PLAYBOOK

AI CITIES: SMART TREE INVENTORY & RISK MONITORING

OVERVIEW

Putrajaya is home to **over 700,000 trees**, carefully managed by **Perbadanan Putrajaya**. In the past, about **40,000 trees** were recorded through traditional manual methods. Today, Putrajaya is taking a major step forward by embracing **AI-powered urban forestry**, thanks to a smart collaboration with **Mapskart Technology** and **Greehill**. Supported by **MDEC funding**, this initiative uses advanced technologies like **LiDAR, IoT, and machine learning** to better care for our trees, support **sustainable city growth**, and make Putrajaya more **resilient to climate change**. With this innovation, Putrajaya is setting a new standard as a **forward-thinking, green, and smart city** for the future.

AI Cities Initiative for sustainable and data-driven urban forestry

Technology Collaboration between Mapskart Technology + Greehill

Aligns with Putrajaya Visionary Smart City 2030

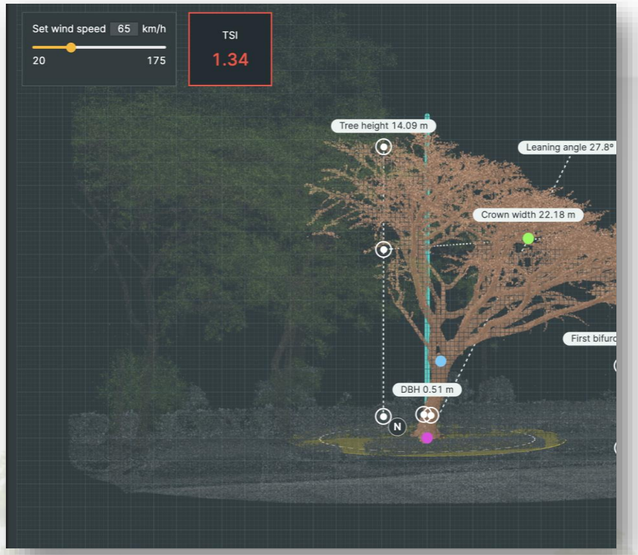
GOALS

1. ENCHANCE

Enhance **urban sustainability & green infrastructure**

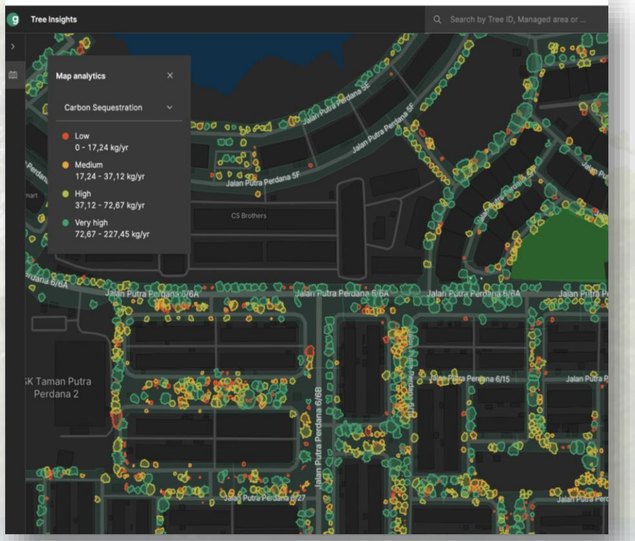
2. PROTECT

Protect **public safety** with proactive risk monitoring



3. ACHIEVE

Achieve **low-carbon city goals** with data-driven carbon tracking



4. SHOWCASE

Showcase **Putrajaya as a model AI-powered smart city** in Malaysia

CHALLENGES FACED BY CITY

This project aims to transform urban forestry using AI, enhancing sustainability, safety, and livability in smart city environment

1. Manual, reactive tree management = high cost, low efficiency
2. Public safety hazards (falling branches, storm damage)
3. Lack of real-time environmental & carbon sequestration data
4. No centralized, AI-driven monitoring for urban forests

SOLUTION TO PAIN POINTS

By leveraging AI, LiDAR, and IoT, this solution enables smarter, data-driven management of urban trees and environmental challenges.

1. Artificial Intelligence (**AI**) + Light Detection and Ranging (**LiDAR**) + Internet of Thing (**IoT**) platform by greehill
2. Creates 3D/4D digital twin of every tree in Putrajaya
3. Predictive analytics for risk detection & maintenance
4. Integrated with IoT soil sensors for real-time data
5. Provides smart dashboards for Perbadanan Putrajaya

AI USE CASE IN PUTRAJAYA

Putrajaya embraces AI-powered urban forestry to support sustainable city growth by integrating advanced technologies like LiDAR, IoT, and machine learning to manage green assets (trees), enhance climate resilience, and position Putrajaya as a forward-thinking, nature-based smart city leader.

BENEFITS FOR PERBADANAN PUTRAJAYA

1. **Sustainable Urban Forestry:** Enhances health and maintenance of Putrajaya's parks and green spaces
2. **Public Safety & Risk Reduction:** Predictive analytics detect hazardous trees early to prevent accidents
3. **Climate Resilience:** Tracks carbon sequestration, reduces urban heat island effect, and improves stormwater management
4. **Operational Efficiency:** Cuts down manual inspections with AI-driven insights
5. **Smart City Integration:** Aligns with Putrajaya's Visionary Smart City 2025–2030

BENEFITS FOR PUTRAJAYA CITIZEN

1. Cleaner air and healthier living environment
2. Cooler and more comfortable public spaces
3. Safer roads and neighborhoods through proactive tree risk management
4. Access to greener, sustainable, and resilient urban areas

STEP-BY-STEP GUIDE

Conduct multi-channel data capture

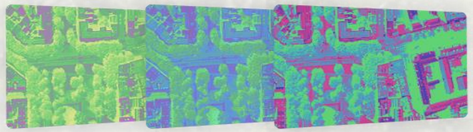
Perform AI-powered data processing

Gain insights to drive actions

POINT CLOUD

PANORAMIC IMAGES

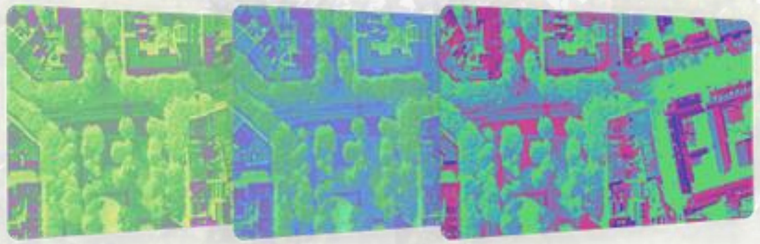
HYPERSPECTRAL IMAGES



POINT CLOUD

PANORAMIC IMAGES

HYPERSPECTRAL IMAGES



Perform field data collection with multi-channel data capture

1 **Mobile LiDAR scanning & IoT deployment**

2 **AI data processing in Greehill Urban Insights platform**

3 **Digital Twin creation & risk assessment**

4 **Dashboard deployment for Perbadanan Putrajaya (PPj)**

5 **Public engagement via reporting tools**

Perform trees data extraction

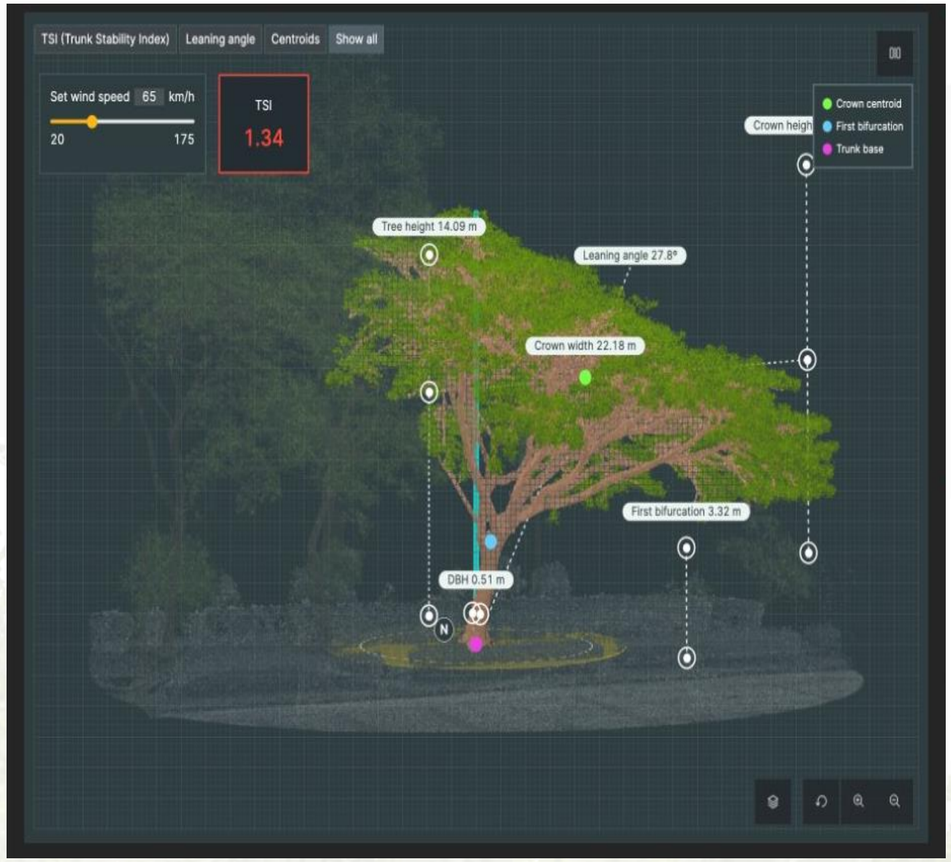
1 **Mobile LiDAR scanning & IoT deployment**

2 **AI data processing in Greehill Urban Insights platform**

3 **Digital Twin creation & risk assessment**

4 **Dashboard deployment for Perbadanan Putrajaya (PPj)**

5 **Public engagement via reporting tools**



Digital twin of tree with Trunk Stability Index (STI) Insight

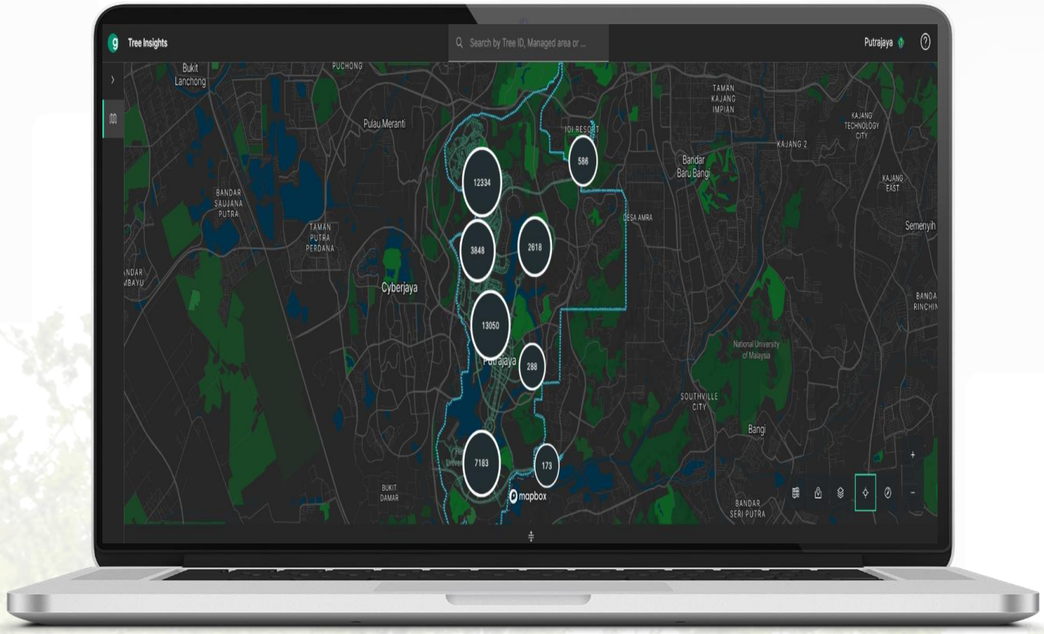
1 **Mobile LiDAR scanning & IoT deployment**

2 **AI data processing in Greehill Urban Insights platform**

3 **Digital Twin creation & risk assessment**

4 **Dashboard deployment for Perbadanan Putrajaya (PPj)**

5 **Public engagement via reporting tools**



Greehill Smart Tree Inventory (STI) Insight for Perbadanan Putrajaya

1 **Mobile LiDAR scanning & IoT deployment**

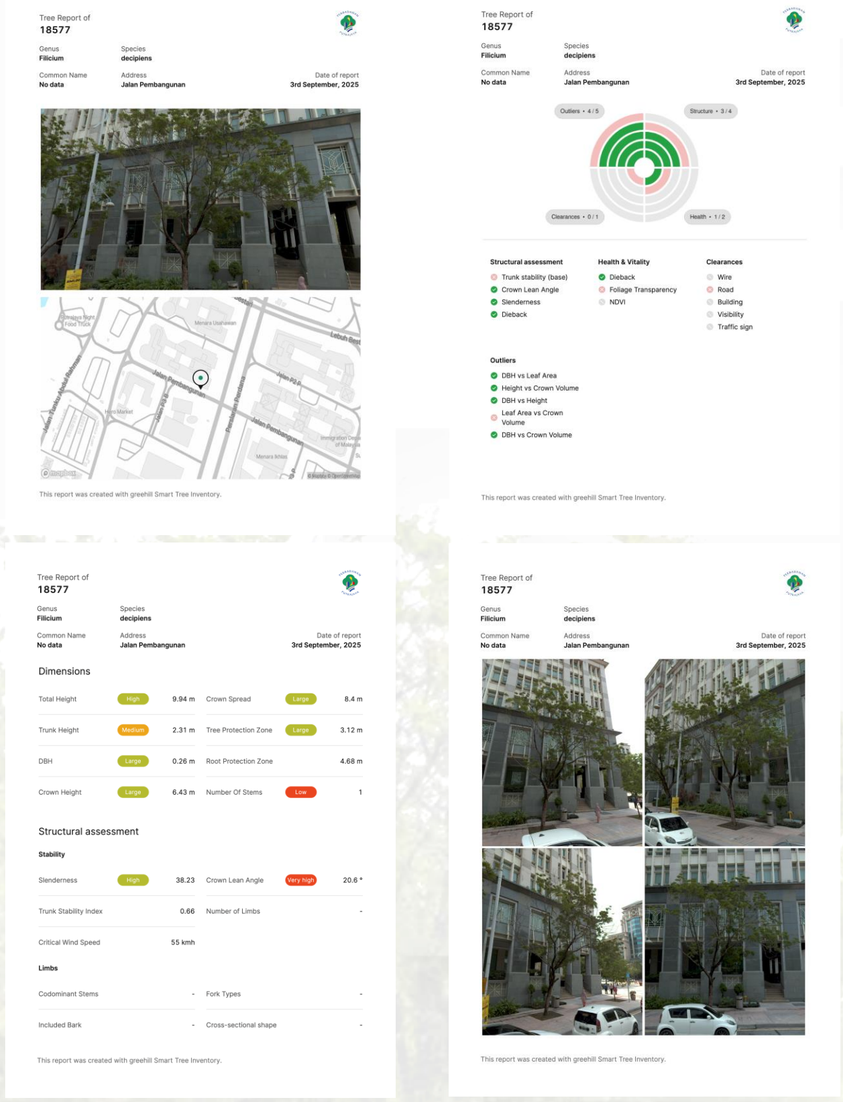
2 **AI data processing in Greehill Urban Insights platform**

3 **Digital Twin creation & risk assessment**

4 **Dashboard deployment for Perbadanan Putrajaya (PPj)**

5 **Public engagement via reporting tools**

Funded by Supported by Tech partners



Greehill data analytic output and report

1 **Mobile LiDAR scanning & IoT deployment**

2 **AI data processing in Greehill Urban Insights platform**

3 **Digital Twin creation & risk assessment**

4 **Dashboard deployment for Perbadanan Putrajaya (PPj)**

5 **Public engagement via reporting tools**

About AI Cities Initiative

An acceleration initiative for cities to adopt and harness AI technologies in optimising city efficiency and improve Rakyat's quality of life.

Funded by

mdec.my

Supported by

ppj.gov.my

Technology Partners

mapskart.com.my

greehill.com

Mapskart Technology Sdn Bhd

98.01 Biz Avenue 2 @ NeoCyber
Lingkaran Cyberpoint Barat
63000 Cyberjaya
Selangor Darul Ehsan

HQ Office +603 5678 9009
Peninsular +6012 211 1740
Borneo +6019 862 5296

admin@mapskart.com.my
hello@mapskart.com.my