

## Project Profile



<b>Client</b>	Aurecon
<b>Location</b>	Katherine, NT
<b>Value</b>	\$0.5 million
<b>Duration</b>	May 2018 - July 2018

## Project Overview

### Project Overview

Royal Australian Air Force's Base Tindal is 15km outside Katherine and 320km by road southeast of Darwin in the Northern Territory. Although the airfield was constructed in 1942, it is the Air Force's youngest major operational base and one of Australia's most important Defence installations.

Two species of flying fox prominent in the Katherine region, the little red fruit bat (*Pteropus scapulatus*) and black flying fox (*Pteropus alecto*), had become prevalent on the Base with numbers reaching as high as 500,000. Although the risks were small, the density of fruit bats on the Base presented a collision risk potentially damaging aircraft engines during take-off and landing.

A secondary risk was that 1% of flying foxes carried Australian Bat Lyssavirus (ABLV). If the virus is transferred to humans through bites or scratches and not treated before symptoms set in, it causes serious illness which results in paralysis, delirium, convulsions and death.

The Department of Defence identified that the majority of the fruit bats nested in 52 African Mahogany trees prevalent across the

base. The African Mahogany is also considered an invasive species in Australia and therefore it was decided that the trees should be replaced with native trees, simultaneously sending the flying foxes off the Base to find roosting elsewhere away from human habitation.

Through a competitive tendering process managed by Aurecon, Intract Australia was awarded the project to remove the African Mahoganies and plant new native trees across the Base in their place.

## Scope of Work

The scope of works included felling 52 African Mahogany trees spread across the Base including trees adjacent to operation Base buildings, removing stumps and root balls and storing all timber in a designated area. The wood was then mulched producing over 1000t of wood chips. The second component of the works was the excavation of planter holes then planting and irrigating 75 Australian native Northern Territory Milkwood trees (*Alstonia actinophylla*) across the Base. The project team established and implemented a maintenance program for the new trees for a period of 18 months following completion of the works.

Other works included service detection, sediment control, implementing safety barriers to protect the Milkwood trees, traffic management, laying and commissioning irrigation lines, watering, fertilizing, pruning, weeding and applying pesticides. A local arborist was consulted during the works to ensure maximised tree propagation.

Milkwood trees were placed 6.0m from road edge and 15m apart. Tree holes were excavated 1.2 times the depth and 1.5 times the width of the plant container. Soil removed from the excavating was used for back filling.

Prior to planting the sides of the excavated tree holes were ruffed up and scored with a crow bar to avoid a smooth surface making it easier for tree roots to penetrate the compacted clay. The holes were filled with water and left for a period to ensure a moist planting environment prior to planting.

250g of organic fertilizer was added to the bottom of each hole. Bactivate, a microbial soil solution, was also added to the depleted soils to enhance plant growth. Clay breaking gypsum was also added prior to planting to aid in the development of root growth and soil structure. Two 10g Agriform fertilizer tablets were placed 600mm from the trunk of the tree on opposite sides to ensure even release of nutrients, then covered with approximately 100mm of excavated soil.

A length of perforated agricultural pipe was installed reaching the bottom of each tree hole prior to planting for watering purposes. All trees were well hydrated prior to planting and were in good growing condition, free of pests and diseases. The trees were watered immediately after planting, surface watered and watered via the sub surface drain.

Harwood stakes were driven into the undisturbed clay soils to a depth of at least 500mm and hessian webbing fixed to the stakes 600mm from the trunk to protect the trees. A ring of aged forest mulch was applied 100mm depth and 1,200mm wide, past the drip line, leaving 50mm away from trunk so not to cause collar rot.

Two Indigenous personnel were employed on site for the duration of the works achieving 43% Indigenous Participation. Over 2,000 work hours were completed without incurring a single environmental or safety incidents on site.

