



Permanent Aviation Fuel Facility (EP-262/2007/B)

Sixth Landscape & Visual Bi-Monthly Audit Report – Mar 2011

28 March 2011

Environmental Resources Management

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Permanent Aviation Fuel Facility for Hong Kong International Airport

Environmental Certification Sheet EP-262/2007/B

Reference Document/Plan

Document/ Plan -to be Certified/ Verified:	Sixth Bi-Monthly LVA Report - Mar 2011
Date of Report:	28 March 2011
Date prepared by ET:	28 March 2011
Date received by IEC:	28 March 2011

Reference EP Condition

EM&A Manual Requirement: Section 10.5

Content: *Landscape and Visual - Construction and Post-construction Phase Audit*

10.5 A specialist Landscape Sub-Contractor should be employed by the Contractor for the implementation of landscape construction works and subsequent maintenance operations during the 24 month establishment period. It is proposed that as the majority of the planting works in the area not to be development initially, the planting should be conducted within the first half of the construction contract. Thus, the establishment works will be undertaken through the latter half of the construction contract. The intention is to provide at least 24 months establishment period for the majority of the planting works.


All measures undertaken by both the Contractor and the specialist Landscape Sub-Contractor during the construction phase and first year of the operational phase shall be audited by a Registered Landscape Architect, as a member of the ET, on a regular basis to ensure compliance with the intended aims of the measures. Site inspections should be undertaken at least once every two weeks throughout the construction period and once every two months during the operational phase.

Operational phase auditing will be restricted to the last 12 months of the establishment works of the landscaping proposals

ET Certification

I hereby certify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-262/2007/B

Craig A Reid, Environmental
Team Leader:



Date: 28 March 2011

IEC Verification

I hereby verify that the above referenced document/~~plan~~ complies with the above referenced condition of EP-262/2007/B

Fan Cheong Tsang, Independent
Environmental Checker:



Date: 28 March 2011


Notes: EP-262/2007/B has replaced the former EP-262/2007/A, EP-262/2007 and EP-139-2002/A for the PAFF project after the resubmission of revised EM&A Manual and revised EIA Report respectively.

Permanent Aviation Fuel Facility (EP-262/2007/B) Sixth Landscape & Visual Bi-Monthly Audit Report – Mar 2011

28 Mar 2011

Prepared by: Jon Binalay/Francesca Zino/ Craig A Reid

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For and on behalf of Environmental Resources Management	
Approved by:	Craig A Reid
Signed:	
Position:	Environmental Team Leader
Date:	28 Mar 2011

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Annex A - Landscape and Visual Audit - Site Inspection Checklist and Photographs and Figures

Leighton Contractors (Asia) Limited (LCAL) has appointed ERM-Hong Kong, Limited (ERM) as the Environmental Team (ET) to implement the Environmental Monitoring and Audit (EM&A) programme for the Permanent Aviation Fuel Facility (the Project), including bi-monthly Landscape and Visual (LV) audits for one year of operation.

The Project construction works began at the end of 2005 and the landscape works began in mid-2006. In accordance with the *Condition 3.8* of Environmental Permit (EP 139/2002/A granted in February 2004), the Contractor employed Toyo Greenland Co. Ltd (Toyo) to create a detailed landscape plan and this was submitted to the Director of EPD on 8 February 2006. This original landscape plan was certified by IEC and ET, and approved by the Leisure and Cultural Services Department on 6 April 2006 and the District Lands Office, Tuen Mun Land's Department on 28 April 2006.

Although construction work was suspended between July 2006 and July 2007, the berm/landscaping bund was originally populated by vegetation grown during this project suspension period.

To address *Condition 3.4* of the updated Environmental Permit (EP 262/2007/B) based on an updated EIA report (*Register No. AEIAR-107/2007*), the Contractor submitted the Landscape Plan, which was certified by ET and IEC, to the EPD in December 2009. The EPD provided comments on 4 February 2010. Following revisions, the Contractor submitted an updated landscaping proposal for the PAFF project to the Lands Department (who are responsible for circulating it to other government departments including EPD) in April 2010. The Lands Department then required that the submission be in compliance with the latest technical circular, so a resubmission was made, which was verbally approved by the Lands Department at the end of July 2010.

Planting works were carried out by Toyo on the berm/landscaping bund with over 1,100 trees planted by the end of the reporting period⁽¹⁾. A tree survey was also conducted in April 2010 and revealed a 100% tree survival rate of the newly planted trees. Landscaping works were completed in July 2010 and in February 2011, trees observed to be poor health or dead were replaced by new trees. ECO are now undertaking the landscape maintenance at PAFF.

Operation of PAFF Phase 1a started on 30 March 2010 and in accordance with the *EM&A Manual*, Landscape and Visual (LV) audits of the site will be undertaken once every two months for one year following this date.

Operation of PAFF Phase 1b started on 9 October 2010. According to the *EM&A Manual*, the LV audit should include checking of the implementation

(1) CLG 11th Meeting Minutes and Presentations. Available at http://www.hongkongairport.com/eng/afacilities/files/presentation1_260510.pdf [Accessed 5 July 2010]

and maintenance of LV mitigation measures to ensure that they are undertaken in accordance with the recommendations of the approved *EIA Report*.

This is the **Sixth and final Landscape and Visual Audit Report** which summarizes the findings for the inspection carried out on 23 March 2011. This is the fourth stand alone LV audit report, since the LV audit reports were previously included in the Monthly EM&A Reports which were no longer required after August 2010, upon completion of construction phase environmental monitoring and audit.

A Landscape and Visual audit was conducted on 23 March 2011, covering the Operational Phase 1a and Phase 1b sites.

All landscape and visual mitigation measures have been implemented with the exception of:

- A generator, construction materials and several drums in drip trays were still observed near retained tree (T1) (refer to *Annex A*).

The Contractor was advised to ensure generator, construction materials and oil drums will not affect the nearby retained trees, or relocate them if found harmful to the trees. Contractor was also advised to keep tree root zones clear to prevent tree damage.

- Some new trees planted around the site to replace dead trees or trees in poor health, were still in poor health and/or slightly damaged (refer to *Annex A, Figure 1*).

The Contractor was recommended to review the health of all compensatory and retained including newly planted trees, and take appropriate action to improve their condition if confirmed as being in poor health. This should be carried out before the hand over period.

Further details of the findings and observations of the LV audit are presented in *Annex A*.

Annex A

Site Inspection Checklist and Photographs

Environmental Monitoring and Audit Programme for the Permanent Aviation Fuel Facility (PAFF)
6th Bi-Monthly Landscape and Visual Audit - Phase 1a & 1b (Operational)

Site Inspection Date : 23 March 2011

Inspected By : Jon Binalay

Certified by: Christina Ip (Registered Landscape Architect)



Area of Works	Items to be Monitored	Phase 1a & 1b (Operational)	
		Observation	Recommendation
Advance planting	Monitoring of implementation and maintenance of planting, and against possible incursion, physical damage, fire, pollution, surface erosion, etc.	New tree planting has been maintained. Stakes are present to provide adequate support. No incursion, physical damage, fire, pollution or surface erosion was observed.	Not required.
Protection of all trees to be retained	Identification and demarcation of trees / vegetation to be retained, erection of physical protection (e.g. fencing), monitoring against possible incursion, physical damage, fire, pollution, surface erosion, etc.	<p>Construction materials and debris observed close to the trunks of the retained trees T68 and T69 in the last site audit were cleared and trees are properly protected (Photo 2).</p> <p>Material debris was cleared and trees were properly trimmed and maintained at the north corner of phase 1b. (Photo 1)The generator and several drums in drip trays were still observed, as per the previous inspection in January 2011.</p>	Location of the retained trees at the north corner of phase 1b are all updated (as indicated on <i>Figure 1</i>) according to the revised Landscape Plan . Contractor was advised to ensure generator and drums do negatively impact on the nearby retained trees, or remove them as soon as possible as advised from the last audit.

Area of Works	Items to be Monitored	Phase 1a & 1b (Operational)	
		Observation	Recommendation
Clearance of existing vegetation	Identification and demarcation of trees / vegetation to be cleared, checking of extent of works to minimize damage, monitoring of adjacent areas against possible incursion, physical damage, fire, pollution, surface erosion, etc.	Not applicable for operational phase.	Not applicable.
Transplanting of trees	Identification and demarcation of trees / vegetation to be transplanted, monitoring of extent of pruning / lifting works to minimize damage, timing of operations, implementation of all stages of preparatory and translocation works, and maintenance of transplanted vegetation, etc.	A Tree Plan showing precise locations of transplanted and compensatory trees has now been provided. (see <i>Figure 1</i>)	Not applicable.
Plant supply	Monitoring of operations relating to the supply of specialist plant material (including the collecting, germination and growth of plants from seed) to ensure that plants will be available in time to be used within the construction works.	All plants have been planted.	Not required.

Area of Works	Items to be Monitored	Phase 1a & 1b (Operational)	
		Observation	Recommendation
Soiling, planting, etc.	Monitoring of implementation and maintenance of soiling and planting works and against possible incursion, physical damage, fire, pollution, surface erosion, etc.	Erosion control mat is present for soil maintenance (Photo 3 & 4). No incursion, physical damage, fire, pollution or surface erosion was observed.	Not required.
Decorative treatment of site hoarding	Implementation and maintenance, to ensure compliance with agreed designs.	Not applicable for operational phase.	Not applicable.
Architectural treatment of retaining walls, elevated road structures and other engineering works.	Implementation and maintenance of mitigation measures, to ensure compliance with agreed designs.	Light colours and tones of non-reflective neutral grey colours with low chromatic intensity have been used in architectural treatment of engineering works as proposed in Landscape and Visual mitigation measures.	Not required.
Establishment Works	Monitoring of implementation of maintenance operations during Establishment Period	Trees observed to be in poor health in the Operation Building area of phase 1a were all replaced with new trees. Some of these new trees were observed to be in poor health (Photos 5 & 6). Trees outside the boundary were in good health in general with trees previously recorded as dead or in bad health having been replaced with new trees. Some other trees were in poor health(Photos 7 & 8), (Figure 1).	Contractor is recommended to review health of all newly planted trees and others in poor health or damaged, and take appropriate action to restore the condition of the damaged trees before the hand over period.



Photo 1- Generator, construction materials and drums in drip trays were still observed near retained tree T1.



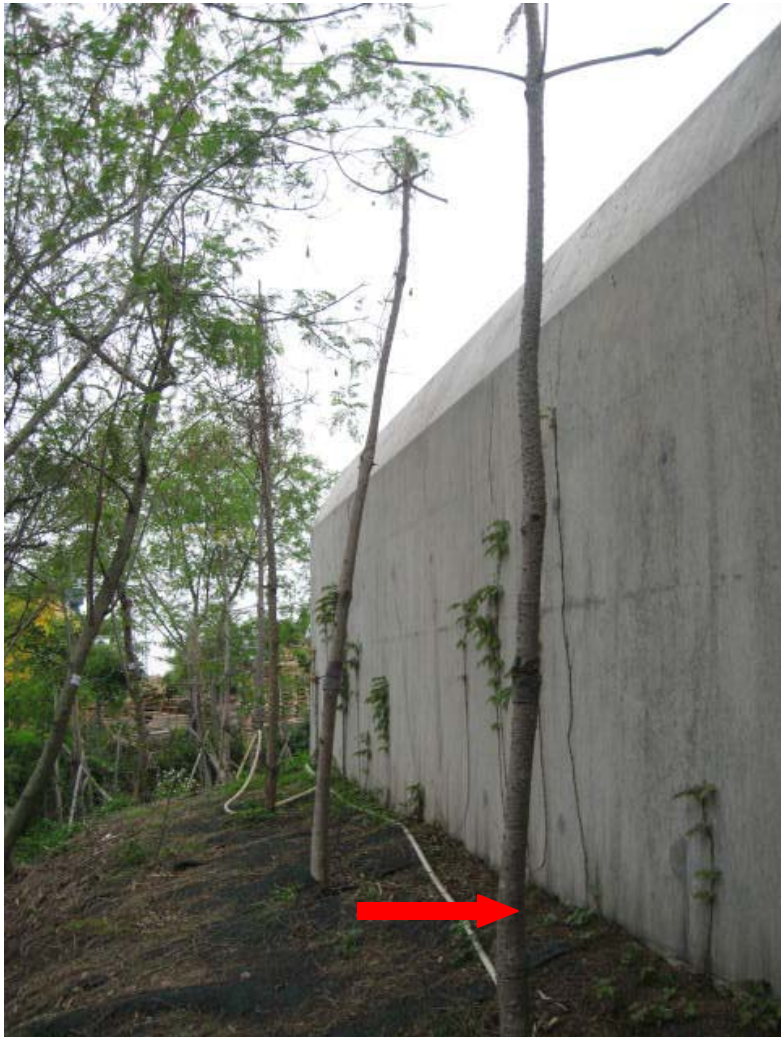
Photo 2 - Construction materials and debris stored near retained trees T68 and T69 are all cleared and retained trees are protected.



Photos 3 & 4- Example of soil erosion control matt outside boundary wall.



Photos 5 & 6 – Examples of new trees in the Operations Buildings area of Phase 1a, some of them in poor health.



Photos 7 & 8 – Examples of trees outside boundary wall of Phase 1a and 1b, observed to be in poor health (7) and newly planted trees replacing dead trees observed in the last audits (8).

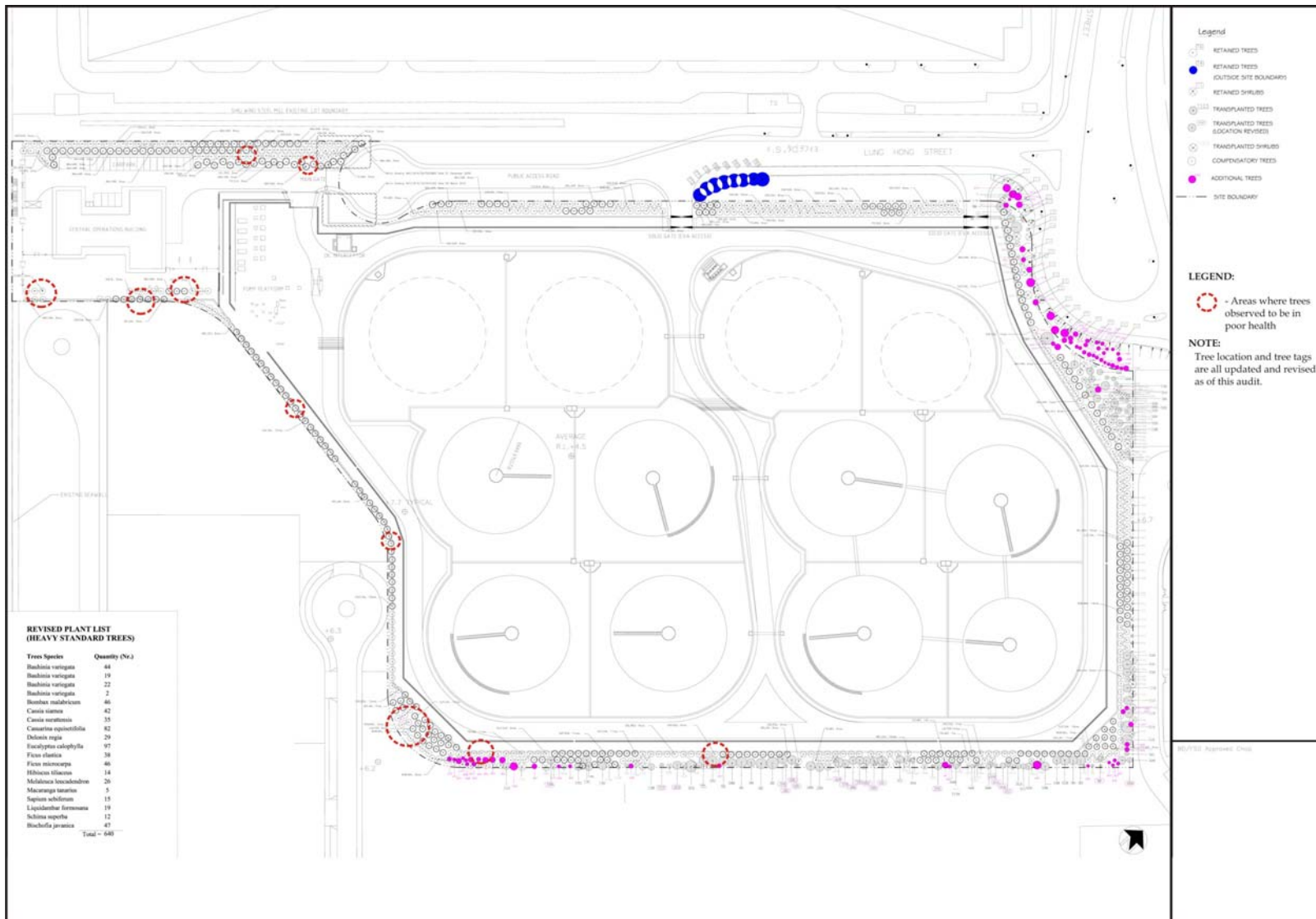


Figure 1 - Updated Planting Plan showing Areas where trees observed to be in poor health.

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