 FORMS

Good forms help to define the scope and level of details of the data required, standardise the format of the acquired data to facilitate data management and analysis, and provide structured way of understanding the attributes of the tree management results so that the senior management can understand how results are reported. The Form 1 and 2 provided under this guideline serve to list out the fundamental details that the Inspection Officer has to collect on site and any supplementary information including photos, site plans, elaborated observations, results of inspection through advanced equipment should complement the forms to give a comprehensive account of the conditions of the inspected trees.

5.2 TEMPLATES

Templates control the overall look and layout of any required messages to facilitate communication within each department and with stakeholders and interest groups. They contain essential information / elements of common interest.

5.2.1 Reporting

From time to time, there are cases that draw media and / or public attention and written reports apart from tree inspection records are essential to enhance public understanding of the situation. Written reports produced under these situations should be comprehensive, concise, convincing and conclusive. The format of reporting should make reference to the *ANSI A300 (Part 9) – 2017 Tree Risk Assessment, Section 94.6.2.1*. This should be the minimum standard adopted by all inspection officers. It is the responsibility of such officers to provide a well-planned and considered report. The content should be thorough in its investigation and assessment; quantifiable in data and completeness in facts and documentation.

- *Identification and location of the specified tree(s);*
- *A description of the methods used;*
- *Tree risk assessment data;*
- *Recommendations for mitigating risk or additional assessments; and*
- *Recommendations for monitoring and follow-up.*

5.2.2 Signs and Notices

Display of signs and notices on site are useful for communication with the local community and enhances transparency of departments' work on specific trees. They also serve as visual reminders to the general public on hazards that may be associated with the trees. Some suggested examples are provided below:

Warning sign on pest treatment

植物噴有農藥/殺蟲藥，切勿觸摸。

**Plants sprayed with pesticides / insecticides,
do not touch.**

Name of Tree Maintenance Department (Optional) :
Contact Telephone Number (Optional):

Notice on tree hazard and removal

經樹藝師詳細檢查後，確認此樹【根系腐爛/顯著傾側/其他缺陷(請簡述) 1】，並有潛在倒塌危險。

此樹將於 月 日移除，以保障公眾安全。

After detailed inspection by arborist, this tree was confirmed to have potential danger of collapse due to significant (decay/ leaning/ other defects to be specified) . This tree will be removed on (Date) to ensure public safety.

Name of Tree Maintenance Department (Optional) :
Contact Telephone Number (Optional):

5.3 CHECKLISTS

Good checklists can help develop work planning by allowing you to ‘check’ each item off as the work plan is developed. It provides record and aids the management in ensuring that all aspects of the work and / or processes are considered.

The following checklists are provided for your use.

#	Content
1	Equipment / Tools and Personal Protective Equipment for Tree Inspection
2	Photographic Documentation for Tree Risk Assessment
3	Emergency Response
4	Sensitivity Analysis
5	Tree Removal (non-emergency situation)

5.3.1 Checklist: Equipment / Tools and Personal Protective Equipment for Tree Inspection

Equipment / Tools and Personal Protective Equipment for Tree Inspection	
I. Equipment / Tools	
Camera	<input type="checkbox"/>
Mallet	<input type="checkbox"/>
Binoculars	<input type="checkbox"/>
Diameter tape / Tape measure / Tapeline	<input type="checkbox"/>
Notepad and Stationery	<input type="checkbox"/>
Hand spade (Optional)	<input type="checkbox"/>
Probe (Optional)	<input type="checkbox"/>
Gloves (Optional)	<input type="checkbox"/>
Shoe covers (Optional)	<input type="checkbox"/>
Clinometer (Optional)	<input type="checkbox"/>
Magnifying glass (Optional)	<input type="checkbox"/>
Portable flashlight (Optional)	<input type="checkbox"/>
Note Equipment shall be kept clean and maintained in good condition. Equipment that has been in contact with confirmed / suspected Brown Root Rot infected trees should be disinfected immediately after operation. Gloves and shoe covers should be disinfected or properly disposed after use.	

Equipment / Tools and Personal Protective Equipment for Tree Inspection	
II. Personal protective equipment (PPE)	
Clothing and footwear appropriate for work condition and weather	<input type="checkbox"/>
Drinking water	<input type="checkbox"/>
First-aid kit	<input type="checkbox"/>
Hard hat / Helmet	<input type="checkbox"/>
Reflective vest	<input type="checkbox"/>
Sun glasses (Optional)	<input type="checkbox"/>
Sun screen (Optional)	<input type="checkbox"/>
Insect repellent (Optional)	<input type="checkbox"/>
<p>Responsibilities</p> <p>Employers have duties on guidance, training and supervision with respect to use of PPE. They should ensure that their employees know why and when PPE is used, its maintenance or replacement schedule and limitations. They should regularly monitor proper use of PPE and thoroughly investigate causes of any non-compliance in using PPE. Appropriate and regular reminder to employees to use PPE is necessary, such as job briefing, signs posted on work sites etc.</p> <p>Enquiries</p> <p>For enquiries about occupational health and hygiene matters, you may contact the Labour Department's Occupational Safety and Health Branch through: Telephone: 2852 4041 Fax: 2581 2049 Email: enquiry@labour.gov.hk. Information on the services offered by the Labour Department and on major labour legislation can also be found on website at http://www.labour.gov.hk.</p>	

5.3.2 Checklist: Photographic Documentation for Tree Risk Assessment

Photographic Documentation for Tree Risk Assessment	
I. General	
<u>All photos are illustrated with dates and time.</u>	<input type="checkbox"/>
All photos are coloured.	<input type="checkbox"/>
Proper annotations and descriptions are provided.	<input type="checkbox"/>
For record of remedial measures, photos should be taken from similar view angles and clearly show the tree condition before and after the operation.	<input type="checkbox"/>
All photos are taken in a specific manner to reflect the change of the tree groups or the individual trees when comparing to the relevant and retrievable records.	<input type="checkbox"/>
II. Form 1	
Overall views showing the tree group and its adjacent site conditions.	<input type="checkbox"/>
Closer views of the tree group from different angles clearly showing its conditions.	<input type="checkbox"/>
Views showing site conditions or changes that may have an impact on tree health or structural conditions.	<input type="checkbox"/>
Views showing the potential impact on targets / sensitivity in case of tree failure.	<input type="checkbox"/>
Views clearly showing tree health and structural conditions, in particular for stand-alone trees and street trees, are captured as far as practicable.	<input type="checkbox"/>
Close-up views clearly showing trees having notable arboricultural defects, disorders or anomalies (if any).	<input type="checkbox"/>

Photographic Documentation for Tree Risk Assessment	
III. Form 2	
A. Overall Condition	
Overall views showing the tree from different angles, its adjacent site condition and extent of leaning (if applicable).	<input type="checkbox"/>
Views showing site conditions or changes that may have an impact on tree health or structural conditions.	<input type="checkbox"/>
Views showing the potential impact on targets / sensitivity in case of tree failure.	<input type="checkbox"/>
B. Crown Condition	
Views showing general conditions of the crown to illustrate the vigour, foliage density and colour.	<input type="checkbox"/>
Close up views for crown defects.	<input type="checkbox"/>
C. Trunk and Branch Condition	
Views showing general conditions of the trunk(s) and major branches illustrating the structural integrity.	<input type="checkbox"/>
Close up views for trunk and / or branch defects.	<input type="checkbox"/>
D. Lower Trunk / Root Condition	
Views showing general conditions of the root flare and disturbance that may damage the root zone.	<input type="checkbox"/>
Close up views of lower trunk and / or root defects.	<input type="checkbox"/>

5.3.3 Checklist: Emergency Response

Emergency Response	
A. Actions	
Call '999' immediately for tree failure incident involving loss of human life or major injury (where the injured person is admitted or is to be admitted to hospital).	<input type="checkbox"/>
Check on the damage, stability and potential hazard of remaining tree (if any) poses to the public.	<input type="checkbox"/>
Temporarily fence off the tree failure area.	<input type="checkbox"/>
B. Communication	
Follow departmental protocol and notify GLTMS immediately without any delay when there is loss of human life or major injury.	<input type="checkbox"/>
Follow departmental protocol and notify GLTMS as soon as possible in the case of substantial damage to properties, serious / complete blockage to major pedestrian / vehicular route(s).	<input type="checkbox"/>
For typhoon signal no. 8 or above, report to GLTMS on the total of trees damage within 72 hours after the signal is lowered.	<input type="checkbox"/>
C. Relevant Documentation	
Take full photographic records of the tree(s) concerned before removal.	<input type="checkbox"/>
Tree Failure Report to GLTMS.	<input type="checkbox"/>

5.3.4 Checklist: Sensitivity Analysis

Sensitivity Analysis	
A. Actions	
Report to the departmental directorate level of the tree maintenance department on the proposed removal of sensitive trees.	<input type="checkbox"/>
Explore alternative options for mitigation measures.	<input type="checkbox"/>
Directorate level officer to validate tree removal proposal and options of mitigation measures; and evaluate reporting requirements to address public concern on the tree removal proposal.	<input type="checkbox"/>
Consult GLTMS and UFAP (through GLTMS when necessary) on the proposed mitigation measures.	<input type="checkbox"/>
Seek appropriate approval of the tree removal proposal.	<input type="checkbox"/>
B. Communication	
Prepare proactive response to stakeholders in the community. Consult GLTMS on the proposed mitigation measures.	<input type="checkbox"/> <input type="checkbox"/>
Involve other relevant professionals for further site inspection or review on alternative mitigation measures if necessary.	<input type="checkbox"/>
If tree removal is still considered necessary, engage concerned stakeholders in communication prior to commencement of any tree works.	<input type="checkbox"/>
Prepare proactive response to stakeholders in the community.	<input type="checkbox"/>
Identifying the parties, key opinion leaders and community personalities in the community (e.g. District Council (DC), local organisations, local residents, relevant concern groups, etc. to be consulted and the likely responses of these parties.	<input type="checkbox"/>
Appropriate initiatives (e.g. community involvement event, memorabilia, replanting, etc.) in commemoration of the tree.	<input type="checkbox"/>
All consultation should be undertaken with clarity of risk rationale in conjunction with the landscape enhancement plan.	<input type="checkbox"/>
C. Relevant Documentation	
Tree Risk Assessment Forms (i.e. Form 1 and 2).	<input type="checkbox"/>
Tree Risk Assessment reports, e.g. tree inspection reports by resistography or sonic tomography.	<input type="checkbox"/>
Records of mitigation measures.	<input type="checkbox"/>
Previous maintenance records.	<input type="checkbox"/>
Compliance with reporting requirements and standards.	<input type="checkbox"/>

5.3.5 Checklist: Tree Removal (non-emergency situation)

Tree Removal (non-emergency situation)	
A. Actions	
Department to prepare Tree Preservation and Removal Proposal (TPRP) for TWVP approval as appropriate; or check for blanket approval from LandsD to process TPRP.	<input type="checkbox"/>
Check if trees of particular interest, irrespective living or dead, are involved, conduct Sensitivity Analysis when necessary.	<input type="checkbox"/>
B. Relevant Documentation	
TPRP as required by relevant DEVB's technical circular.	<input type="checkbox"/>

Appendix 1 - Work Examples of Demarcation of Tree Risk Management Zone

1. Example One : Shing Mun Country Park

Step 1: Desktop Demarcation



Step 2



Step 3



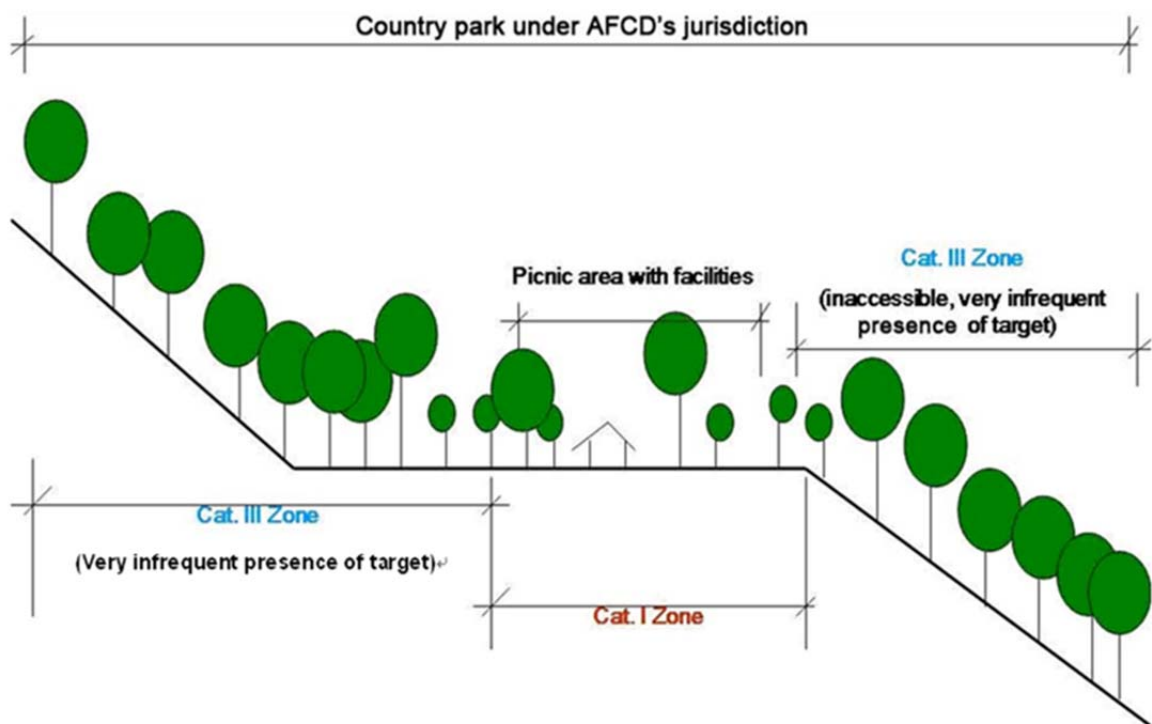
Step 4



Trees in Cat. I zone,

(source of photo:
AFCD)

Step 5



2. Example Two : Kowloon Park and pavements along Nathan Road, Tsim Sha Tsui

Step 1: Desktop Demarcation



Step 2

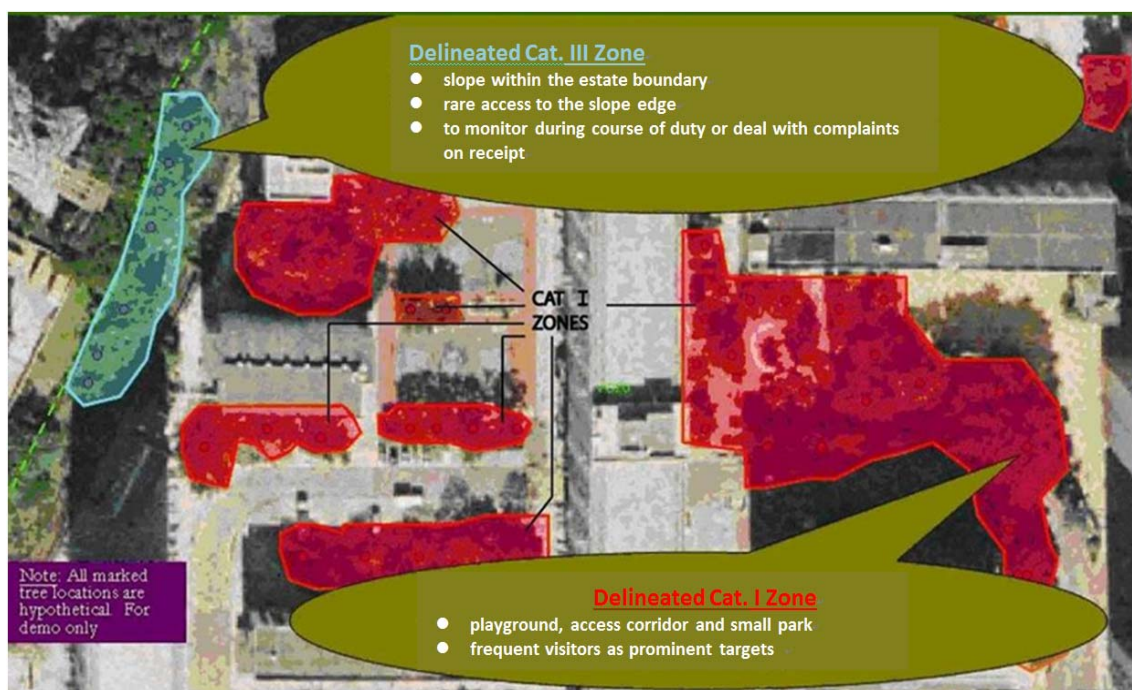


3. Example Three : Lei Muk Shu Estate, Kwai Chung

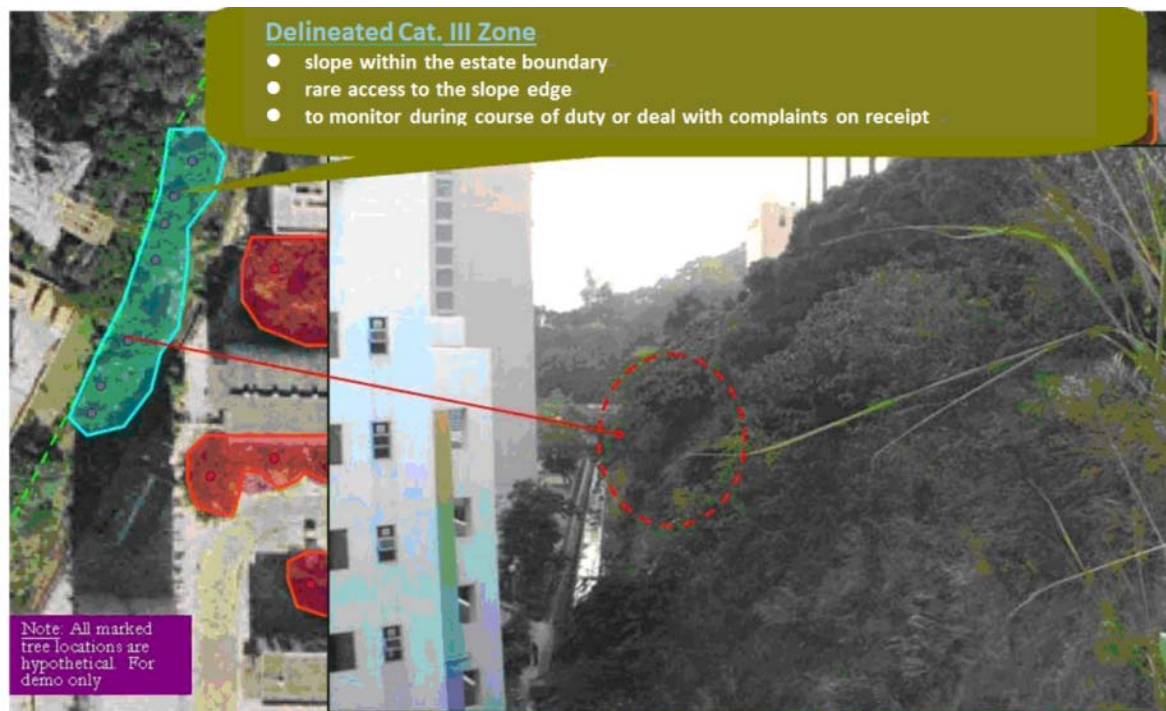
Step 1: Desktop Demarcation



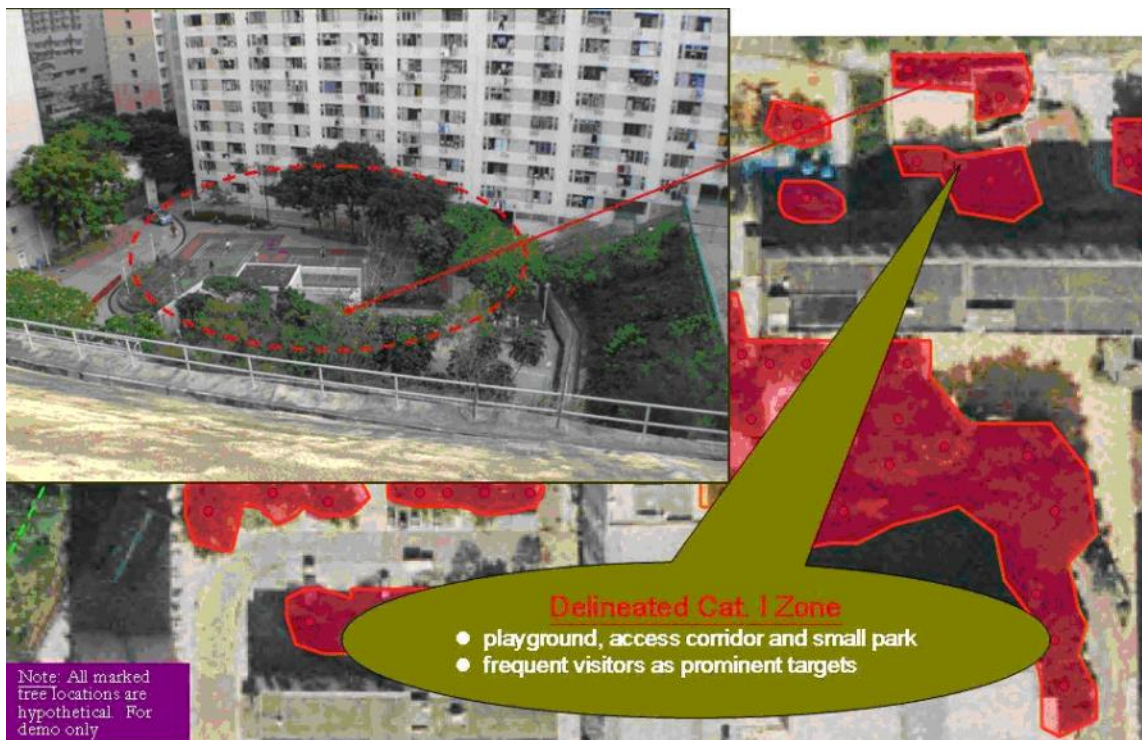
Step 2



Step 3

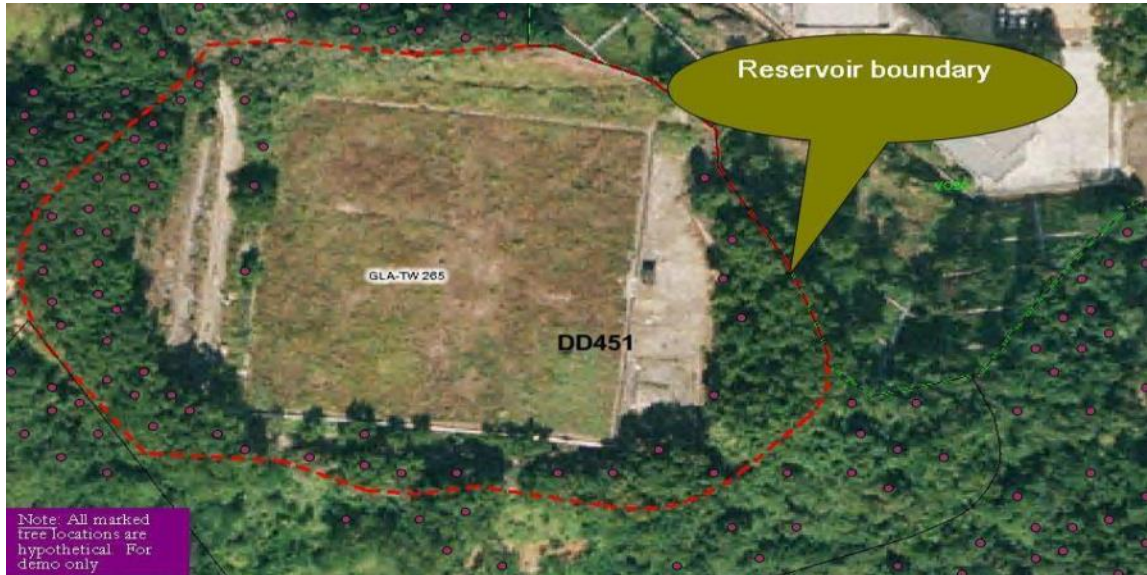


Step 4



4. Example Four : Tsuen Wan No.2 Fresh Water Service Reservoir, Kwai Chung

Step 1: Desktop Demarcation

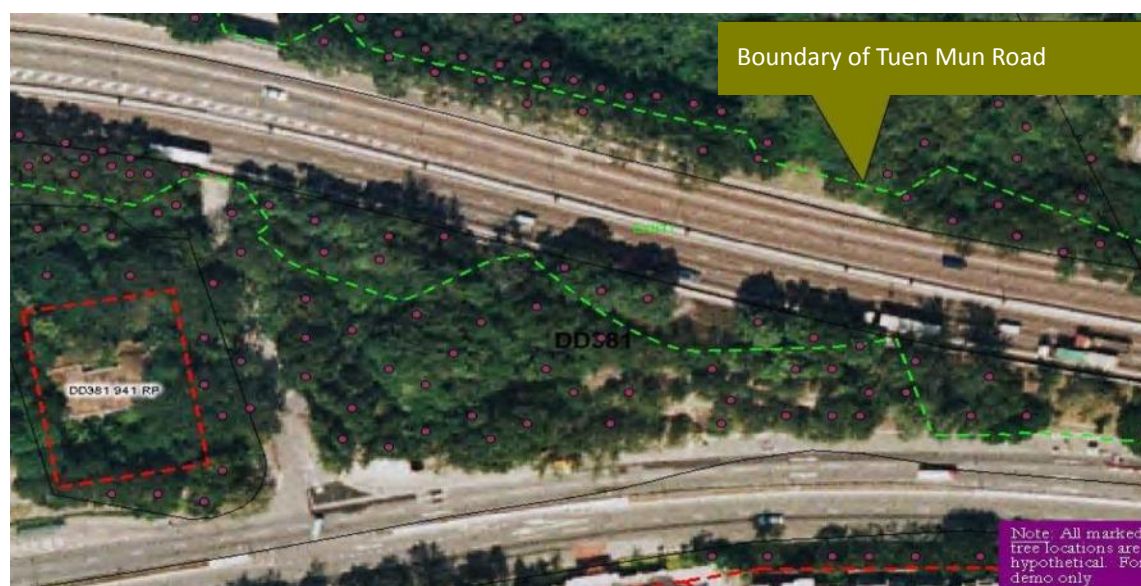


Step 2

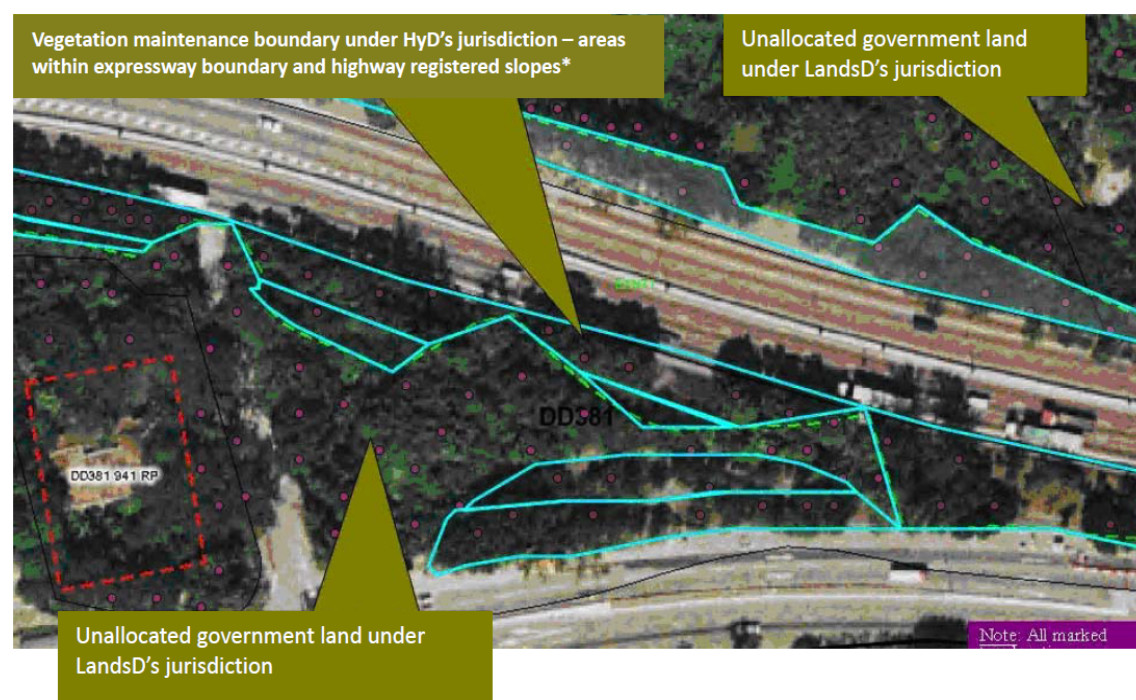


5. Example Five : A site along Tuen Mun Road

Step 1: Desktop Demarcation



Step 2

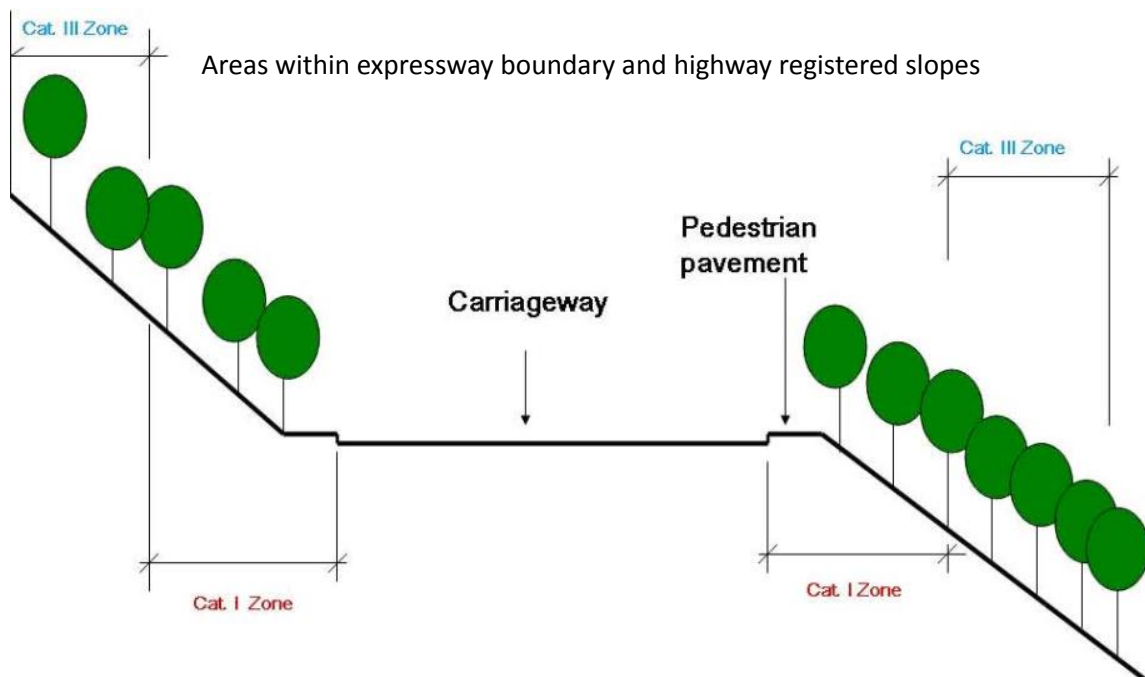


*highway registered slopes mean slopes maintained by HyD as registered in the Slope Maintenance Responsibility Information System (SMRIS) of LandsD

Step 3



Step 4



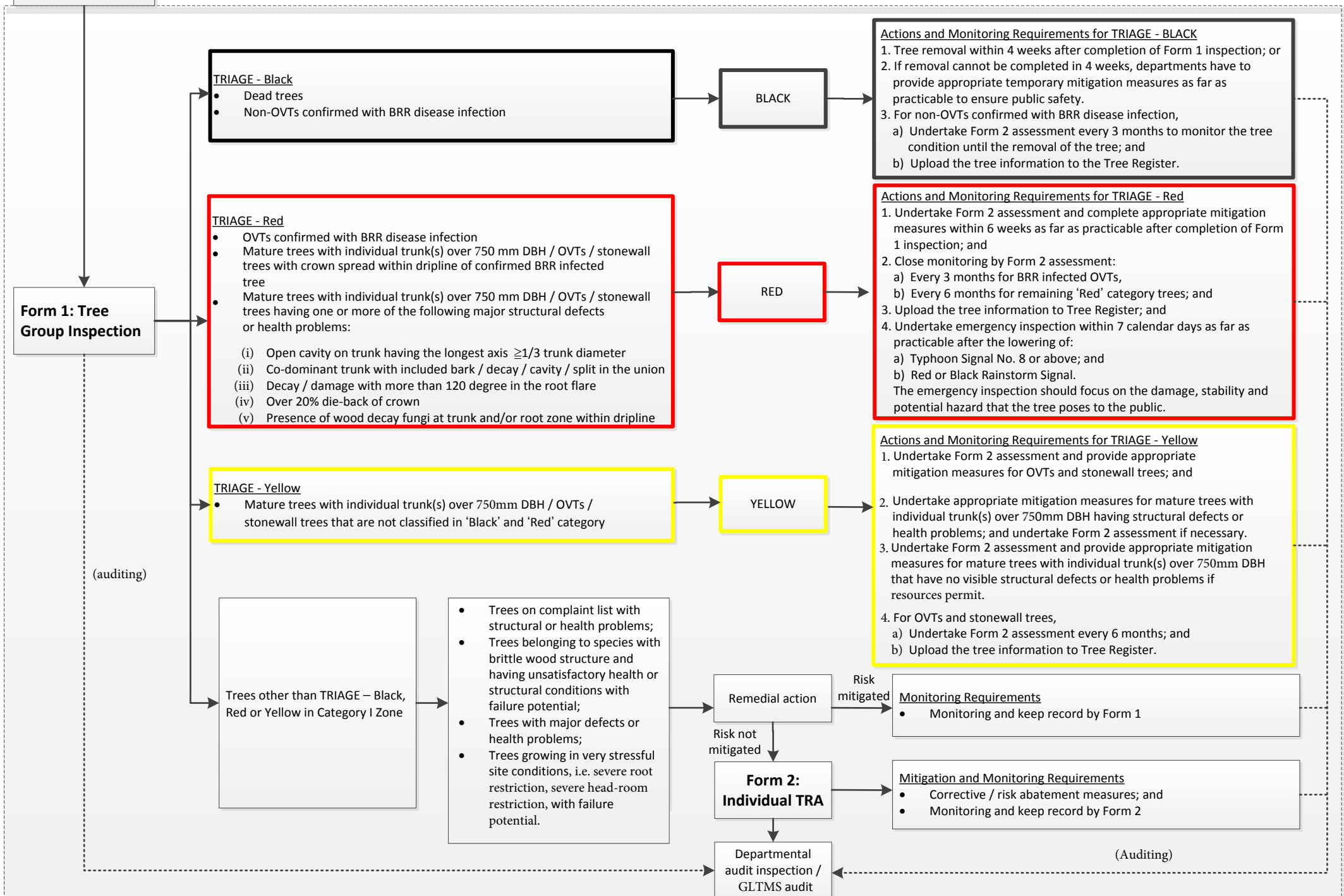
6. Example Six : A construction site

As a general principle, the party maintaining the tree when risk assessment is required should be responsible for undertaking the tree risk assessment. Therefore, the party being either the project proponent or its works agent of a construction site, which should be responsible for the maintenance of the trees located within the Works Site no matter whether there are Temporary Government Land Allocation or not, should also be responsible for undertaking tree risk assessment of these trees. After construction, if a works department is still maintaining a tree during the establishment period or the aftercare period for OVTs, the works department concerned should be responsible for the tree risk assessment. If a tree has been handed over to the maintenance department for long-term maintenance after construction, the maintenance department concerned should then be responsible for the tree risk assessment.



Trees in construction sites may be subject to higher stress than normal due to changes in their environmental conditions (e.g. dust, vibration, soil compaction, changes in underground water table levels, damages to feeder and/or anchor roots, etc.). Therefore, more tree inspections in accordance with the advice from Inspection Officer should be conducted timely upon the commencement of construction/site works and at a time of major changes in site circumstances of the development/project/works site.

Appendix 2 - Overall Workflow of Tree Risk Assessment and Management Arrangement



Appendix 3 - Requirements for Inspection Officers for Form 1 - Tree Group Inspection and Form 2 - Individual Tree Risk Assessment.

"Inspection Officers" for Form 1 tree group inspection and Form 2 individual tree risk assessment shall meet the following minimum requirements on academic, professional and training qualifications as well as work experience:-

Academic Qualifications*	<ul style="list-style-type: none"> Certificate / diploma or above qualifications in arboriculture, tree management, tree risk assessment, landscape management or equivalent, up to or above the standard of Level 3 in the Hong Kong Qualifications Framework.
AND	
Professional Qualifications*	<ul style="list-style-type: none"> Certified Arborist, Certified Arborist Utility Specialist, Certified Arborist Municipal Specialist or Board Certified Master Arborist, or above qualifications of the International Society of Arboriculture; or Technician Member, Professional Member, Fellow or above qualifications of the Arboricultural Association of the United Kingdom; or European Tree Worker, European Tree Technician or above qualifications of the European Arboricultural Council; or General Member of the National Arborists Association of Australia (issued on or before 31 Dec 2010); or Registered Qualified Arborist, Registered Practicing Arborist, Registered Consulting Arborist, Registered Consulting & Practicing Arborist, or above qualifications of the Arboriculture Australia; or Accredited Arborist or above qualifications of the Hong Kong Institute of Landscape Architects; or equivalent to the above.
AND	
Training Qualifications*	<ul style="list-style-type: none"> Completed and passed Comprehensive Tree Risk Assessment and Management Training Course with assessment or Refresher Course with assessment organised by the Tree Management Office (TMO); or Completed and passed equivalent departmental training recognised by the TMO; or Completed and passed training programmes in tree risk assessment recognised by the TMO, such as Tree Risk Assessment Qualification by the International Society of Arboriculture, Professional Tree Inspection by Lantra Awards.
AND	
Work Experience	<ul style="list-style-type: none"> Has at least 3 years of work experience in tree care and is familiar with tree risk assessment / management.

** Field Assistant Grade and Field Officer Grade staff in the Agriculture, Fisheries and Conservation Department and Amenities Assistant Grade and Leisure Services Manager Grade staff in the Leisure and Cultural Services Department who have completed the recognised vocational training offered by the respective departments are considered meeting the minimum requirements on the academic, professional and training qualifications for Inspection Officers.*

Appendix 4 - Form 1: Tree Group Inspection Form

Tree Risk Assessment Form 1 : Tree Group Inspection
樹木風險評估表格1：樹群檢查表

General Information 基本資料

Form 1 Ref. No.: 表格1編號:	2019
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Dept. / Agency 部門 / 機構:		Inspection Officer 巡查人員:		Post 職位:	
Project / Contract No.工程 /合約編號:				File Ref. 檔案編號:	
Date of Inspection 巡查日期:	(dd/mm/yyyy)	Last Inspection Date: 上次巡查日期:	(dd/mm/yyyy)	Inspection Frequency: 巡查週期:	

Location Information 位置資料

Masterzone Ref.主區編號:		Subzone Ref. 副區編號:			
Location (English) : 地點 (英文):		Location (Chinese) : 地點 (中文):		District: 地區:	
Tree Risk Management Zone 樹木風險管理地區類別:					
Location Types 地點類別: (multiple selections allowed 可選多於一項)	<input type="checkbox"/> Roadside landscaped area 路旁綠化地區				
	<input type="checkbox"/> Public park/recreation venue 公園/康樂場地				
	<input type="checkbox"/> Planter box 花盆				
	<input type="checkbox"/> Tree pit 樹穴				
	<input type="checkbox"/> Housing estate 屋邨				
	<input type="checkbox"/> Central divider 中央分隔帶				
	<input type="checkbox"/> Others (please specify) 其他 (請說明):				
Nearby Utility Post No. 就近公用設施編號:					

Tree Information 樹木基本資料

The size of a tree group should be defined by location types, such as public parks, SIMAR slopes, tree pits, etc. with due consideration given to the limitations of visual tree assessment.
在決定樹群的大小時，應參照地點類別，如公園、系統性鑑辨維修責任的斜坡、樹穴等，並需考慮目測法的局限。

(A) Triage Trees and Trees Require Remedial Actions or Form 2 Assessment
分流樹木及需要進行緩減措施 / 表格 2 評估的樹木

TMCP Tree ID 樹木 編號	Dept. Tree ID 部門 樹木 編號	Tree Species 樹種	Estimated Tree Height (m) 大約樹高 (米)	Estimated Crown Spread (m) 大約樹冠 闊度 (米)	Tree Status 樹木類別	Overall Tree Conditions 整體樹木 狀況	Triage Colour 分流顏色	Remedial Action / Form 2 Assessment 緩減措施 / 表格2評估	Anticipated Completion Date 預計完成日期 (dd/mm/yyyy)	Reference Coordinates of Tree 樹木參考座標	
										X	Y
Add Rows 增加列			Delete Rows 刪除列								

(B) Other Trees (Non-Triage Trees - trees do not need further actions)
其他樹木 (非分流樹木 - 無需進一步行動的樹木)

Tree Species 樹種	App. Quantity of Trees 大約樹木數	Range of Tree Height 樹高範圍		Overall Tree Conditions 整體樹木狀況
		From (m) 由 (米)	To (m) 至 (米)	
Add Rows 增加列		Delete Rows 刪除列		

Overall Remarks 整體評語

Sub-total No. of Trees in Table (A): (A) 表樹木數量小結:	0	Sub-total No. of Trees in Table (B): (B) 表樹木數量小結:	0	Total No. of Trees (A + B) : 樹木總數 (A + B):	0
Summary of TRIAGE Trees 分流樹木總結					
Black 黑	0	Red 紅	0	Yellow 黃	0
No Triage colour 無			0		

Attached Information 附夾資料

Attachment Type	Attachment Name	Description
Add Rows 增加列	Delete Rows 刪除列	

Declaration 聲明

I, the Inspection Officer for the above TRA Form 1, confirm that I have inspected the tree group(s) at the specified date with due diligence, and the information given in the Form(s) is truly reflecting what I observed on site.

本人作為以上樹群檢查表格1的巡查人員，確認本人已在本表格所列日期，謹慎小心完成有關樹群的檢查，而本表格上填入的資料均真確無訛地反映本人在現場觀察所得。

My academic, professional, training records and work experience met the requirements of Inspection Officer specified in the TRAM Guidelines.

本人的學術、專業、培訓紀錄及相關工作經驗均符合「樹木風險評估及管理安排」指引中對巡查人員的要求。

Name of Inspection Officer: _____
巡查人員姓名 (請以英文正楷書寫)

(If more than one Inspection Officer involved in the same Tree Group Inspection, each Inspection Officer should submit individual Form 1 containing the trees inspected by him/her. 如多於一位巡查人員負責同一樹群檢查，個別巡查人員應將其檢查的樹木以另一表格1填報。)

Date of Form Completion: _____
完成表格日期 (dd/mm/yyyy)

(If Form 1 is submitted in paper form 若以文本形式遞交表格1)

Signature of Inspection Officer: _____
巡查人員簽署：

Appendix 5 - Explanatory Notes for Form 1: Tree Group Inspection

This Form is provided with the *Guidelines for Tree Risk Assessment and Management Arrangement (TRAM Guidelines)* (9th Edition) for tree group inspection. It intends to act as a template for Inspection Officers to collect and record tree information and facilitate a meaningful tree group inspection as well as identification of individual tree(s) under the Triage System for individual tree risk assessment (Form 2) or immediate remedial actions. For individual tree risk assessment, the Inspection Officers should refer to the guidelines for individual tree risk assessment (Form 2) in the TRAM Guidelines.

Box(es) and Space(s) are provided on the Form 1 for Inspection Officers to record/write descriptions and estimated measurements, or check box(es) for selected options, in field investigation. The Inspection Officers are also required to provide their observations, suggestions and/or recommendations on tree remedial actions in space under “Overall Remarks” when necessary. *It is not necessary to check every box or to fill in every space provided on this Form.* Only information relevant to the tree group inspection should be collected.

Section 1 – General Information

This Section intends to identify the responsible department, the Inspection Officer and a brief history of the tree group inspection.

Inspection Date Date of inspection	(optional) (optional)	Inspection Date Date of inspection	(optional) (optional)	Inspection Officer Inspection Officer	
Project / Contract No. 工程 / 合約編號				File No. 檔案編號	
Project / Agency 工程 / 機構				Inspection Officer 巡查人員	
General Information 基本資料				Form 1 Ref. No. 表格編號	

Form 1 Ref. No.: Reference number of the Form 1 in the format:

[XXX]-[20XX]-[000]-[9999]-[0], where

XXX	20XX	000	9999	0
First 3 character of department's abbreviated name, i.e. AFC for AFCD, LAN for LandsD, etc.	Year of TRAM Exercise, i.e. 2019/2020 TRAM Exercise, use 2019.	Project code or contract code assigned by departments. If no subdivided project or contract, please input "000"	Serial number of Form 1 report in one TRAM Exercise. For each project or contract in the dept., new set of serial number from 0001 to 9999 can be used.	Part number of the Form 1 report. If only one Inspection Officer conducted the Form 1 inspection in a tree group, use "0"; If more than one Inspection Officers and more Form 1 reports for one tree group, use "1" for the 1 st report and "2" for the second report, and so on.

Department/Agency: name of the responsible Department or Agency of the tree group inspection.

Inspection Officer: name of the Inspection Officer (in English CAPITAL letter as printed on HKID Card) who met the qualification requirements on academic / professional / training, and work experience as specified in 'Requirements for Inspection Officers' in Appendix 3 of the TRAM Guidelines. The qualifications of Inspection Officer should be vetted by relevant tree maintenance department and a name list of vetted Inspection Officers should be provided to GLTMS/TMCP for verification.

Post: post title of the Inspection Officer in the Department/Agency.

Project/Contract No.: project/contract reference number of the tree inspection works, where applicable.

File Ref.: File reference no. in the Department/Agency that keeps the tree inspection reports, where applicable.

Date of Inspection: date of inspection in the format of dd/mm/yyyy. If the inspection lasts for more than one day, the commencement date of the inspection.

Last Inspection Date: date of last inspection of the subject tree group in the format of dd/mm/yyyy. If the inspection lasts for more than one day, the commencement date of the inspection. If it is the first time inspection of the subject tree group, please marked as 'first time inspection'.

Inspection Frequency: The frequency of inspection, i.e. once per 6 months marked as '6 months', once per year marked as '12 months', etc. Mark '**ad hoc**' if the inspection is on need basis.

Section 2 – Location Information

This Section provides background information of the location of tree group to be inspected.

Location Information 位置資料

Masterzone Ref. 主區編號		Subzone Ref. 副區編號	
English Location: 英文地點	Chinese Location: 中文地點		District: 地區
Tree Risk Management Zone 樹木風險管理地點類別			
Location Types 地點類別 (multiple selections allowed 可選多於一項)	<input type="checkbox"/> Roadside Landscaped Area 路旁綠化地區 <input type="checkbox"/> Public Park/Recreation Venue 公園/康樂場地 <input type="checkbox"/> Planter box 花籃 <input type="checkbox"/> Tree Pit 樹穴 <input type="checkbox"/> Housing Estate 屋邨 <input type="checkbox"/> Central Divider 中央分隔帶 <input type="checkbox"/> Others (please specify) 其他 (請說明): <input type="text"/>		
	<input type="checkbox"/> Government Compound 政府建築物 <input type="checkbox"/> Unleased/Unallocated Government Land 未批租/未撥用的政府土地 <input type="checkbox"/> Recreational Site/Facility inside Country Park 郊野公園內康樂用地或設施 <input type="checkbox"/> SIMAR Slopes 系統性蟲害維修責任的斜坡 SIMAR Slope Ref: <input type="text"/>		
Nearest lamp pole number 最近的路燈編號			

Masterzone Ref. & Subzone Ref.: provides Masterzone reference and Subzone reference, if applicable, of the tree group inspected. Fill in “NIL” in space provided after “Subzone” if no Subzone. Details of the zoning for Masterzone and Subzone are specified in the Tree Management Information System (TMIS) manual in the Cyber Manual for Greening (<http://devb.host.ccgo.hksarg>). The zoning is assigned by the responsible tree maintenance department.

Chinese Location and English Location: Chinese and English name of the tree group location, please refer the location/street name to the latest version of “*Hong Kong Guide*” published by the Lands Department.

District: use district categorisation in 18 District Councils.

Tree Risk Management Zone: the category of Tree Risk Management Zone (TRMZ) as specified in the TRAM Guidelines. Select ‘Category I’, ‘Category II’ or ‘Category III’ if the tree group falls into relevant Category zone. The Inspection Officer shall confine the tree group to be inspected in one TRMZ category, split the tree group if more than one TRMZ categories are involved.

Location Type: check the box for “Location Type” as appropriate; mark SIMAR Slope reference number in the space provided if SIMAR Slope is identified. Provides location information in space in ‘Others’ if the subject tree group does not fall into the boxes provided. Check more than one box if the subject tree group falls into more than one location type.

Nearby Utility Post No.: The nearby public utility post number, such as Lamp pole number. Mark the utility on the location map with clear denoted reference number.

Section 3 – Tree Information

Inspection Officer shall define the size of a tree group by location types, such as public park, SIMAR slopes, landscaped area, etc. with due consideration given to the limitations of visual tree assessment. For easy recognition of tree conditions in a tree group under inspection, it is suggested that the tree group inspected shall not contain more than 50 trees.

Table (A): Triage Trees and Trees Require Remedial Actions or Form 2 Assessment:

Tree Information 樹木基本資料											
The size of a tree group should be defined by location types, such as public park, SIMAR slopes, tree pits, etc. with due consideration given to the limitations of visual tree assessment. It is recommended that no more than 50 trees per Form 1 Group. 在決定樹群的大小時，應參照地點類別，如公園、系統性維修處修養的斜坡、樹穴等，並需考慮目測法的局限，建議每個樹群應不多於50棵樹。											
(A) Triage Trees and Trees required Remedial Actions or Form 2 Assessment 分派樹木及需要進行綠化措施 / 表格 2 評估的樹木											
TMCP Tree ID 樹木編號	Dead Tree ID 樹木編號	Tree Species 樹種	Estimated Tree Height (m) 大約樹高 (米)	Estimated Crown Spread (m) 大約樹冠闊度 (米)	Tree Status 樹木類別	Overall Tree Condition 整體樹木狀況	Triage Colour 分派顏色	Remedial Action / Form 2 Assessment 綠化措施 / 表格 2 評估	Anticipated Completion Date 預計完成日期 (dd/mm/yyyy)	Reference Coordinates of Tree 樹木參考座標	
										東 X	北 Y

Add Rows 新增列 Delete Rows 刪除列

Triage Trees and Trees Require Remedial Actions or Form 2 Assessment:

Table (A) is designed for trees in the tree group inspected including:

1. Triage Trees, the five specific tree categories require Triage Classification including:
 - Dead trees
 - Trees confirmed with Brown Root Rot (BRR) disease infection
 - Old and Valuable Trees (OVTs)
 - Stonewall trees
 - Mature trees with an individual trunk(s) over 750mm DBH
2. Trees in the tree group that require remedial actions; and
3. Trees in the tree group that require Form 2 assessment.

Individual tree information is required in Table (A).

TMCP ID: A system generated ID to give a unique reference number to trees in the TMCP tree database. Inspection Officers are not required to fill in this TMCP ID.

Departmental Tree ID: the departmental identification number of each tree inspected. If the tree inspected has more than one tree ID, use the latest departmental tree ID.

Tree Species: use the scientific names and the preferred Chinese and English common name (i.e. the first name if more than one name) listed in the *Check List of Hong Kong Plants* (latest version) published by the AFCD.

Estimated Tree Height: estimate the total height of the tree inspected above ground level to top of tree crown, measured in meter (m). For better estimation, making use of clinometer / range pole.

Estimated Crown Spread: estimate the diameter of crown spread in meter (m). For asymmetric tree crown, the longest axis should be measured.

Tree Status: status of the tree inspected, namely

- **Old and Valuable Tree**
- **Stonewall Tree**
- **Mature Tree** (with an individual trunk(s) over 750mm DBH)
- **“Nil”** if no specific tree status

Overall Conditions: estimate the overall health and structural conditions of the tree inspected and select an appropriate condition in the following categories:

- **Normal:** tree health and structural conditions are similar to other healthy tree of the same species in the area, for example, leaf size and color, crown density, tree height and crown spread. The growth of the tree inspected is in general vigor in comparison to a healthy tree of the same species in the area and no significant defects were identified.
- **Fair:** Health and structural conditions of the tree inspected is considered not as vigor as a normal tree by comparison to a healthy tree of the same species in the area; plus, either one of the follows:
 - (1) one or two health or structural defects were observed in crown, branches, trunk or root zone (i.e. old wounds, cavity with entire defensive wood, etc.),
 - (2) minor dieback twigs (less than 5%), or

(3) signs of pest and/or disease etc., but no actual pest or disease could be identified.

and such health and structural problem(s) can be mitigated by pruning or other tree treatments, tree failure is not foreseeable.

➤ **Poor:** Health and structural conditions of the tree inspected are significantly poor than a normal tree of the same species in the area, plus either one of the follows:

(1) more than 3 significant health or structural defects were observed on crown, branch, trunk or root zone, including large old wounds with signs of decay, large cavities with signs of decay, dead branches, hanging branches, etc.,

(2) dieback twigs over 25% of total canopy,

(3) minor pest and/or disease infestations are observed, but not detrimental to overall health and structural conditions of the tree inspected, or

(4) Tree growth was considered adversely restricted by health or structural defects or other environmental conditions.

Mitigation measures is considered cannot completely remedies the health and structural defects. Tree failure is expected in the long-run.

➤ **Very poor:** The tree is considered under a very poor condition if either one of the following is observed:

(1) many (5 or more) significant health and structural defects are observed, including old wounds with significant decay, large cavity with significant decay, etc., where mitigation measures cannot stop deterioration of tree health from curing the defects,

(2) fallen leaves or die back twigs over 50% of total canopy (except deciduous trees and semi-deciduous trees),

(3) broken of main branches,

(4) large portion of tear off tree barks in main trunk (over 50%), or

(5) severe pest and/or disease infestation that existing pest and disease control measures are considered ineffective to the infestation, tree health conditions is continuously deteriorating.

These health and structural defects are detrimental to the tree inspected and tree removal is highly recommended.

➤ **Dead:** Dead tree.

Triage Colour: assess the tree under the Triage system in accordance to the TRAM Guidelines. Fill in the Triage colour category in the space provided. Please note that Triage classification may change in each assessment due to change of tree conditions and mitigations works done. If the tree is “Other Trees” in Zone I or trees in other zoning, no classification under the Triage system is necessary, please mark ‘NIL’.

Remedial Actions/Form 2 Inspection: Fill in the remedial actions or individual tree risk assessment (Form 2) is considered necessary, leave the space empty if no further action is required. If this column is checked, please provide anticipated completion date, tree reference coordinates and reference number of tree photos showing the defects identified or spot of mitigation required in the following columns. Examples of remedial actions include:

- Remove the whole tree;
- Crown reduction to reduce crown load;
- Crown cleaning to remove dead/diseased branches/twigs;
- Crown lifting to remove lower branches;
- Structural pruning to modify tree form;
- Form 2 individual tree risk assessment; or
- Others: please specify in space provided or use separate information sheet.

Anticipated Completion Date: the date that Inspection Officer anticipates the remedial actions or Form 2 assessment should be completed, in the format of dd/mm/yyyy. Consult tree works agent when necessary.

Tree Reference Coordinates: provides reference coordinates of the tree inspected at the tree center by x-axis and y-axis reading (HK1980 Grid Coordinates) up to 3 decimal places for reference in TMCP. The reference coordinates could be a reference location of the tree inspected measured by common GPS instruments or plotted on location plan with estimated reference co-ordinates.

Add Rows: check this box if more row is required.

Delete Rows: check this box to delete row.

Table (B): Other Trees (Non-Triage Trees - trees do not need further actions)

(B) Other Trees (Non-Triage trees - trees do not need further actions) 其他樹木 (非分類樹木 - 無需進一步行動的樹木)				
Tree Species 樹種	App. Quantity of Trees 大約樹木數量	Range of Tree Height 樹高範圍		Overall Tree Conditions 整體樹木狀況
		From (m) 由 (米)	To (m) 至 (米)	

Add Rows 添加列 Delete Rows 刪除列

Other Trees (Non-Triage Trees - trees do not need further actions): Table (B) is designed for “Other Trees” in the tree group that do not fall into Table (A): the five categories of Triage trees, trees do not need further actions or Form 2 assessment. **Only tree group information is required in Table (B).**

App. Quantity of Trees: Approximated quantity of trees, as far as practicable, in the same species in the tree group falls into the definition of “Other trees”. For tree species cannot be identified during the tree group inspection, mark “unidentified” on the **Tree Species** column. Same tree species may appear in Table (A) and Table (B), please avoid duplicated counting.

Range of Height: the range of tree height in the same species of tree in Table (B). Please mark the tree height from the lowest to the highest in meter.

Overall Remarks 整體評語					
Sub-total No. of Trees in Table (A): (A) 分類樹木數量小結:	0	Sub-total No. of Trees in Table (B): (B) 其他樹木數量小結:	0	Total No. of Trees (A + B): 樹木總數 (A + B):	0
Summary of TRIAGE Trees 分類樹木總結					
Black 黑	0	Red 紅	0	Yellow 黃	0
No Triage colour 無			0		
Attached Information 附夾資料					
Attachment Type	Attachment Name	Description			
Add Rows 增加列 Delete Rows 刪除列					

Overall Remarks: Inspection Officer may provide his/her observations, suggestions and recommendations on tree remedial actions in the space provided under the “Overall Remarks” when necessary. The overall remarks shall also include limitations and restrictions in the site, the need of further assessment on particular tree (individual tree risk assessment by Form 2) in the tree group assessed, as well as other information did not cover in the above-mentioned items.

Sub-total No. of Trees in Table (A): Total number of trees in Table (A).

Sub-total No. of Trees in Table (B): Total number of trees in Table (B).

Total No. of Trees: the total number of trees in the tree group inspected, i.e. total number of trees in Table (A) + Total number of trees in Table (B).

Summary of Triage Trees: give total number of trees of each Triage colour in the tree group inspected.

Attached Information: use this field to attach photos, map, and other information.

Add Tree Group Photos: provide tree group photos taken on the inspection day. The picture of tree group inspected shall be taken from at least two different directions; individual tree photos should be provided for tree health or structural conditions classified as “Very Poor” and recommended for tree removal; and tree(s) recommended for remedial actions or further assessment (individual tree risk assessment (Form 2)). All photos provided shall follow the photographs requirements set out in Appendix 6 – Photo-taking Guidelines for Tree Risk Assessment specified in TRAM Guidelines. All photographs should be stamped with date and time of photo taken.

Add Map: add tree location map of the tree group assessed. The map shall show the location of the tree group, the relevant land status, major check points (i.e. Lamp pole number, SIMAR slope number, etc.). **All trees listed on Table (A) in the Form 1 report should be marked on the tree location map with the Departmental Tree ID.**

Add Other Information: add other information related to the inspection, i.e. future development project, land sales information, etc., that the Inspection Officer considers necessary further describe the site conditions and the tree group inspected.

Section 4 – Declaration

Declaration 聲明	
I, the Inspection Officer for the above TRA Form 1, confirm that I have inspected the tree group(s) at the specified date with due diligence, and the information given in the Form(s) is truly reflecting what I observed on site. 本人作為以上樹群檢查表格1的巡查人員，確認本人已在本表格所列日期，謹慎小心完成有關樹群的檢查，而本表格上填入的資料均真確無訛地反映本人在現場觀察所得。	
My academic, professional, training records and work experience met the requirements of Inspection Officer specified in the TRAM Guidelines. 本人的學術、專業、培訓紀錄及相關工作經驗均符合「樹木風險評估及管理安排」指引中對巡查人員的要求。	
Name of Inspection Officer: 巡查人員姓名	_____ (請以英文正楷書寫)
# (If more than one Inspection Officer involved in the same Tree Group Inspection, each Inspection Officer should submit individual Form 1 containing the trees inspected by him/her. 如多於一位巡查人員負責同一樹群檢查，個別巡查人員應將其檢查的樹木以另一表格1填報。)	
Date of Form Completion: 完成表格日期	_____ (dd/mm/yyyy)
(If Form 1 is submitted in paper form 若以文本形式遞交表格1)	
Signature of Inspection Officer: 巡查人員簽署：	_____

Declaration: accountability statement to assure the Inspection Officer conducted this tree group inspection and completing the Form by his own. If more than one Inspection Officers involved in a tree group inspection, individual Inspection Officer should submit separate Form 1 containing the trees inspected by him/her in that tree group inspection.

Name of Inspection Officer: English name in Block CAPITAL letter of the Inspection Officer conducted the tree group inspection. This name should match with the name list of Inspection Officer provided by Departments to GLTMS/TMCP.

Date of Form Completion: Date of the Inspection Officer completed the Form 1 in the format of dd/mm/yyyy.

Signature of Inspection Officer: If the Inspection Officer cannot submit the Form 1 through electronic system, i.e. e-Form or TMCP, he/she might need to submit the Form on paper form, including but not be limited to hard copy, PDF, JPEG, or other digital copies. The Inspection Officer is hereby required to sign-off the paper form submitted at the space provided.

Reference:

Agriculture, Fisheries and Conservation Department, 2006, Nature Conservation Practice Note No. 2 - Measurement of Diameter at Breast Height (DBH), Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region, China.

ANIS A300 (Part 9) – 2017 Tree Risk Assessment a. Tree Failure, Tree Care Industry Association, Inc., USA.

British Standards Institution, 2010, “BSI Standards Publication: Tree Work – Recommendations”, British Standards Institution, UK.

Costello, L.P., Perry, E.J., Matheny, N.P., Henry, J.M., Geisel, P.M., 2003, 2003, Abiotic Disorders of Landscape Plants – A Diagnostic Guide, University of California, Agriculture and Natural Resources, USA.

Dunster, J. A., Smiley, E. T., Matheny, N. and Lilly, 2017, Tree Risk Assessment Manual, International Society of Arboriculture, USA.

Harris, R.W., Clark, J.R., & Matheny, N.P., 2004, “Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines”, 4th Edition, Prentice Hall, Upper Saddle River, NJ, USA.

Lonsdale, D., 2017, Principles of Tree Hazard Assessment and Management (7th ed.), Arboriculture Association, UK.

Shigo, A.L. 2008, A New Tree Biology and Dictionary (11th ed.), Shigo and Trees, Associated., USA.

Smiley, E. T., Matheny, N. and Lilly, S., 2011, “Best Management Practice: Tree Risk Assessment”, International Society of Arboriculture, USA.

--- END ---

Appendix 6 - Photo-taking Guidelines for Tree Risk Assessment

1. General

- All photographs should be illustrated with the dates and time of the photographs were taken.
- The photo records should be coloured photos clearly showing the tree conditions.
- Proper annotations and descriptions should be provided to illustrate the conditions of trees.
- For record of remedial mitigation measures, photos showing the conditions before and after the operations should be taken from similar view angles as far as possible to facilitate comparison.
- All photographs should be taken in a specific manner so as to provide a fair comparison and clear illustration to reflect the change of the tree groups or the individual trees when compared to the relevant and retrievable records.

2. Photo Records in Form 1

2.1 Overall condition

- Overall view showing the tree group and its adjacent site conditions.
- Close views of the tree group from different angles clearly showing its condition.
- Views showing site conditions or changes that may have an impact on tree health or structural conditions.
- Views showing the potential impact on targets / sensitivity in case of tree failure.
- Views clearly showing tree health and structural conditions, in particular for stand-alone trees and street trees, should be captured as far as practicable unless tree parts are obscured due to site constraints (such as those on steep slopes or trees in clusters).
- A photo can cover more than one tree if it can capture the general conditions of individual trees.
- Close-up views clearly showing trees having notable arboricultural defects, disorders or anomalies (if any).

3. Photo Records in Form 2

3.1 Overall Condition

- Overall views showing the tree from different angles, its adjacent site condition and extent of leaning (if applicable).
- Views showing site conditions or changes that may have an impact on tree health or structural conditions.
- Views showing the potential impact on targets / sensitivity in case of tree failure.

3.2 Crown Condition

- Views showing general condition of the crown to illustrate the vigor, foliage density and colour.
- Close up views for the following features (if any):
 - abnormal leaf size with reference scale;
 - dieback twigs;
 - epicormics;
 - signs of pest or disease; and
 - other notable arboricultural defects or disorders.

3.3 Trunk and Branch Conditions

- Views showing general conditions of the trunk(s) and major branches illustrating the structural integrity.
- Close up views for the following features (if any):
 - co-dominant trunks or branches;
 - poor taper;
 - included bark or weak attachment;
 - decay or cavity;
 - cracks or splits;
 - wounds and wound wood development;
 - dead branches or hangers;
 - crook or abrupt bends;
 - crossed branches;
 - heavy lateral limb;
 - lion tailing;
 - bleeding or sap flow;
 - fungal fruiting bodies;

- parasitic plants;
- signs of pests and diseases; and
- other notable arboricultural defects or disorders.

3.4 Lower Trunk / Root Condition

- Stressful site conditions, including construction activities within the tree protection zones and any other activities or restrictions that may damage the root system and the overall structural stability of the trees. Views showing general conditions of the root flare and disturbance that may damage the root zone.
- Close up views of the following features (if any):
 - root rot;
 - exposed roots;
 - girdling roots;
 - cracks or splits;
 - mechanical damage;
 - root-plate movement;
 - soil cracks or other cracks;
 - fruiting bodies;
 - signs of pests and disease; and
 - other notable arboricultural defects or disorders

Appendix 7 - Form 2 Tree Risk Assessment Form

Tree Risk Assessment Form 2 Individual Tree Risk Assessment
樹木風險評估表格2 個別樹木風險評估

General Information 基本資料

Dept. / Agency 部門 / 機構		Inspection Officer 巡查人員		Post 職位	
Project/Contract No. 工程/合約編號			File Ref. 檔案編號		
Date and Time of Inspection		Last Inspection Date		Inspection Time Spent 是次巡查所用時間	
巡查日期及時間		上次巡查日期		Inspection Frequency 巡查週期	
(dd/mm/yyyy)		(hr) (min)		(dd/mm/yyyy)	

Tree Information 樹木資料

TMCP Tree ID TMCP樹木編號	Dept. Tree ID 部門樹木編號	Tree Species 樹種					Triage Colour 分流顏色
Tree Height(m) 樹高(米)	Crown Spread(m) 樹冠闊度(米)	No. of Trunk(s) 樹幹數目					
DBH of tree trunk(s)(mm) 每枝主幹胸徑(毫米)	1	2	3	4	5	Aggregated DBH (mm) 總胸徑(毫米)	
Tree Status 樹木類別	<input type="checkbox"/> Old and Valuable Tree 古樹名木 (OVT No. 古樹名木登記冊編號:)					<input type="checkbox"/> Other tree 其他樹木	
	<input type="checkbox"/> Stonewall Tree 石牆樹 (Tree Register No. 樹木登記編號:)					<input type="checkbox"/> Brown Root Rot Disease Infected 受褐根病感染	
	<input type="checkbox"/> Mature Tree (DEB > 750mm) 成齡樹 (胸徑 > 750毫米)						

Location Information 位置資料

Masterzone Ref. 主區編號	Location (Chinese) 地點 (中文)			
Subzone Ref. 副區編號	Location (English) 地點 (英文)			
Coordinates 座標	X:	Y:		
Tree Risk Management Zone Category 樹木風險管理地區類別	District 地區			
Location Type 地點類別	<input type="checkbox"/> Roadside landscaped area 路旁綠化地區		<input type="checkbox"/> Tree pit 樹穴	<input type="checkbox"/> Central divider 中央分隔帶
	<input type="checkbox"/> Public park or recreation venue 公園或康樂場地		<input type="checkbox"/> Housing estate 屋邨	<input type="checkbox"/> Government compound 政府建築物
	<input type="checkbox"/> Planter box 花盆		<input type="checkbox"/> SIMAR slopes 系統性鑑辨維修責任的斜坡	
	<input type="checkbox"/> Recreational site/facility inside country parks 郊野公園內康樂用地或設施			
	<input type="checkbox"/> Unleased or unallocated government land 未批租或未撥用政府土地		<input type="checkbox"/> Others 其他	
Nearby Utility Post No. 就近公用設施編號:				

Target Assessment 目標物評估 (Please identify no more than five (5) potential Target(s) in the sequence of severity of consequence 請依後果的嚴重性次序選取不多於五個目標物)

Target No. 目標物編號	Target Description 目標物的描述	Target Zone 目標物範圍	Occupancy rate 佔用率	Remove target? 可否移除目標物?	Restrict usage? 可否限制使用?
1					
2					
3					
4					
5					

Site Conditions 場地狀況

Topography 地勢	<input type="checkbox"/> Flat 平地 <input type="checkbox"/> Natural terrain 天然山坡 <input type="checkbox"/> Man-made slope 人造斜坡 <input type="checkbox"/> Retaining wall 擋土牆 <input type="checkbox"/> Stonewall 石牆 <input type="checkbox"/> Others 其他: _____			
Site changes 場地改變	<input type="checkbox"/> None 沒有 <input type="checkbox"/> Grade change 地表改變 <input type="checkbox"/> Site clearing 場地平整 <input type="checkbox"/> Others 其他 _____			
Soil conditions 土壤情況	<input type="checkbox"/> Normal 正常 <input type="checkbox"/> Compacted 土壤被擠壓 <input type="checkbox"/> Water logging 積水 <input type="checkbox"/> Others 其他			
Soil crack or crack behind lean 土壤裂縫或裂縫於傾斜部位背後	<input type="radio"/> None 沒有 <input type="radio"/> Yes 有 _____			
Restriction within dripline 滴水線範圍內有限制	<input type="radio"/> None 沒有 <input type="radio"/> <25% <input type="radio"/> 25-50% <input type="radio"/> 51-75% <input type="radio"/> >75%			
Tree failure record 樹木倒塌記錄	<input type="radio"/> None 沒有 <input type="radio"/> Yes 有			
Brown Root Rot disease record 褐根病記錄	<input type="radio"/> None 沒有 <input type="radio"/> Yes 有			
Other observations 其他觀察				

General Conditions 總體概況

Tree vigor 茁壯程度	<input type="radio"/> Low 低 <input type="radio"/> Normal 正常 <input type="radio"/> High 高			
Lean 傾斜	<input type="radio"/> No 沒有 <input type="radio"/> Yes 有 Angle from vertical 傾斜角度 <input type="text"/> <input type="checkbox"/> Natural due to phototropism 趨光性 <input type="checkbox"/> Self-corrected 已自然修正 <input type="checkbox"/> Recent Tilt 新近傾斜 <input type="checkbox"/> Response growth 反應生長 _____			
Wind exposure 受風情況	<input type="radio"/> Protected 受遮擋 <input type="radio"/> Partial 部份 <input type="radio"/> Exposed 暴露 <input type="radio"/> Wind funneling 風洞 <input type="radio"/> Others 其他 _____			
Wildlife or nesting site 野生動物或鳥巢	<input type="radio"/> None 沒有 <input type="radio"/> Yes 有			
Cable or brace 鋼索或支架	<input type="radio"/> None 沒有 <input type="radio"/> Yes 有			
Pruning history 修剪歷史	<input type="checkbox"/> Cleaned 清理樹冠 <input type="checkbox"/> Thinned 疏減樹冠 <input type="checkbox"/> Raised 提升樹冠 <input type="checkbox"/> Reduced 縮減樹冠 <input type="checkbox"/> Structural pruning 結構修剪 <input type="checkbox"/> Topped 削頂 <input type="checkbox"/> Lion-tailed 獅尾 <input type="checkbox"/> Others 其他 _____			
Other observations 其他觀察				

Crown Conditions 樹冠狀況

Crown density 樹冠密度	<input type="radio"/> Normal 正常 <input type="radio"/> Sparse 稀疏 (<input type="radio"/> <25% <input type="radio"/> 25% - <50% <input type="radio"/> 50% <75%)			<input type="checkbox"/> Imbalanced crown 樹冠不對稱
Live crown ratio 活冠比	<input type="radio"/> <40% <input type="radio"/> 41 - 70% <input type="radio"/> >70%	Crown load 樹冠負荷	<input type="radio"/> Normal 正常 <input type="radio"/> Heavy 過重 <input type="radio"/> Declined 衰弱	
Foliage 葉片	<input type="radio"/> Fallen leaf (Seasonal) 落葉(季節性) <input type="radio"/> Defoliation (Withered) 落葉(枯萎) <input type="radio"/> Normal 正常 <input type="radio"/> Chlorotic 萎黃 % <input type="radio"/> Necrotic 壞死 %			
Leaf size 葉片大小	<input type="radio"/> Normal 正常 <input type="radio"/> Smaller than normal 比正常細小			
Dieback twigs 枯枝	<input type="radio"/> <5% <input type="radio"/> 5 - <25% <input type="radio"/> 25 - 50% <input type="radio"/> >50%	<input type="checkbox"/> Epicormics 水橫枝 <input type="checkbox"/> Hanger 懸吊斷枝 <input type="checkbox"/> Pest and disease 病蟲害		
Other observations 其他觀察				

Branch Conditions 樹枝狀況

<input type="checkbox"/> Co-dominant branches 等勢枝		<input type="checkbox"/> Included bark 內夾樹皮	<input type="checkbox"/> Cross branches 疊枝	<input type="checkbox"/> Crooks or abrupt bends 不常規彎曲	<input type="checkbox"/> Sap flow 滲液
<input type="checkbox"/> Cracks or splits 裂縫或裂開		<input type="checkbox"/> Decay or cavity 腐爛或樹洞	<input type="checkbox"/> Heavy lateral limb 重側枝	<input type="checkbox"/> Deadwood 枯木	
<input type="checkbox"/> Canker 潰瘍	<input type="checkbox"/> Galls 腫瘤	<input type="checkbox"/> Burls 節瘤	<input type="checkbox"/> Wounds or mechanical injury 傷痕或機械破損		
<input type="checkbox"/> Pest and disease 病蟲害：			<input type="checkbox"/> Parasitic or epiphytic plants 寄生或附生植物：		
<input type="checkbox"/> Fungal fruiting bodies 真菌子實體：			<input type="checkbox"/> Response growth 反應生長：		
Other observations 其他觀察					

<input type="checkbox"/> Cavity 樹洞		#1 L 長 <input type="text"/> (mm) W 闊 <input type="text"/> (mm) D 深 <input type="text"/> (mm)	Direction 方向 _____	Height above ground 離地面高度 _____
		#2 L 長 <input type="text"/> (mm) W 闊 <input type="text"/> (mm) D 深 <input type="text"/> (mm)	Direction 方向 _____	Height above ground 離地面高度 _____
		#3 L 長 <input type="text"/> (mm) W 闊 <input type="text"/> (mm) D 深 <input type="text"/> (mm)	Direction 方向 _____	Height above ground 離地面高度 _____
		#4 L 長 <input type="text"/> (mm) W 闊 <input type="text"/> (mm) D 深 <input type="text"/> (mm)	Direction 方向 _____	Height above ground 離地面高度 _____
<input type="checkbox"/> Co-dominant stems 等勢幹		<input type="checkbox"/> Included bark 內夾樹皮		<input type="checkbox"/> Crooks or abrupt bends 不常規彎曲
<input type="checkbox"/> Cracks or splits 裂縫或裂開		<input type="checkbox"/> Abnormal bark crack 不正常樹皮裂紋		
<input type="checkbox"/> Canker 潰瘍		<input type="checkbox"/> Galls 腫瘤	<input type="checkbox"/> Poor taper 不良漸尖生長	
		<input type="checkbox"/> Burls 節瘤	<input type="checkbox"/> Wounds or mechanical injury 傷痕或機械破損	
<input type="checkbox"/> Pest and disease 病蟲害：			<input type="checkbox"/> Parasitic or epiphytic plants 寄生或附生植物：	
<input type="checkbox"/> Fungal fruiting bodies 真菌子實體：			<input type="checkbox"/> Response growth 反應生長：	
Other observations 其他觀察				

<input type="checkbox"/> Root collar not visible 根脊不現	<input type="checkbox"/> Cracks or splits 裂縫或裂開	<input type="checkbox"/> Exposed root根部外露	<input type="checkbox"/> Root rot 根部腐壞
<input type="checkbox"/> Cut or pruned roots 根部經切割或截根	<input type="checkbox"/> Trunk girdling 纏繞樹幹	<input type="checkbox"/> Girdling root 纏繞根	<input type="checkbox"/> Dead surface roots 表根枯萎
<input type="checkbox"/> Root-plate movement 根基移位	<input type="checkbox"/> Wounds or mechanical injury 傷痕或機械破損		
<input type="checkbox"/> Pest and disease 病蟲害：		<input type="checkbox"/> Parasitic or epiphytic plants 寄生或附生植物：	
<input type="checkbox"/> Fungal fruiting bodies 真菌子實體：		<input type="checkbox"/> Response growth 反應生長：	
Other observations 其他觀察			

[illegible]

Matrix 1: Likelihood matrix 可能性組合

Likelihood of Failure 倒塌的可能性	Likelihood of Impacting Target 影響目標的可能性			
	Very Low 非常低	Low 低	Medium 中等	High 高
Highly Probable 非常可能	Unlikely 很低機會	Somewhat likely 有機會	Likely 較大機會	Very likely 很大機會
Probable 相當可能	Unlikely 很低機會	Unlikely 很低機會	Somewhat likely 有機會	Likely 較大機會
Possible 有可能	Unlikely 很低機會	Unlikely 很低機會	Unlikely 很低機會	Somewhat likely 有機會
Improbable 不太可能	Unlikely 很低機會	Unlikely 很低機會	Unlikely 很低機會	Unlikely 很低機會

Matrix 2: Risk rating matrix 風險評級組合

Likelihood of Failure and Impact 倒塌並影響的可能性	Consequences of Failure 倒塌後果			
	Negligible 微小	Minor 較小	Significant 重大	Severe 嚴重
Very likely 很大機會	Low 低	Moderate 中	High 高	Extreme 極高
Likely 較大機會	Low 低	Moderate 中	High 高	High 高
Somewhat likely 有機會	Low 低	Low 低	Moderate 中	Moderate 中
Unlikely 很低機會	Low 低	Low 低	Low 低	Low 低

Mitigation Measures 緩減措施

Target No. 目標物編號	Tree Part 樹木部分	Mitigation Measures 緩減措施	Anticipated Completion Date 預算完成日期 (dd/mm/yyyy)	Residual Risk 剩餘風險

Notes, explanations, descriptions and supplementary Information 說明、註解、描述及補充資料

Overall tree risk rating 綜合樹木風險	Overall residual risk 綜合剩餘風險	Advanced assessment 進一步檢查	<div><div><input type="radio"/> No 否</div><div><input type="radio"/> Yes 是 Please describe 請描述</div></div> <div></div>
		Inspection limitations 檢查限制	<div><div><input type="checkbox"/> None 沒有</div><div><input type="checkbox"/> Inaccessible 難以接近</div><div><input type="checkbox"/> Climbers 攀緣植物</div><div><input type="checkbox"/> Root collar buried 根脊被埋</div><div><input type="checkbox"/> Others _____</div></div>
		Next inspection date 下次檢查日期	

Attached Information 附夾資料

Attachment Type	Attachment Name	Description

Add Rows 增加列

Delete Rows 刪除列

Declaration 聲明

I, the Inspection Officer for the above TRA Form 2, confirm that I have inspected the tree(s) at the specified date and time with due diligence, and the information given in the Form(s) is truly reflecting what I observed on site.

本人作為以上個別樹木風險評估(表格2) 的巡查人員，確認本人已在本表格所列日期及時間，謹慎小心完成有關樹木的風險評估，而本表格上填入的資料均真確無訛地反映本人在現場觀察所得。

My academic, professional, training records and work experience met the requirements of Inspection Officer (Form 2) in the TRAM Guidelines.

本人的學術、專業、培訓紀錄及相關工作經驗均符合「樹木風險評估及管理安排」指引中對巡查人員的要求。

Name of Inspection Officer:

巡查人員姓名 (請以英文正楷書寫。)

Date of Form 2 Completed:

完成表格2日期 (dd/mm/yyyy)

(Please sign on the space provided if the Form 2 is submitted in paper form 若以文本形式遞交表格2, 請於以下空位簽名)

Signature of Inspection Officer: _____

巡查人員簽署：

----- End of Form 2 -----
表格2完

Appendix 8 – Explanatory Notes for Form 2 – Individual Tree Risk Assessment

This Form 2 is provided with the *Guidelines for Tree Risk Assessment and Management Arrangement (TRAM Guidelines)* (9th Edition) and aligns with the latest tree risk assessment methods promulgated by the International Society of Arboriculture (ISA) and other overseas professional organisations. It intends to serve as a template for Inspection Officer to collect and record tree information and facilitate a meaningful individual tree basis risk assessment. For an advanced tree risk assessment, the Inspection Officer or arborist concerned shall submit a separate written report including but not be limited to the detailed assessment results on the risks of the tree or the tree part assessed. For further information on the requirements of the written report, the Inspection Officer may refer to the latest version of the ANSI A300 standards and the ISA Best Management Practice – Tree Risk Assessment or other relevant publications, such as BS 3998:2010 – *Tree Work - Recommendations* by the British Standards Institute.

Box(es) and space(s) are provided in the Form for collation of the right information. Please check the box(es) that reflect the observations. More than one box may be checked. Please also write comments and notes that are not covered elsewhere in the Form or for points that need additional explanation in the space(s) provided or under the “Other Observations” section. *It is not necessary to check every box or to fill in every space provided in this Form.* Only information relevant to the tree risk assessment should be collected.

Section 1 – General Information

This Section records the background information of the responsible department and the Inspection Officer who undertakes the individual tree risk assessment.

General Information 基本資料 I

Dept. / Agency 部門 / 機構		Inspection Officer 巡查人員		Post 職位	
Project/Contract No. 工程/合約編號		File Ref. 檔案編號			
Date and Time of Inspection		Last Inspection Date		Inspection Time Spent 是次巡查所用時間	
巡查日期及時間	{dd/mm/yyyy} {hr} {min}	上次巡查日期		{dd/mm/yyyy}	Inspection Frequency 巡查週期

Department/Agency: name of the department or agency responsible for the tree risk assessment.

Inspection Officer: name of the Inspection Officer (in English CAPITAL letters) who meets the academic, professional and training qualifications as well as work experience as specified in the ‘Requirements for Inspection Officers’ in the TRAM Guidelines. The qualifications of the Inspection Officer should be vetted by the responsible tree maintenance department and

each department shall provide a list of accepted Inspection Officers to Greening, Landscape and Tree Management Section (GLTMS) of the Development Bureau for verification.

Post: post title of the Inspection Officer in the responsible department or agency.

Project/Contract No.: Project/Contract reference number in which the tree risk assessment is undertaken (if applicable).

File Ref.: file reference no. in the responsible department or agency that keeps the tree risk assessment reports, if applicable.

Date and Time of Inspection: date and time of the inspection in the format of dd/mm/yyyy and hh/mm. If the inspection lasts for more than one day, the inspection date refers to the commencement date of the inspection.

Last Inspection Date: date of last inspection of the subject tree in the format of dd/mm/yyyy. If the inspection lasted for more than one day, the last inspection date refers to the commencement date of the last inspection. If it is the first-time inspection of the subject tree, please indicate 'first-time inspection' in this field.

Inspection Time Spent: the time spent in the field inspection of the subject tree to the nearest 0.5 hour. Travelling time should not be included.

Inspection Frequency: the frequency of inspection, for example, if the subject tree is inspected every six months, please mark '6 months' or if the subject tree is inspected every year, please mark '12 months', etc. Please mark '*ad hoc*' if the tree risk assessment is undertaken on a need basis.

Section 2 – Tree Information

This Section provides background information of the tree assessed.

Tree Information 樹木資料									
TMCP Tree ID TMCP樹木編號	Dept. Tree ID 部門樹木編號		Tree Species 樹種					Trnage Category 分流類別	
Tree Height(m) 樹高(米)			Crown Spread(m) 樹冠闊度(米)					No. of trunk(s) 樹幹數目	
DBH of tree trunk(s)(mm) 每枝主幹胸徑(毫米)			1	2	3	4	5	Aggregated DBH (mm) 胸徑(毫米)	
Tree on Tree Register 登記冊內樹木			<input type="checkbox"/> Old and Valuable Tree 古樹名木 (OVT Register No. 古樹名木登記冊編號:)					<input type="checkbox"/> Other tree 其他樹木	
			<input type="checkbox"/> Stonewall Tree 石牆樹 (Tree Register No. 樹木登記冊編號:)					<input type="checkbox"/> Brown Root Rot Infected 受褐根病感染	
			<input type="checkbox"/> Mature Tree (DEB > 750mm) 成熟樹 (胸徑 > 750毫米)						

TMCP ID: A system generated ID to give a unique reference number to the trees in the new tree database, Tree Management Common Platform (TMCP).

Departmental Tree ID: the departmental identification number of each tree inspected.

Tree Species: the botanical name of the subject tree. Please also include the preferred Chinese common name (generally the first name listed is the preferred common name) listed in the *Check List of Hong Kong Plants* (latest version) published by the Agriculture, Fisheries and Conservation Department (AFCD).

Triage Colour: the classification under the Triage System in the TRAM Guidelines. Please indicate the triage colour in the space provided. Please note that the triage classification may change in each assessment due to a change of the tree conditions and mitigation works completed. If the tree is one of the “Other Trees” in Zone I or one of the trees in other zones, no classification under the Triage System is necessary. Please mark ‘NIL’ in this situation.

Tree Height: estimated height of the subject tree from the existing ground level to the top of the tree crown measured to the nearest meter. For better estimation, please use a clinometer and/or range pole.

Crown Spread: diameter of the spread of the tree crown measured to the nearest meter. For asymmetric tree crown, the crown spread along the longest axis should be measured.

DBH of Tree Trunk: diameter of the tree trunk at breast height (1.3 meter above ground) measured to the nearest millimeter in accordance with AFCD’s Nature Conservation Practice Note No. 2 ‘*Measurement of Diameter at Breast Height (DBH)*’ (2006 or its latest version). For measurement of trees with multiple trunks, please input the individual trunk diameters in the boxes provided and then calculate the aggregate DBH in accordance with AFCD’s Practice Note No. 2. The tree risk assessment report should include photographic records showing the multiple trunks and each trunk numbered in sequence (i.e. #1, #2...etc.). If there are more than five individual trunks, please provide the individual trunk diameters in a separate sheet but the aggregate DBH should cover all individual trunks.

Tree Status: tree status in the Tree Register. Please indicate whether the subject tree is an Old and Valuable Tree (OVT), a Stonewall Tree (SWT), a Mature Tree (with an individual trunk(s) over 750mm DBH, a Brown Root Rot Disease (BRRD) infested tree or other trees. If applicable, please fill in the OVT Register No. and Tree Register No. for OVT and SWT respectively in the space provided. Please check more than one box if applicable.

Section 3 – Location Information

This Section provides location information of the subject tree.

Location Information 位置資料

Masterzone Ref. 主區編號			Chinese Location 中文地點	
Subzone Ref. 副區編號			English Location 英文地點	
Coordinates 座標	X:	Y:		
Tree Risk Management Zone Category 樹木風險管理地區類別			District 地區	
Location Type 地點類別	<input type="checkbox"/> Roadside landscaped area 路旁綠化地區 <input type="checkbox"/> Tree pit 樹穴 <input type="checkbox"/> Central divider 中央分隔帶 <input type="checkbox"/> Public park or recreation venue 公園或康樂場地 <input type="checkbox"/> Housing estate 屋邨 <input type="checkbox"/> Government compound 政府建築物 <input type="checkbox"/> Planter box 花盆 <input type="checkbox"/> SIMAR slopes 系統性蟲辨維修責任的斜坡 <input type="checkbox"/> Others 其他 <input type="checkbox"/> Recreational Site/Facility inside Country Park 郊野公園內康樂用地或設施 <input type="checkbox"/> Unleased or unallocated government land 未批租或未撥用政府土地			
Nearby Utility Post No. 就近公用設施編號:				

Masterzone Ref. & Subzone Ref.: Masterzone reference number and Subzone reference number in the Tree Management Information System (TMIS) for the subject tree. Please fill in “NIL” if there is no Subzone. Details for the zoning of Masterzones and Subzones are specified in the TMIS Manual which can be viewed and/or downloaded from the Cyber Manual for Greening (<http://devb.host.ccgo.hksarg>). The zones are determined by the responsible department.

Chinese Location and English Location: Chinese and English names of the tree location. Please refer to the location/street names in the latest version of the ‘Hong Kong Guide’ published by the Lands Department.

District: use district categorisation in 18 District Councils.

Tree Risk Management Zone Category: category of Tree Risk Management Zone as specified in the TRAM Guidelines. Please check the ‘Category I’ box if the tree falls into Category I zone; check the ‘Category II’ box if the tree falls into Category II zone; and check the ‘Category III’ box if the tree falls into Category III zone.

Co-ordinates: x- and y-coordinates of the tree at the centre of the tree trunk according to the HK1980 Grid Coordinates up to 3 decimal places. The coordinates can be measured by common GPS devices.

Location Type: venue or particular area that the subject tree is located. Please mark SIMAR Slope Number in the space provided if the subject tree is within a SIMAR slope. Please check “Others” if none of the venues or areas is applicable. Please check more than one box if more than one location type apply.

Nearby Utility Reference No.: nearby public utility reference number, such as lamp post number. Please mark the utility on the location map with its reference number clearly indicated.

Section 4 – Target Assessment

This Section provides information on the potential targets affected by the subject tree. One individual tree or a tree part may affect one or more potential targets. The assessment of each potential target facilitates a better assessment of the likely consequence of a potential tree failure.

Target Assessment 目標物評估 (Please identify no more than five (5) potential Target(s) in the sequence of severity of consequence 請按後果的嚴重性次序標取不多於五個目標物)

Target No. 目標物編號	Target Description 目標物的描述	Target Zone 目標物範圍	Occupancy rate 佔用率	Remove target? 可否移除目標?	Restrict usage? 可否限制使用?
1					
2					
3					
4					
5					

Target Number: the potential targets in priority according to the severity of consequence. People is always the most critical target with the most severe consequence.

Target Description: brief description of the target identified, for example, 'pedestrians', 'people in leisure/amenity area', 'occupied resident house', 'cars in carpark', 'school', 'play area', 'low-traffic street', or 'high-traffic street', etc.

Target Zone: location at which the target would likely be present the most. Please check the box if the target would likely be:

- Within dripline – the target is within the dripline of the subject tree; or
- Within 1.5 x Ht. – the target is outside the dripline but within the striking distance, i.e. 1.5 times of the total tree height.

Occupancy Rate: estimated amount of time in a day or a week that the target would likely be present within the Target Zone.

- Rare – the target is not commonly within the Target Zone.
- Occasional – the target is present within the Target Zone infrequently or irregularly.
- Frequent – the target uses or performs activity within the Target Zone for a large portion of a day or a week.

- Constant – the target is present within the Target Zone at nearly all times, 24 hours a day, 7 days a week.

Remove Target: remove the target as far as possible to eliminate the risk. Please check the box 'Yes' if the target can be removed; otherwise, please check the box 'No'.

Restrict Usage: restrict usage to eliminate the risk if possible. Please check the box "Yes" if access to the Target Zone can be restricted; otherwise, please check the box 'No'.

Section 5 – Site Conditions

This Section provides background information of the site that may affect the likelihood of tree failure.

Site Conditions 場地狀況

Topography 地勢	<input type="checkbox"/> Flat 平地 <input type="checkbox"/> Natural terrain 天然山坡 <input type="checkbox"/> Man-made slope 人造斜坡 <input type="checkbox"/> Retaining wall 擋土牆 <input type="checkbox"/> Stonewall 石牆 <input type="checkbox"/> Others 其他: _____				
Site changes 場地改變	<input type="checkbox"/> None 沒有 <input type="checkbox"/> Grade change 地表改變 <input type="checkbox"/> Site clearing 場地平整 <input type="checkbox"/> Others 其他: _____				
Soil conditions 土壤情況	<input type="checkbox"/> Normal 正常 <input type="checkbox"/> Compacted 土壤被擠壓 <input type="checkbox"/> Water logging 積水 <input type="checkbox"/> Others 其他: _____				
Soil crack or crack behind lean 土壤裂縫或裂縫於傾斜部位背後	<input type="radio"/> None 沒有 <input type="radio"/> Yes 有 _____				
Restriction within dripline 滴水線範圍內有限制	<input type="radio"/> None 沒有 <input type="radio"/> <25% <input type="radio"/> 25-50% <input type="radio"/> 51-75% <input type="radio"/> >75%				
Tree failure record 樹木倒塌記錄	<input type="radio"/> None 沒有 <input type="radio"/> Yes 有				
Brown Root Rot disease record 褐根病記錄	<input type="radio"/> None 沒有 <input type="radio"/> Yes 有				
Other observations 其他觀察	_____				

Topography: topography of the site where the tree is growing. Please check the box "flat", "natural terrain", "man-made slope", "retaining wall" or "stonewall" where applicable and specify other site observations in the box "Other observations". Please check more than one box to fully describe the site setting.

Site Changes: site factors affecting the root system of the subject tree or site factors that may affect the wind exposure of the subject tree:

- None – no soil changes observed.
- Grade change – soil was added or removed from the site.
- Site clearing – adjacent tree(s) had been removed or significantly reduced, which may cause the assessed tree to become exposed to wind.
- Root cut – the root system of the assessed tree had been cut or was otherwise significantly damaged. More information on root cuts should be included in the 'Root Conditions' section.
- Others – other necessary information or further description of site change.

Soil conditions: factors that may affect the health and/or vitality of the tree assessed, or the ability of the assessed tree's root system to provide sufficient mechanical support.

- Normal – normal soil conditions.
- Insufficient volume – soil volume limited by rocks, water table, building foundations, retaining wall, size of a container/planter/tree pit or other factors.
- Compacted – soil is severely compacted, limiting the depth, spread, and distribution of the root system.
- Water logging – water-logged due to poor drainage, high water table, excessive irrigation or assessed tree grows in a low area.
- Others – conditions that has not been covered in the boxes provided or further descriptions of soil conditions is considered necessary.

Soil crack or crack behind lean: Please check the box if soil crack or crack behind lean was observed. Give more descriptions in the space provided when necessary.

Restriction within the Dripline: Please check the box and estimate the percentage restriction observed within the dripline of the tree assessed. Restriction refers to building, pavement, roads, hard landscape features, retaining wall, planter boundary or drainage channels etc.

Tree Failure Record: Please check the box if whole-tree failure(s) at the site of the tree assessed was reported in the past 12 months of the site inspection, saving for the trees that have failed during typhoons. Please give more information including the estimated time of the tree failures and the reasons for the failures, etc., if possible.

Brown Root Rot Disease Record: Please check the box if Brown Root Rot Disease infested tree(s) was previously identified within the dripline of the assessed tree. Please give detailed descriptions including the estimated time of disease identification, treatment applied, etc., if possible.

Other Observations: Please provide other observations that have not been covered in this Section.

Section 6 - General conditions

This Section provides general conditions of the tree assessed.

General Conditions 總體概況

Tree vigor 茁壯程度	<input type="radio"/> Low 低 <input type="radio"/> Normal 正常 <input type="radio"/> High 高	
Lean 傾斜	<input type="radio"/> No 沒有 <input type="radio"/> Yes 有 Angle from vertical 傾斜角度 <input type="text"/> <input type="checkbox"/> Natural due to phototropism 趨光性 <input type="checkbox"/> Self-corrected 已自然修正 <input type="checkbox"/> Recent Tilt 新近傾斜 <input type="checkbox"/> Response growth 反應生長 _____	
Wind exposure 受風情況	<input type="radio"/> Protected 受遮擋 <input type="radio"/> Partial 部份 <input type="radio"/> Exposed 暴露 <input type="radio"/> Wind funneling 風洞 <input type="radio"/> Others 其他 _____	
Wildlife or nesting site 野生動物或鳥巢	<input type="radio"/> None 沒有 <input type="radio"/> Yes 有	
Cable or brace 鋼索或支架	<input type="radio"/> None 沒有 <input type="radio"/> Yes 有	
Pruning history 修剪歷史	<input type="checkbox"/> Cleaned 清理樹冠 <input type="checkbox"/> Thinned 疏減樹冠 <input type="checkbox"/> Raised 提升樹冠 <input type="checkbox"/> Reduced 縮減樹冠 <input type="checkbox"/> Structural pruning 結構修剪 <input type="checkbox"/> Topped 削頂 <input type="checkbox"/> Lion-tailed 獅尾 <input type="checkbox"/> Others 其他 _____	
Other observations 其他觀察		

Tree Vigor: the overall health conditions of the tree assessed. Please indicate:

- Low – tree growth is restricted or stunted, smaller than normal size, leaf density below average and/or abnormal epicormics.
- Normal – tree growth is in similar size of a typical/average sample tree for its species in the area, leaf conditions and branching show no significant defects. Root growth is in normal conditions, no restriction.
- High – tree is growing well and appears to be of a size above a typical/average sample tree for its species in the area. It is also free from any restriction, diseases or pests infestation.

Lean: angle of the trunk measured from vertical line. Please indicate:

- None – no leaning observed.
- Yes – measure the angle from vertical line and record in the space provided.
- Recent Tilt – tilting was first identified in the current inspection or the leaning angle has increased by more than five (5) degrees in the past 12 months.
- Natural due to phototropism – leaning due to phototropism.
- Self-corrected – leaning of tree corrected due to self-correction mechanism.
- Response growth – reaction wood or additional wood has grown to increase the structural strength of the trunk/branches; describes location and extent of response growth observed.

Wind Exposure: factors that affect wind load of the tree assessed. Please indicate:

- Protected – other trees, structures or buildings in the area significantly reduce wind velocity or the exposure of the assessed tree to wind.
- Partial – other trees, structures or buildings near the tree moderately reduce the

impact of wind on the assessed tree.

- Exposed – the assessed tree is fully exposed to wind, e.g. standalone tree, tree at the edge of a forest/plantation, etc.
- Wind funneling – wind may be ‘funneled’ or ‘tunneled’ (by buildings, canyons, large stands of trees) towards the assessed tree so that wind velocity experienced by the assessed tree is increased dramatically.

Wildlife or Nesting Site: wild birds or other wildlife including bats, squirrels, etc. may use the branches or cavity of the assessed tree for nesting. Please indicate:

- None – no nesting activity is observed.
- Yes – nesting activity is observed. Please record on-site observations in the space provided (if available), including the name of the wildlife (if known), quantity, and location of nests, etc.

Cable or Brace: presence of cable or brace installed to provide additional support to the assessed tree. Please indicate:

- None – no cable or brace system was installed.
- Yes – cable or brace system was installed. Please provide more information if possible, including the type of cables or braces, conditions of cables or braces, effectiveness, maintenance requirement, etc., in the space provided.

Pruning History: maintenance/pruning record of the assessed tree in the past 12 months or the latest tree assessment. Please indicate:

- Cleaned – crown cleaning was conducted.
- Thinned – crown thinning was conducted.
- Raised – crown raising was conducted.
- Reduced – crown reduction was conducted.
- Structural pruning – structural pruning was conducted, normally for young trees.
- Topped – inappropriate pruning technique used to reduce tree size; characterized by inter-nodal cuts.
- Lion-tailed – inappropriate pruning practice used to remove an excessive number of inner and/or lower lateral branches.
- Others: give detailed descriptions on the items checked, last pruning date and other pruning records not covered above.

Other observations: Please provide other observations that have not been covered in this Section.

Section 7 – Crown Conditions

This Section provides information on the crown conditions of the assessed tree.

Crown Conditions 樹冠狀況

Crown density 樹冠密度	<input type="radio"/> Normal 正常 <input type="radio"/> Sparse 稀疏 (<input type="radio"/> <25% <input type="radio"/> 25% - <50% <input type="radio"/> 50% <75%)			<input type="checkbox"/> Imbalanced crown 樹冠不對稱	
Live crown ratio 活冠比	<input type="radio"/> <40% <input type="radio"/> 41 - 70% <input type="radio"/> >70%	Crown load 樹冠負荷	<input type="radio"/> Normal 正常 <input type="radio"/> Heavy 過重 <input type="radio"/> Declined 衰弱		
Foliage 葉片	<input type="radio"/> Fallen leaf (Seasonal) 落葉(季節性) <input type="radio"/> Defoliation (Withered) 落葉(枯萎) <input type="radio"/> Normal 正常 <input type="radio"/> Chlorotic 萎黃 % <input type="radio"/> Necrotic 壞死 %				
Leaf size 葉片大小	<input type="radio"/> Normal 正常 <input type="radio"/> Smaller than normal 比正常細小				
Dieback twigs 枯枝	<input type="radio"/> <5% <input type="radio"/> 5 - <25% <input type="radio"/> 25 - 50% <input type="radio"/> >50%	<input type="checkbox"/> Epicormics 水橫枝 <input type="checkbox"/> Hanger 懸吊斷枝 <input type="checkbox"/> Pest and disease 病蟲害			
Other observations 其他觀察					

Crown Density: the branches, foliage and other reproductive parts of a tree forming the tree crown that blocked light visibility or penetration through the crown. Crown density can be estimated by using the crown density – foliage transparency card or electronic densitometers.

Please indicate:

- Normal – crown density is similar to a typical/average sample tree for its species in the area.
- Sparse – crown density is lower than a typical/average sample tree for its species in the area that allows a large degree of wind and light penetration. Please estimate the percentage of sparse in <25%, 25% - <50%, or 50% - <75% by comparing to a typical/average sample tree for its species in the area and fill in the space provided. Over 75% is considered “Normal”.

Imbalanced Crown: Please check the box if the canopy is not uniformly formed.

Live Crown Ratio (LCR): the ratio of the height of the live crown to the total height of entire tree [(crown height/tree height) × 100%]. Please check the appropriate box for the estimated range of LCR.

Crown Load: the estimated overall loading at tree crown of the assessed tree. This may vary with the density of foliage and other reproductive parts, canopy architecture, etc.

- Normal – crown load is similar to a typical/average sample tree for its species in the area.
- Heavy – crown load is much higher than a typical/average sample tree for its species in the area.
- Declined – crown load is lower than a typical/average sample tree for its species in the area.

Foliage: an important indicator of tree health based on the comparison with a healthy specimen of the same species in the area. Please indicate:

- Fallen leaf (seasonal) – fallen leaf observed on the tree, check if the tree is a deciduous tree and leaves shed in winter.
- Defoliation (withered) – defoliation observed on the tree, check if the tree is withered and leaves shed before it is dead.
- Normal - foliage color is similar to a typical/average sample tree for its species in the area.
- Chlorotic – leaves become yellowish-green to yellow, estimate the percentage of chlorotic foliage in the canopy and fill in the space provided.
- Necrotic – dead leaves remained in the tree crown, estimate the percentage of necrotic in the tree crown and fill in the space provided.

Leaf Size: size of leaves in the mature part of the assessed tree.

- Normal – leaf size in mature part of the assessed tree is similar to a typical/average sample tree for its species in the area.
- Smaller than normal – leaf size in mature part of the tree is smaller than leaves in a sample species in the area.

Dieback Twigs: progressive death of twigs starting at the tips of shoots or branches. The percentage of dieback twigs can be estimated by comparing the portion of dieback twigs to the entire tree crown. Please indicate:

- <5% – less than 5% of dieback twigs was observed.
- 5% – <25% - dieback appeared on about 5% to less than 25 % of canopy
- 25% – 50% - dieback appeared about 25% to 50% of the canopy
- >50% – dieback extended to over 50% of the canopy.

Epicormics: Please check the box if epicormics, which are shoots sprouting vigorously from damaged bark/wounds on trunk or branch of a tree, are present.

Hanger(s): Please check the box if hanger(s), which is a broken part of trunk or branch that remains or hangs up in the tree crown. This hanger may impose high potential risk to the target(s), especially unprotected target(s), present underneath the canopy of the tree.

Pest and disease: Please check the box if pest(s) or disease(s) was observed on the assessed tree. Please try to identify the pest(s) or disease(s) detected on the assessed tree such as Brown Root Rot Disease and decay caused by *Ganoderma* spp. and termites, for better pest/disease control.

Other Observations: Please provide other observations that have not been covered in this Section.

Section 8 – Branch Conditions

This Section provides information on the branch conditions of the assessed tree.

Branch Conditions 樹枝狀況

<input type="checkbox"/> Co-dominant branches 等勢枝	<input type="checkbox"/> Included bark 內夾樹皮	<input type="checkbox"/> Cross branches 疊枝	<input type="checkbox"/> Crooks or abrupt bends 不常規彎曲	<input type="checkbox"/> Sap flow 滲液
<input type="checkbox"/> Cracks or splits 裂縫或裂開	<input type="checkbox"/> Decay or cavity 腐爛或樹洞	<input type="checkbox"/> Heavy lateral limb 重側枝	<input type="checkbox"/> Deadwood 枯木	
<input type="checkbox"/> Canker 潰瘍	<input type="checkbox"/> Galls 腫瘤	<input type="checkbox"/> Burls 節瘤	<input type="checkbox"/> Wounds or mechanical injury 傷痕或機械破損	
<input type="checkbox"/> Pest and disease 病蟲害：		<input type="checkbox"/> Parasitic or epiphytic plants 寄生或附生植物：		
<input type="checkbox"/> Fungal fruiting bodies 真菌子實體：		<input type="checkbox"/> Response growth 反應生長：		
Other observations 其他觀察				

Please check the appropriate box(es) if the following branch conditions are observed:

Co-dominant branches: branches of nearly equal diameter arising from a common junction, e.g. from apical buds at the tip of the same stem and lacking normal branch union or collar.

Included bark: bark that embedded in a union of two or more branches or between branch and trunk, resulting a weakened structure or source of decay to core wood.

Cross branches: crossing, rubbing or upright branches that may cause damage to tree bark or resulted in weakened structure.

Crooks or abrupt bends: abnormal bending of tree branch. The crooks or bends may result in weak point on branch(es).

Sap flow: oozing of liquid that may result from infections or infestations under the bark. The presence of sap flow may or may not be a structural defect or stability weakness.

Cracks or splits: separation in the wood in either a longitudinal (radial, in the plane of ray cells) or transverse (across the stem) direction.

Decay or cavity: decay and cavity in a branch may be caused by mechanical injury or fungal damage or wildlife nesting, resulting in weakened structure on the branch.

Heavy lateral limb: leaves clustered at tip of a long branch.

Dead wood: dead wood may be resulted from poor pruning or remains of hangers.

Cankers or Galls or Burls: cankers are localised diseased areas (lesions) on the trunk, branch or even roots; often sunken or discolored; galls are abnormal swellings of tissue caused by pests; may or may not be a defect; burls are outgrowth on the branch; not usually considered a defect.

Wound or mechanical injury: wound or mechanical injury observed on branch. Wound is an opening that is created when the bark of a live branch is cut, penetrated, damaged, or removed. Please provide more descriptions if necessary.

Pest and disease: pest and disease that may significantly affect tree health or stability. Please try to identify the pest or disease detected on the assessed tree, such as termites, for better pest/disease control.

Parasitic or epiphytic plants: parasitic or epiphytic plants grow on branches. The presence of parasitic or epiphytic plants may or may not affect health or structure of the tree. Please try to identify the parasitic or epiphytic plants observed and provide details in the space provided.

Fungal fruiting bodies: fungal fruiting bodies or mycelia present at decayed part of the assessed tree. Please try to identify the common wood decay fungi such as Brown Root Rot Disease and decay caused by *Ganoderma* spp. as far as possible. Close-up photographs showing the key features of the fungi should be included to aid subsequent identification.

Response growth: reaction wood or additional wood that has grown to increase the structural strength of the branch. Please indicate the location(s) and extent.

Other observation: Please provide other observations that have not been covered in this Section.

Section 9 – Trunk Conditions

This Section provides information on the trunk conditions of the assessed tree.

Trunk Conditions 主幹狀況

<input type="checkbox"/> Cavity 樹洞 #1 L 長 <input type="text"/> (mm) W 闊 <input type="text"/> (mm) D 深 <input type="text"/> (mm) Direction 方向 _____ Height above ground 離地面高度 _____			
#2 L 長 <input type="text"/> (mm) W 闊 <input type="text"/> (mm) D 深 <input type="text"/> (mm) Direction 方向 _____ Height above ground 離地面高度 _____			
#3 L 長 <input type="text"/> (mm) W 闊 <input type="text"/> (mm) D 深 <input type="text"/> (mm) Direction 方向 _____ Height above ground 離地面高度 _____			
#4 L 長 <input type="text"/> (mm) W 闊 <input type="text"/> (mm) D 深 <input type="text"/> (mm) Direction 方向 _____ Height above ground 離地面高度 _____			
<input type="checkbox"/> Co-dominant stems 等勢幹		<input type="checkbox"/> Included bark 內夾樹皮	
<input type="checkbox"/> Cracks or splits 裂縫或裂開		<input type="checkbox"/> Abnormal bark crack 不正常樹皮裂紋	
<input type="checkbox"/> Canker 潰瘍		<input type="checkbox"/> Galls 腫瘤	
<input type="checkbox"/> Burls 節瘤		<input type="checkbox"/> Wounds or mechanical injury 傷痕或機械破壞	
<input type="checkbox"/> Pest and disease 病蟲害：		<input type="checkbox"/> Parasitic or epiphytic plants 寄生或附生植物：	
<input type="checkbox"/> Fungal fruiting bodies 真菌子實體：		<input type="checkbox"/> Response growth 反應生長：	
Other observations 其他觀察			

Cavity: Please measure and input the dimensions of cavity on tree trunk. The direction of cavity opening and height of cavity (measured at the center of the opening above ground level) should be measured and marked in the space provided.

Please check the appropriate box(es) if the following trunk conditions are observed:

Co-dominant stems: trunks of nearly equal diameter arising from a common junction and lacking a normal union or collar.

Included bark: bark that embedded in a union of two or more trunks, causing a weakened structure at the trunk.

Poor taper: the decrease in diameter over the height of tree trunk. Poor taper may result in higher possibility of failure.

Crooks or abrupt bends: abnormal bending of tree trunk(s), the crooks or bends may result in weak point on the trunk(s).

Cracks or splits: separation in the wood in either a longitudinal (radial, in the plane of ray cells) or transverse (across the stem) direction.

Abnormal bark crack: bark cracks may be a common character on tree trunk. It would be useful to compare with other trees of the same species in the area to identify abnormal bark cracks.

Sap flow: oozing of liquid that may result from infections or infestations under the bark. The presence of sap flow may or may not be a structural defect or stability weakness.

Cankers or Galls or Burls: cankers are localised diseased areas (lesion) on the trunk, branch or even roots; often sunken or discolored; Galls are abnormal swellings of tissue caused by pests; may or may not be a defect; Burls are outgrowth on the trunks; not usually considered a defect.

Wounds or mechanical injury: wound or mechanical injury observed on tree trunk. Please give more descriptions if necessary.

Pest and disease: pest and disease that may significantly affect tree health or stability. Please try to identify the pest or disease detected on the assessed tree, such as termites, for better pest/disease control.

Parasitic or epiphytic plants: parasitic or epiphytic plants grow on tree trunk(s). The presence of parasitic or epiphytic plants may or may not affect health or structure of the tree. Please try to identify the parasitic or epiphytic plants observed on the tree and fill in the space provided.

Fungal fruiting bodies: fungal fruiting bodies or mycelia present at decayed parts of the tree. Please try to identify common wood decay fungi, such as Brown Root Rot Disease and decay caused by *Ganoderma* spp., as far as possible. Close-up photographs showing the key features of the fungi should be included to aid subsequent identification.

Response growth: reaction wood or additional wood that has grown to increase the structural strength of the trunk. Please note location(s) and extent.

Other observation: Please provide other observations that have not been covered in this Section.

Section 10 – Root Conditions

This Section provides information on the root conditions of the tree assessed.

Root Conditions 根部狀況

<input type="checkbox"/> Root collar not visible 根脊不現	<input type="checkbox"/> Cracks or splits 裂縫或裂開	<input type="checkbox"/> Exposed root 根部外露	<input type="checkbox"/> Root rot 根部腐壞
<input type="checkbox"/> Cut or pruned roots 根部經切割或截根	<input type="checkbox"/> Trunk girdling 纏繞樹幹	<input type="checkbox"/> Girdling root 纏繞根	<input type="checkbox"/> Dead surface roots 表根枯萎
<input type="checkbox"/> Root-plate movement 根基移位	<input type="checkbox"/> Wounds or mechanical injury 傷痕或機械破壞		
<input type="checkbox"/> Pest and disease 病蟲害：		<input type="checkbox"/> Parasitic or epiphytic plants 寄生或附生植物：	
<input type="checkbox"/> Fungal fruiting bodies 真菌子實體：		<input type="checkbox"/> Response growth 反應生長：	
Other observations 其他觀察			

Please check the appropriate box(es) if the following root conditions are observed:

Root collar not visible: if possible, please determine and note the depth of root collar below ground.

Cracks or splits: separation in the wood in either a longitudinal (radial, in the plane of ray cells) or transverse (across the stem) direction.

Exposed root: roots exposed, curling or snaking around a tree. Root exposure may be caused by erosion of top-soil, lack of soil space for root growth or over trampling.

Root rot: root rot is a common root disease. Please try to identify the type of root rot and provide close-up photographs of the rotted areas for further identification.

Cut or pruned roots: roots cut or pruned may truncate the transmission path of water and nutrients to the trunk and leaves.

Trunk girdling: roots girdled the tree trunk may cause restriction to trunk or destruction of the trunk, resulting in stability concern.

Girdling root: roots circles the tree base or below surface soil. The root girdling restricted or destructed the development of both trunk and roots, and may cause tree failure in extreme case.

Dead surface roots: dead surface roots may indicate structural instability, check this box if dead surface root is observed.

Root-plate movement: root plate may be affected by strong gust wind or soil erosion; root-plate movement may severely affect the stability of the tree.

Wounds or mechanical injury: wounds or mechanical injury observed on the roots, in particular the exposed roots.

Pest and disease: pest and disease that may significantly affect tree health or stability. Please try to identify the pest or disease detected on the assessed tree, such as termites, for better pest/disease control.

Parasitic or epiphytic plants: parasitic or epiphytic plants grow on roots exposed. The presence of parasitic or epiphytic plants may or may not affect health or structure of the tree. Please try to identify the parasitic or epiphytic plants observed on the tree and provide details in the space provided.

Fungal fruiting bodies: fungal fruiting bodies or mycelia present at decayed parts of the roots. Please try to identify common wood decay fungi, such as Brown Root Rot Disease and decay caused by *Ganoderma* spp., as far as possible. Close-up photographs showing the key features of the fungi should be included to aid subsequent identification.

Response growth: reaction wood or additional wood that has grown to increase the structural strength of the roots or root collar. Please note location(s) and extent.

Other observations: Please provide other observations that have not been covered in this Section.

Section 11 – Risk Categorisation

This Section on risk categorisation follows the tree risk assessment method promulgated by the ISA, and the method is described in the “*Best Management Practice – Tree Risk Assessment*” (2011) published by the ISA.

Risk Categorisation 風險類別 (Please identify no more than three (3) important Target(s) for no more than three (3) Tree Part 請就不多於三個樹木部份編取不多於三個目標物)									
Target No. 目標物編號	Tree Part 樹木部分	Condition(s) of Concern 關注狀況	Part Size (mm) 部位大小 (毫米)	Fall Distance (m) 下墜距離 (米)	Likelihood 可能性			Consequences 後果	Risk rating 風險評級 (Matrix 2: Risk rating matrix 風險評級組合)
					Failure 倒塌	Impact 影響	Failure and Impact 倒塌並影響 (Matrix 1: Likelihood matrix 可能性組合)		

Matrix 1: Likelihood matrix 可能性組合					Matrix 2: Risk rating matrix 風險評級組合				
Likelihood of Failure 倒塌的可能性	Likelihood of Impacting Target 影響目標的可能性				Likelihood of Failure and Impact 倒塌並影響的可能性	Consequences of Failure 倒塌後果			
	Very Low 非常低	Low 低	Medium 中等	High 高		Negligible 微小	Minor 較小	Significant 重大	Severe 嚴重
Highly Probable 非常可能	Unlikely 很低機會	Somewhat likely 有機會	Likely 較大機會	Very likely 很大機會	Very likely 很大機會	Low 低	Moderate =	High 高	Extreme 極高
Probable 相當可能	Unlikely 很低機會	Unlikely 很低機會	Somewhat likely 有機會	Likely 較大機會	Likely 較大機會	Low 低	Moderate =	High 高	High 高
Possible 有可能	Unlikely 很低機會	Unlikely 很低機會	Unlikely 很低機會	Somewhat likely 有機會	Somewhat likely 有機會	Low 低	Low 低	Moderate =	Moderate =
Improbable 不太可能	Unlikely 很低機會	Unlikely 很低機會	Unlikely 很低機會	Unlikely 很低機會	Unlikely 很低機會	Low 低	Low 低	Low 低	Low 低

Target Number: reference number of the targets in priority according to the severity of consequence as given in Section 4 – Target Assessment. **Please list a maximum of three most important targets on each tree part identified.**

Tree Part: the concerned part of the tree. It could be the whole tree, one or more branch(es), main trunk, or root, which might lead to damages of the target(s). A category of tree part may lead to one or more ‘Condition(s) of Concern’.

Condition(s) of Concern: the condition(s) of tree or tree part that affect the likelihood of failure and may lead to damages to target, e.g. ‘large, dead branch over a car parking space.’, ‘root plate movement observed at a tree near a residential house’, ‘trunk decay identified at a tree nearly a children playground’ etc.

Part Size: the size of the tree or tree part concerned. Please estimate the diameter of the tree part concerned; if whole tree is concerned, measure the DBH of the tree trunk.

Fall Distance: the fall distance of the tree part or the whole tree against the target concerned. The longer the fall distance, the larger the extent of damage.

Likelihood of Failure and Impact

The likelihood of failure can be categorised into four levels:

- **Improbable** – failure of the tree or tree part concerned is not likely under normal weather conditions and may not fail under extreme weather conditions including red/black rainstorm, typhoon signal No. 8, or extreme winter monsoon, within a specified timeframe. According to the ISA guidelines, the ‘specified timeframe’ for estimating likelihood of tree failure is between one to five years.
- **Possible** – failure of the tree or tree part concerned could occur under extreme weather conditions within a specified timeframe but would unlikely fail during normal weather conditions.
- **Probable** – failure of the tree or tree part concerned is expected under normal weather conditions within the specified timeframe.
- **Highly probable** – the tree or tree part concerned has started falling or failure is most likely to occur in the near future under normal weather condition. If this situation is encountered, the Inspection Officer is required to take immediate action(s) to protect public safety.

The likelihood of impacting a target can be categorised in four levels:

- **Very low** - the chance of a tree or tree part failure impacting the target concerned is very low, for example, a rarely used site, an occasionally used site that is partially protected by shelter/cover/structure, or a rarely used trail, etc.
- **Low** - it is not likely that a tree or tree part failure will impact the target concerned, for example, an occasionally used site that is fully exposed to the tree concerned, a frequently used site that is partially exposed to the tree concerned, or a constant target that is well protected from the tree concerned.
- **Medium** - a tree or tree part failed may or may not impact the target, with nearly equal likelihood, for example, a frequently used site that is fully exposed to the tree concerned, a constantly used site that is partially protected from the tree concerned.
- **High** - A tree or tree part failure will most likely impact the target, for example, a fixed target is fully exposed to the tree concerned, high-use road or walkway adjacent to the tree concerned.

According to ISA's risk categorisation, 'likelihood of failure and impact' can be selected from a Likelihood Matrix – Likelihood of Failure x Likelihood of Impact, using the Likelihood Matrix table (Matrix 1).

Consequence of Failure

The consequence of failure can be categorised into four levels:

- Negligible – no personal injury, low value property damage, or minor or no disruption to traffic or human activities will be involved.
- Minor – very minor personal injury may or may not require simple first aid treatment, low to moderate property damage, or small disruptions to traffic or human activities will be involved.
- Significant – personal injury may result in hospitalization, moderate to high property damage, or considerable disruption to traffic or human activities will be involved.
- Severe – serious personal injury or death, high value property damage, or major disruption to traffic and/or important human activities will be involved.

According to ISA's risk categorisation, the risk rating of a specific tree part to a specified target can be selected from the Risk Rating Matrix – Likelihood of Failure and Impact x Consequence of Failure, by using the Risk Rating Matrix table (Matrix 2).

Section 12 – Mitigation Measures

This Section requires the Inspection Officer to make recommendations on mitigation measures based on the results of the tree risk assessment. Mitigation measures should be prioritised according to their urgency in terms of protecting public safety. The residual risk of the tree or individual tree part upon completion of the recommended mitigation measures should be estimated at the time of the inspection to evaluate if the recommended mitigation measures are implemented adequately.

Mitigation Measures 緩減措施

Target No. 目標編號	Tree Part 樹木部分	Mitigation Measures 緩減措施	Anticipated Completion Date 預算完成日期 (dd/mm/yyyy)	Residual Risk 剩餘風險

Target No.: reference number of the targets in priority according to the severity of consequence given in Section 4 – Target Assessment.

Tree Part: the target tree or tree part that requires mitigation measures.

Mitigation Measures: the recommended mitigation measures to reduce the tree risk.

Anticipated Completion Date: the expected completion date of the recommended mitigation measures in the format of dd/mm/yyyy.

Residual risk: estimated risk level upon completion of the recommended mitigation measures.

Section 13 – Notes, Explanations, Descriptions and Supplementary Information

Notes, explanations, descriptions and supplementary Information 說明、註解、描述及補充資料			
Overall tree risk rating 綜合樹木風險	Overall residual risk 綜合剩餘風險	Advanced assessment 進一步檢查	<input type="radio"/> No 否 <input type="radio"/> Yes 是 Please describe 請描述 <div style="border: 1px solid black; height: 20px; width: 100%;"></div>
		Inspection limitations 檢查限制	<input type="checkbox"/> None 沒有 <input type="checkbox"/> Inaccessible 難以接近 <input type="checkbox"/> Climbers 攀緣植物 <input type="checkbox"/> Root collar buried 根旁被埋 <input type="checkbox"/> Others _____
		Next inspection date 下次檢查日期	<div style="border: 1px solid black; height: 20px; width: 100%;"></div>
Attached Information 附夾資料			
Attachment Type	Attachment Name	Description	
Add Rows 增加列		Delete Rows 刪除列	

Notes, Explanations, Descriptions and Supplementary Information: Please include any conditions or factors or observations that have not been well described elsewhere in the form, including additional notes of the Inspection Officer that are used as the basis for making decisions on the hazard, impact and risk levels in the risk assessment.

Overall Tree Risk Rating: the highest risk rating determined among the different problematic tree parts identified.

Overall residual risk: the highest residual risk upon completion of the mitigation measures for all the problematic tree parts identified.

Advanced Assessment: The Inspection Officer needs to advise if advanced assessments for the tree concerned is required. Please check the box 'Yes' if required and provide details of the advanced assessments recommended, including but not be limited to:

- Drill resistance;
- Sonic tomography;
- Aerial inspection;
- Root radar inspection; or
- Slope/stonewall stability analysis, etc.

Inspection Limitations: the possible limitations of the tree risk assessment. Additional information may be provided in the space 'Others'.

Attached Information: Please provide photos, map, measurements, drawings, figures, etc. relevant to the assessment.

Add Site Plan: relevant site plan should be uploaded. The site plan should show the location of the tree and targets concerned, the dripline, Target Zone boundary and relevant land status information.

Add Tree Photo: relevant photos including but not be limited to site photos, whole tree photos in different directions, close-up photos showing the defects with illustrations and denotes should be uploaded. All photos provided shall follows the photograph requirements set out in Appendix 6 – Photo-taking Guidelines for Tree Risk Assessment specified in the TRAM Guidelines. All photographs should be stamped with date and time at which the photo is taken.

Add Other Information: other relevant information that would help describe, illustrate and/or explain the tree risk assessment, mitigation measures and others should be included

Section 14 – Declaration

This Section requires the Inspection Officer to make declaration regarding his/her qualifications for completing the tree risk assessment and the authenticity of the tree risk assessment that he has just completed with a view to stepping up accountability of the Inspection Officer to his/her own work.

Declaration 聲明

I, the Inspection Officer for the above TRA Form 2, confirm that I have inspected the tree(s) at the specified date and time with due diligence, and the information given in the Form(s) is truly reflecting what I observed on site.

本人作為以上個別樹木風險評估(表格2)的巡查人員，確認本人已在本表格所列日期及時間，謹慎小心完成有關樹木的風險評估，而本表格上填入的資料均真確無訛地反映本人在現場觀察所得。

My academic, professional, training records and work experience met the requirements of Inspection Officer (Form 2) in the TRAM Guidelines.

本人的學術、專業、培訓紀錄及相關工作經驗均符合「樹木風險評估及管理安排」指引中對巡查人員的要求。

Name of Inspection Officer:

巡查人員姓名

(請以英文正楷填寫。)

Date of Form 2 Completed:

完成表格2日期

(dd/mm/yyyy)

(If Form 2 is submitted in paper form 若以文本形式遞交表格2)

Signature of Inspection Officer:

巡查人員簽署：

Name of Inspection Officer: English name in CAPITAL letter of the Inspection Officer who has completed the tree risk assessment for the subject tree. This name should match the one provided in the list of the accepted Inspection Officers provided by the departments to DEVB.

Date of Form 2 Completion: the date that the Inspection Officer completed the Form 2 for the subject tree in the format of dd/mm/yyyy.

Signature of Inspection Officer: if the Inspection Officer cannot submit the Form 2 through TMCP, he/she may need to submit the Form 2 in other forms, including but not be limited to, hard copy, PDF, JPEG, or other forms of digital copy. The Inspection Officer is therefore required to sign the Form 2 prior to its submission. For submission via TMCP, no signature is required. Verification of authenticity would be performed automatically by the system.

References:

Agriculture, Fisheries and Conservation Department, 2006, Nature Conservation Practice Note No. 2 - Measurement of Diameter at Breast Height (DBH), Agriculture, Fisheries and Conservation Department, Government of Hong Kong Special Administrative Region,

China.

ANIS A300 (Part 9) – 2017 Tree Risk Assessment a. Tree Failure, Tree Care Industry Association, Inc., USA.

British Standards Institution, 2010, “BSI Standards Publication: Tree Work – Recommendations”, British Standards Institution, UK.

Costello, L.P., Perry, E.J., Matheny, N.P., Henry, J.M., Geisel, P.M., 2003, Abiotic Disorders of Landscape Plants – A Diagnostic Guide, University of California, Agriculture and Natural Resources, USA.

Dunster, J. A., Smiley, E. T., Matheny, N. and Lilly, 2017, Tree Risk Assessment Manual, International Society of Arboriculture, USA.

Harris, R.W., Clark, J.R., & Matheny, N.P., 2004, “Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines”, 4th Edition, Prentice Hall, Upper Saddle River, NJ, USA.

Lonsdale, D., 2017, Principles of Tree Hazard Assessment and Management (7th ed.), Arboriculture Association, UK.

Shigo, A.L. 2008, A New Tree Biology and Dictionary (11th ed.), Shigo and Trees, Associated., USA.

Smiley, E. T., Matheny, N. and Lilly, S., 2017, “Best Management Practice: Tree Risk Assessment” (Second Edition), International Society of Arboriculture, USA.

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