

**2023 Summer Intern Training Report**  
**Post-secondary Student Summer**  
**Internship Programme (PSSIP)**

HKSAR Government  
Environmental Protection Department  
26/6/2023-18/8/2023

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# 1.Introduction

## Asbestos Control

Asbestos, a naturally occurring mineral, was widely used in construction, insulation, and fireproofing due to its good heat, sound and electric insulation properties. However, asbestos-containing materials(ACMs) in poor condition may release asbestos fibre that increases the risk of mesothelioma and lung cancer. Therefore, the identification, management, and removal of ACMs are crucial. This report aims to discuss the participation in the use of GIS to manage the asbestos inventory data arising from the Government Asbestos Survey and review the related asbestos investigation reports(AIR) through the summer internship programme.

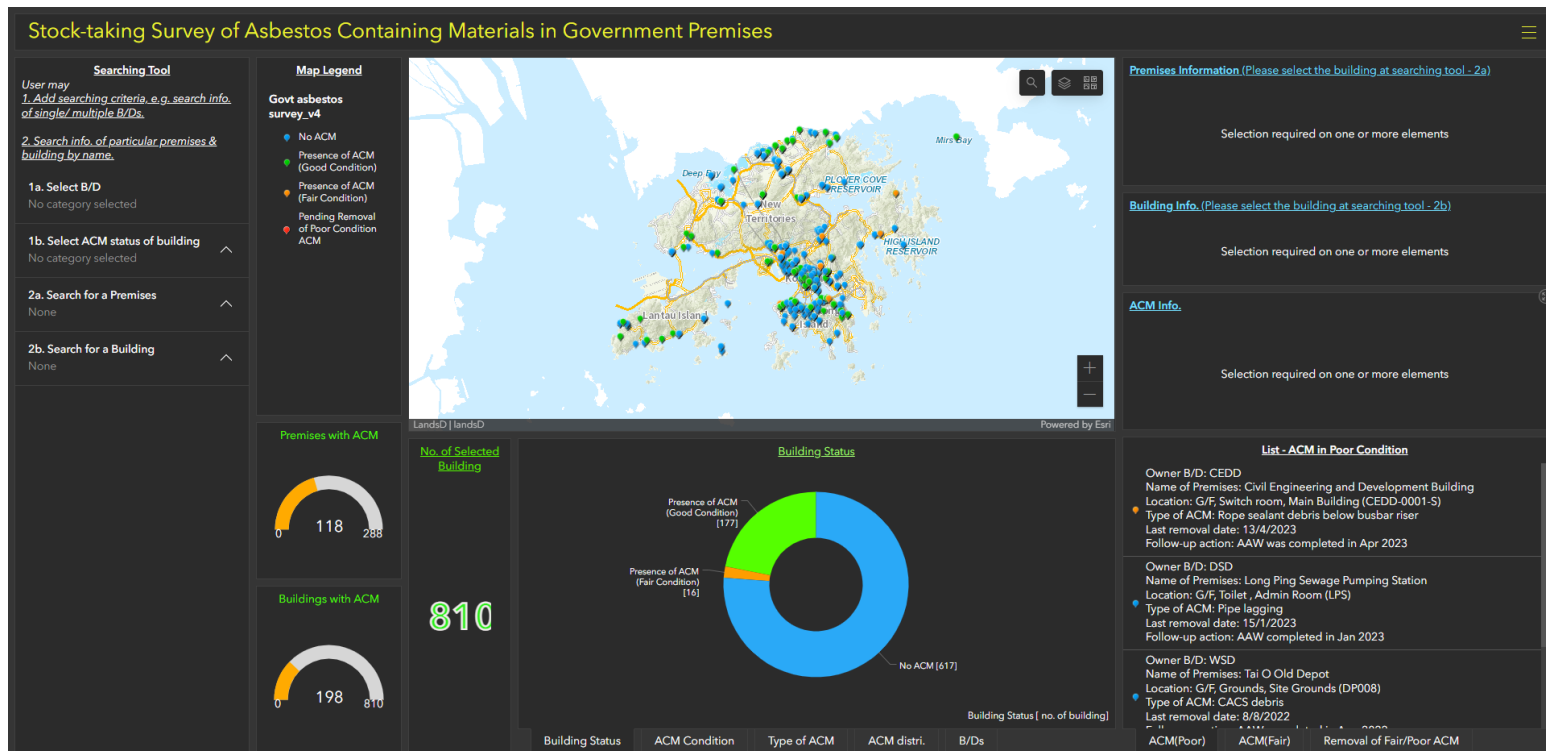


Figure 1

## 2. ArcGIS Online Overview

ArcGIS Online is a cloud-based mapping platform used for creating, sharing, and analysing spatial data. It provides tools for visualising, analysing and sharing geographic information in a collaborative environment. In this survey, ArcGIS is used to develop a database for regular monitoring and future removal works for those in good condition.

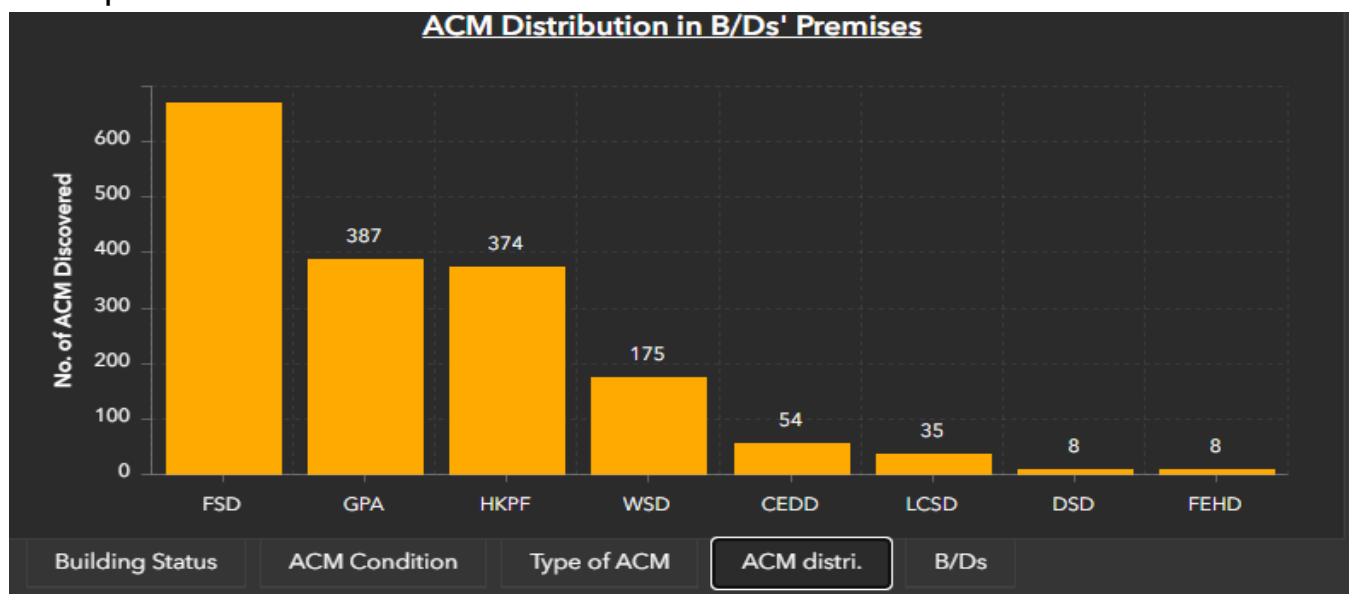
During internship, registered asbestos consultants carry out surveys and record the location, quantity and condition, then return the ArcGIS excel data to the Environmental Protection

Department. The data reported the number of ACMs included in the premises. I uploaded the ArcGIS Excel to the ArcGIS database.

### 3. Application of ArcGIS online in Asbestos Management

Understanding the use of ArcGIS Online, the Environmental Protection Department can create interactive dashboards that show the location and extent of ACMs in government premises. These dashboards can be shared with other departments, sections, consultants and facilitate coordination. Furthermore, the department can use the platform's analytical tools to identify statistics, assess risks and conduct the removal plan more effectively.

Example:



**Figure 2:** Due to this statistics, it shows that FSD contains the highest number of ACMs.

## 4. Enhancement of ArcGIS Online Dashboard

During the internship, I made some enhancements to the ArcGIS Online Dashboard.

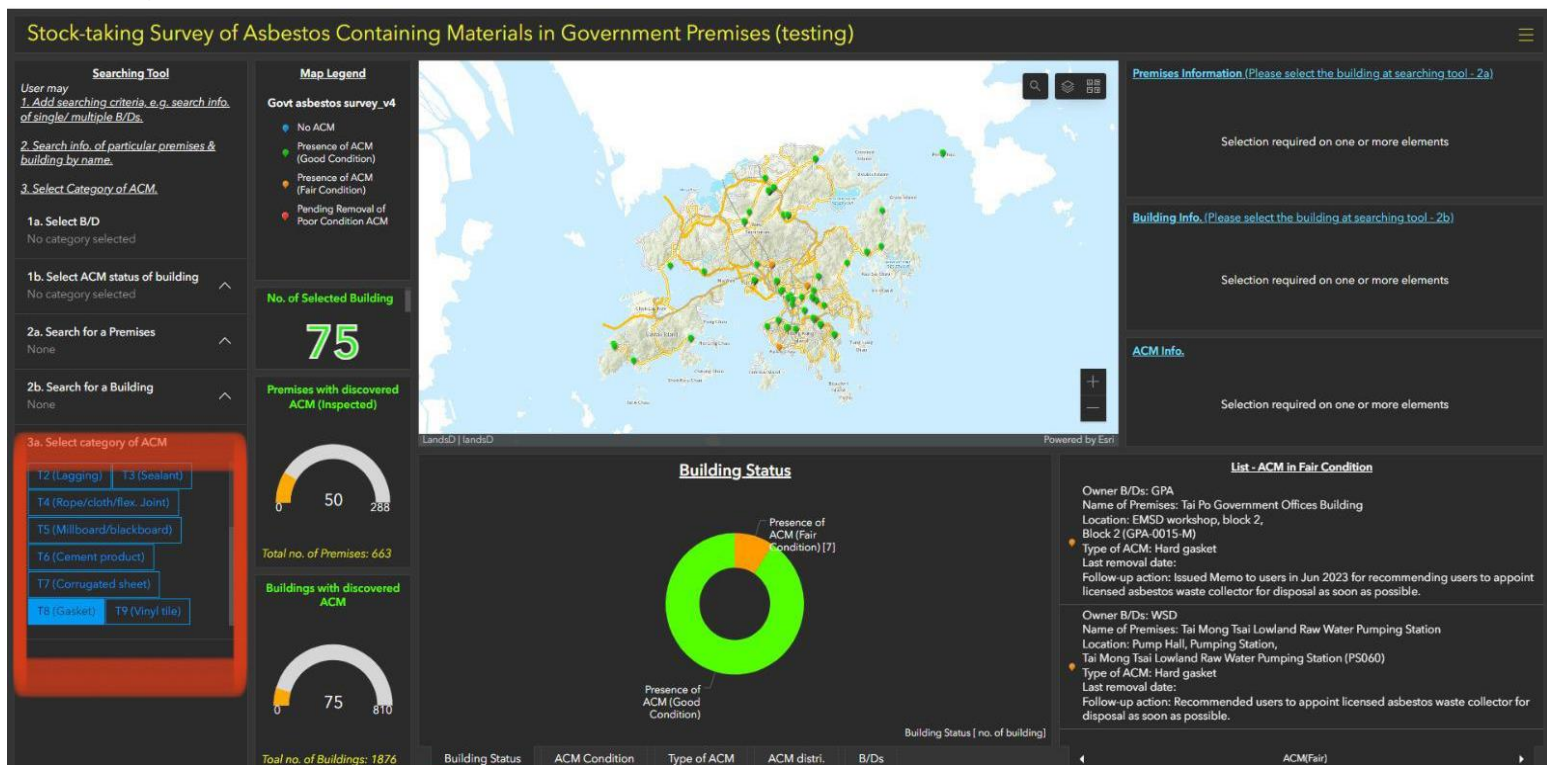
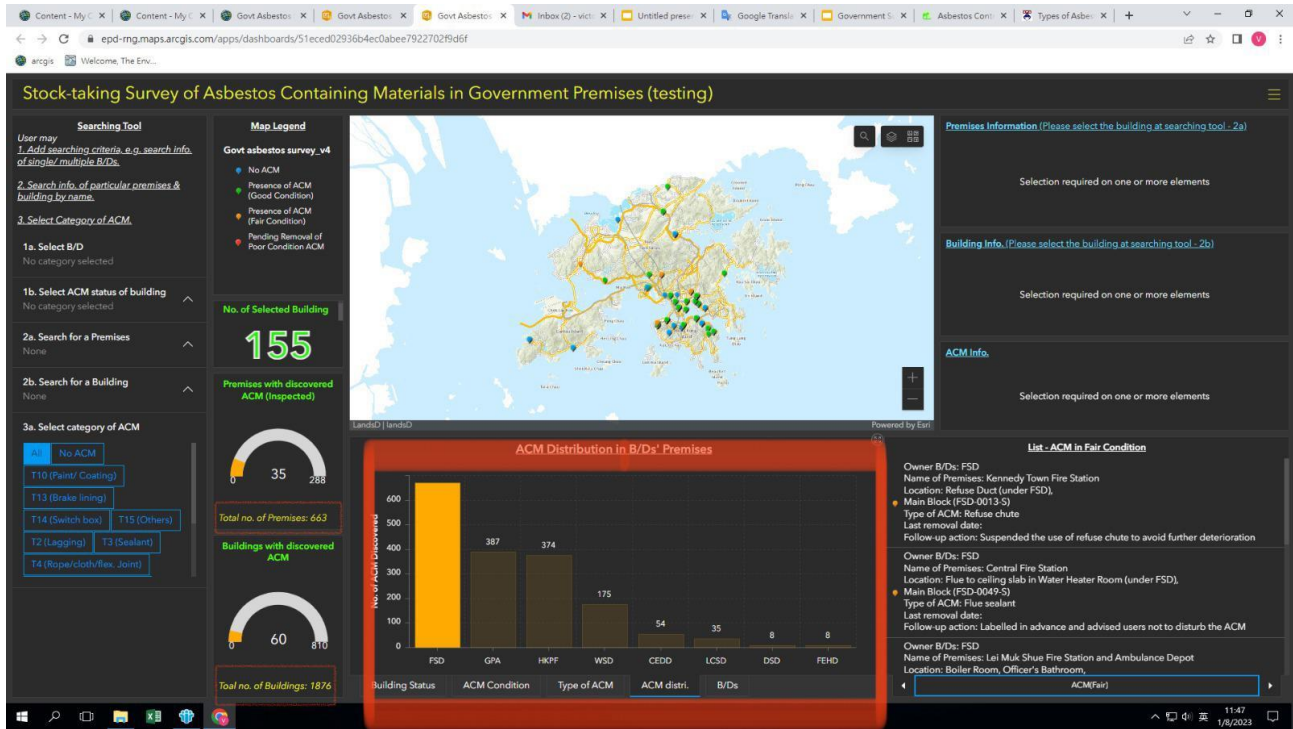


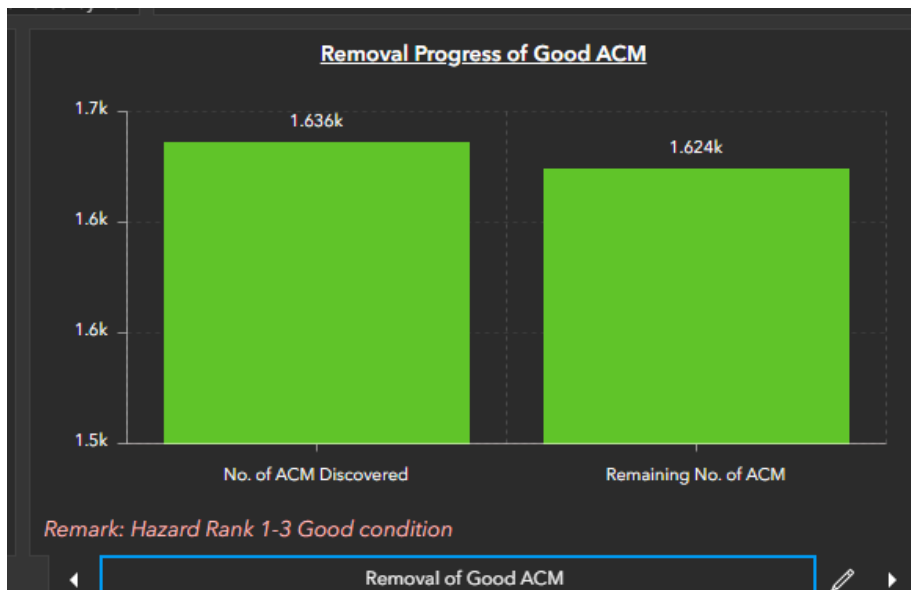
Figure 3

For figure 3, I optimise the data filtering function(Searching Tool). I have added a new filtering function in the bottom left 3a options, as shown in the example image. By selecting "Gasket", the map will display government premises that contain this type of asbestos, and the status indicators clearly show there are 50 premises with these ACMs. It also displays the proportion of the asbestos status, which benefits users effectively select the desired type of ACMs.



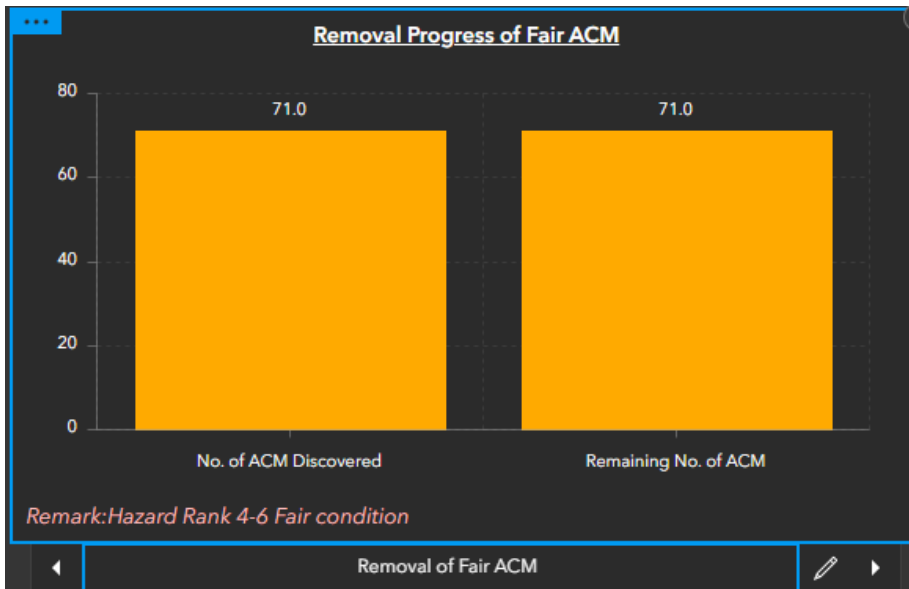
**Figure 4**

For figure 4, I have also added a note under the "Premises and Buildings Containing Asbestos Materials" indicator showing the total number of premises and buildings the government has, for users to understand the progress of the plan. Also, I have added filtering functions to the charts, which can also be used together with the filter options on the left. The data is shown directly on the charts without needing to click with the mouse.



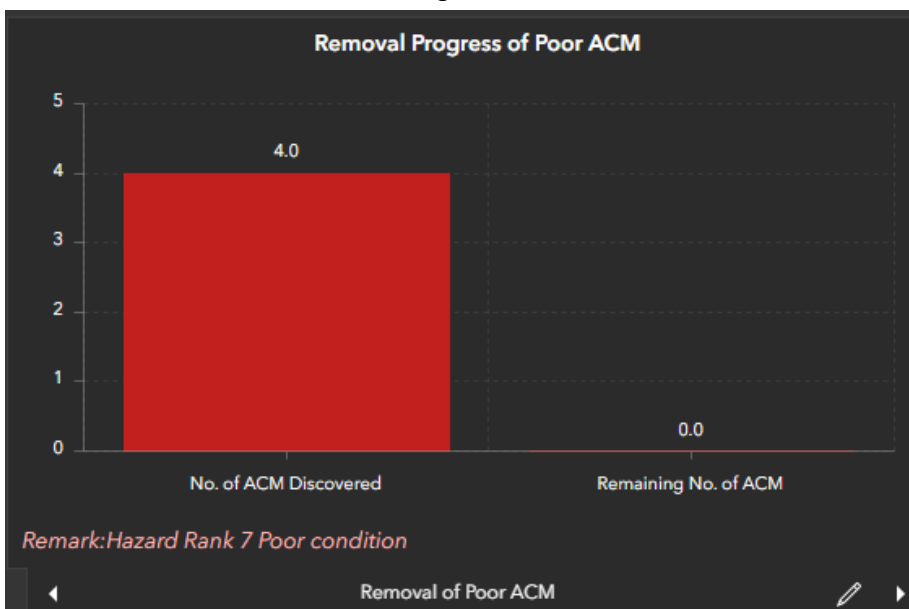
**Figure 5**

For figure 5, I have added 3 charts categorised by the asbestos material status, so we can clearly see how many ACMs discovered are in "Good" condition, and how many remain to be demolished. The chart colours also match the map marker colours, so the "Good" chart is green.



**Figure 6**

For figure 6, since the "Fair" icons in maps are orange, this chart is also orange. The data show that No. of ACM Discovered and Remaining No. of ACM remain the same.



**Figure 7**

For figure 7, since there are currently 4 government premises with ACMs in "Poor" condition that have been demolished, the remaining number of ACM shows 0.



## 5. Site Visit

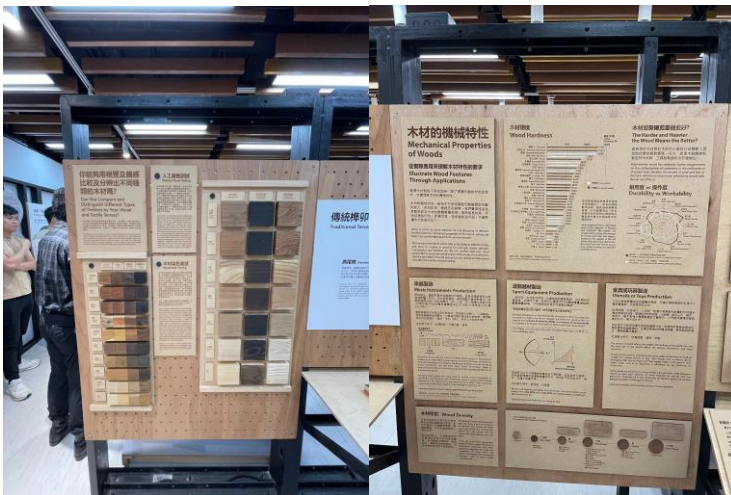
Throughout my internship, I also took part in site visits of EPD infrastructures, such as T•PARK, Y•PARK, O•PARK1, WEEE•PARK, EcoPark, and Recycling Store.

### 4.1 O•PARK1



O•Park1 specialises in organic waste recycling through extensive composting operations. A significant volume of food and yard waste from households, businesses and municipal sources are diverted from landfills and productively converted to compost. It recycled 12,000 tons of organic waste into compost last year. I've noticed that the site has more room and the capability to manage higher amounts of organic garbage. This beneficial activity may be expanded by collaborations with more trash producers.

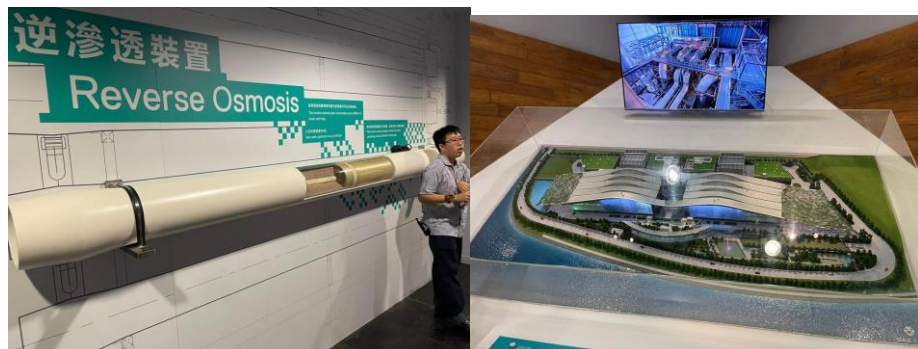
### 4.2 Y•PARK



Y•Park fills a key need in recycling bulky waste items like furniture, construction debris and tires which can't be easily handled at curbside. Recycled over 8,000 tons of bulky items and construction debris last year. Dismantled and recycled 500,000 lbs of electronic waste in 2020. Has capacity to process over 10,000 tons of bulky waste every year. Current waste sources are 60% municipal, 30% commercial and 10% residential.



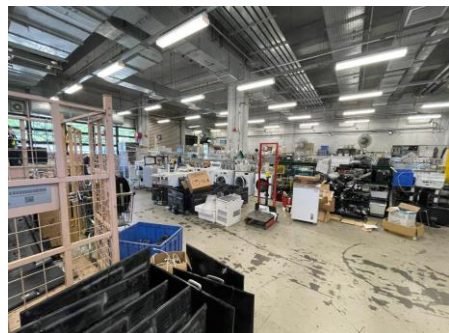
#### 4.3 T•PARK



T•Park is a crucial center for the community's recycling and rubbish disposal. E-waste, hazardous garbage, scrap metal, and other waste streams are all properly handled by the facilities. Systems for sorting and processing items like plastic, paper, and organic waste are effective and effectively run. Throughout the park, there are cleanly designated collection locations where visitors may dispose of their separated trash. Diverts approximately 75% of incoming waste from landfills through sorting and processing.

Through exhibits and booklets, the public education center offers helpful information on reduce-reuse-recycle techniques. T Park's operations and infrastructure are outstanding overall for meeting community recycling demands.

#### 4.4 WEEE•PARK



In WEEE•PARK, common types of e-waste recycled include computers, monitors, printers, TVs, washing machines, refrigerators, air conditioners. In 2021, around 70,200 tonnes of e-waste were collected and processed by these regulated and processed by these regulated recycling facilities.

#### 4.5 EcoPark



EcoPark has contracts with various private waste management companies to operate the recycling facilities. Major operators include ALBA, etc. In 2021, EcoPark handled over 396,000 tonnes of waste. Main waste streams include wood, organic waste, plastics.

#### 4.6 Recycling Store



Recycling Store is a place that offers convenience for the public to donate and recycle used goods. It promotes recycling and waste minimization in the community and are generally appreciated as accessible recycling options for residents.

### **6. Conclusion**

In conclusion, the undertaking of a stock-taking survey for ACMs within government premises as part of the Environmental Protection Department's initiatives represents a critical step in promoting a healthier and safer environment.

The stock-taking survey makes a substantial contribution to the detection and control of ACMs, lowering possible risks and avoiding needless asbestos fiber exposure. The Environmental Protection Department exhibits its commitment to the protection of public health and the environment by the efficient completion of these activities as well as the devotion to ongoing improvement and monitoring.