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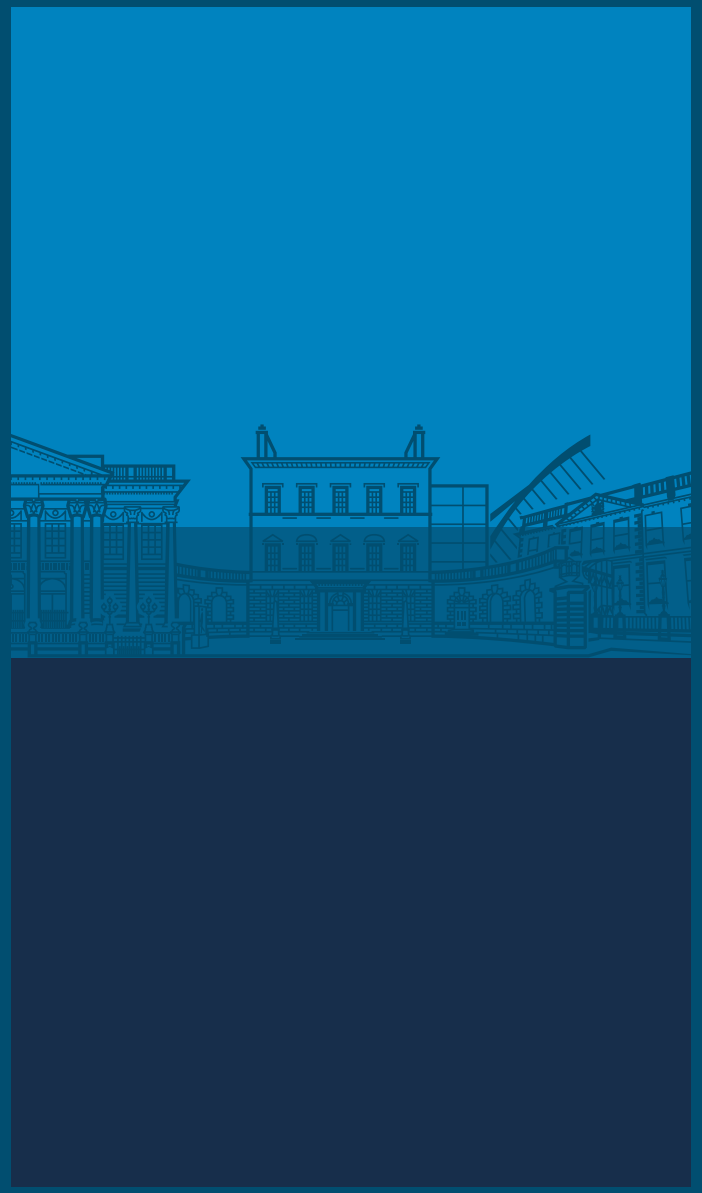
Dublin City Council

How Drones are being used and changing Dublin City Council service delivery (snapshot)

Last update: 31/07/2025



Dublin City Council

- Drone Unit Overview & 5 years Drone Strategy

Drone Technology Engagements

- Bray Air Display Show 2025

Drone Public Service Stories

- Emergency Services
- Flooding
- Infrastructure & Buildings
- Environmental
- Heritage & Conservation
- Mapping & Transportation
- Smart Cities: 3D Models & Digital Twins

More information

Dublin City Council – Drone Unit

- The Drone Unit is the central point for all drone (UAS) expertise within DCC
  - **Established in May 2024**
  - Responsible for: Operations, Governance & Policy and Innovation
    - **More information: https://www.dublincity.ie/innovation-and-technology/drone-unit/drone-unit-overview**
  - Delivering the Drone and Urban Air Mobility Strategy for Dublin City Council 2024 – 2029
    - **Access to the strategy: https://www.dublincity.ie/innovation-and-technology/drone-unit/drone-and-urban-air-mobility-strategy**
  - Research: Drone Innovation Partnership project collaboration with Irish Aviation Authority and Maynooth University
    - **Project and partnership information: https://www.dublincity.ie/innovation-and-technology/drone-unit/drone-innovation-partnership-project**

- Drones are proving to be very beneficial to the organisation:
  - **Reducing cost**
  - **Saving time**
  - **Improving the safety of the staff and operations**

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Drone technology engagements with communities

Public Engagement: Bray Air Display 2025 – “Future of Flight”

As part of its public engagement activities, the Drone Innovation Partnership (DIP) collaborated with the **Bray Air Display 2025** to deliver a dedicated **“Future of Flight” Innovation Zone**.

The Bray Air Display is one of Ireland’s largest free family events, attracting tens of thousands of attendees annually. The partnership provided an opportunity to raise awareness, promote informed dialogue, and educate the public on the role of drones in society through engaging, accessible content.

This activity supports the DIP’s aim to build public understanding and trust around drone technology, and to involve citizens in shaping the future of urban airspace in a safe, inclusive, and transparent manner.

The **Future of Flight** Zone included:

- **Live Drone Demonstration Segment** – showcasing a commonly used drone model to introduce basic capabilities and spark curiosity
- **Interactive Tech Zone** – featuring a VR drone simulator for over-12s, offering a hands-on experience of drone operations
- **Workshops & Talks** – providing information on drone safety, regulation, and how drones can be integrated into smart urban environments
- **Public Sentiment Survey** – inviting attendees to share their views on drone use in cities and public services

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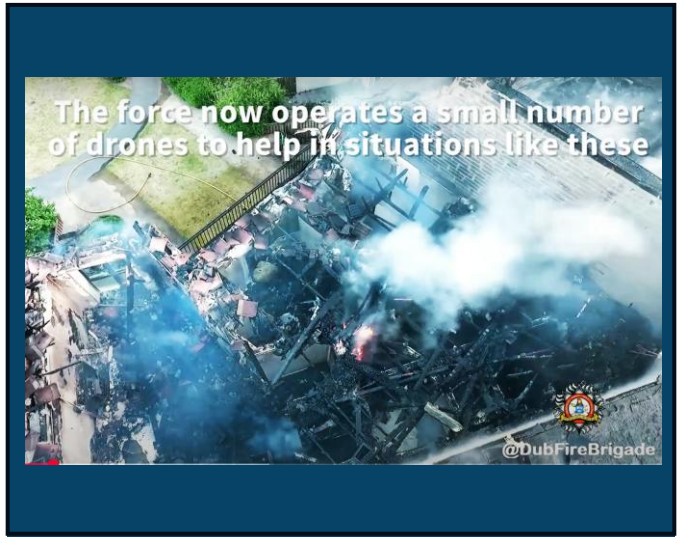
Dublin Drone Stories of Use Cases

Description:
Dublin City Council deploys drones to provide rapid aerial views during incidents such as fires. Equipped with live-feed cameras, drones deliver real-time imagery directly to Incident Commander, providing a bird view of incident, accelerating situational awareness and enabling faster and safer coordinated response.



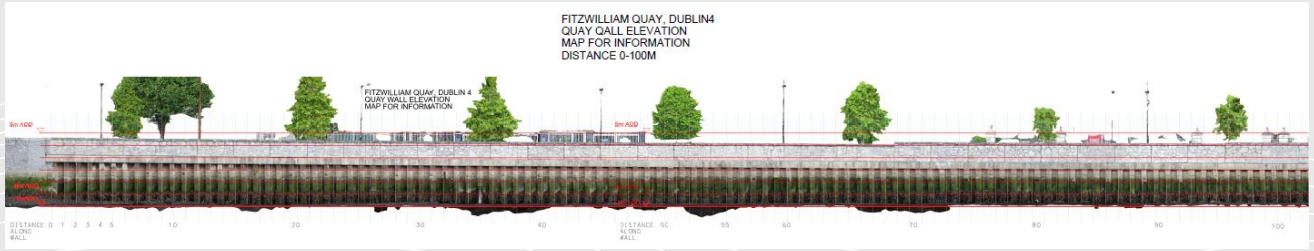
Emergency Response & Public Safety

Benefits vs traditional methods:
Unlike ground teams or manned helicopters, drones can be sent out within minutes at a fraction of the cost and risk to personnel. They access hard-to-reach areas without delay, and their real-time high-resolution footage helps command units react with greater precision and safety.

Flood Defence & Monitoring

- Description:
  - **Dublin City Council deploys drones to assist in monitoring flood defence structures, such as riverbanks, embankments, and drainage systems. An example was a before and after work of a sheet-piles structure that needed repair, the Drone Unit captured images, a 3D model was produced, a plan and an elevation map was delivered to the engineers to highlight key points of interest and a snag list.**

- Benefits vs. traditional methods:
  - **Eliminate the need for boat service to inspect structures. Which makes drone data capture more efficient, safer and cheaper. Also, the traditional method would delivery multiple single photos isolated. Capturing the images with a drone allows for further imagery processing resulting in a single scalable image which combine multiple images.**



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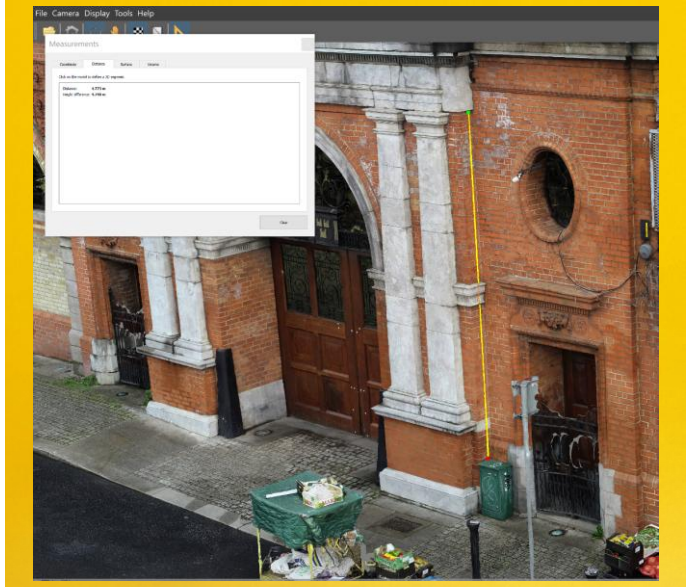

Infrastructure Inspection & Building Safety

- Description:

› **Drones conduct inspections on hard-to-access structures, such as rooftops, bridges, ageing facades, capturing detailed imagery for structural assessments eliminating the need for scaffolding or personnel to work at height. The end result are videos, high-resolution measurable images or digital models for data driven decision, such as planning repair work.**

- Benefits vs traditional methods:

› **From case study of roof inspections, the cosTraditional inspections often involve time-consuming and expensive access equipment. Using drones dramatically lowers cost, reduces inspection time, enhances safety by keeping operators on the ground, and delivers high-resolution data that improves maintenance planning.**

› **From case study of roof inspections, the cost savins were 4.5 times. Work carried out withing hours versus days. Operations were safer.**

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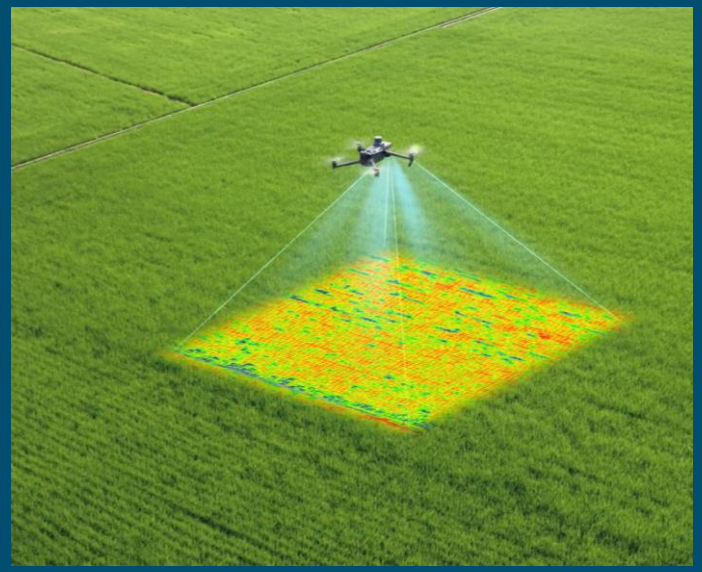
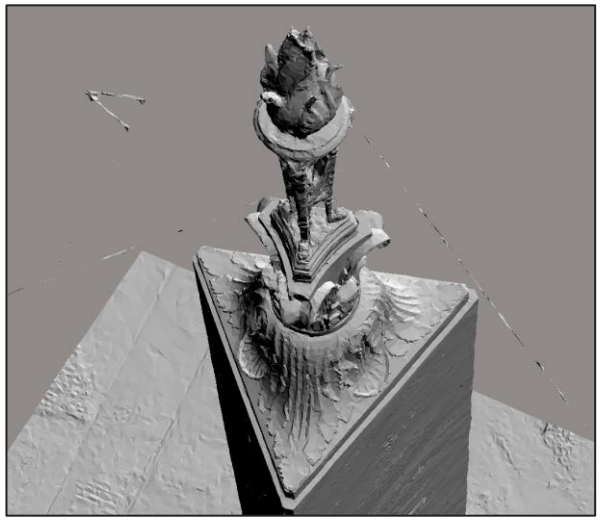
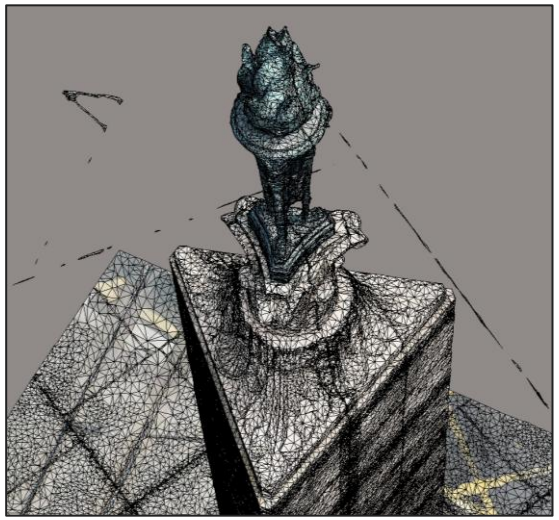


Environmental Monitoring

- Description:
  - **Bull Island survey using a drone Mavic 3M which has a Multispectral Camera to spot invasive species. It captures light reflectance in specific narrow bands (e.g., Green, Red, Red Edge, and Near-Infrared). By comparing how much light is reflected in these different bands, you can calculate various Vegetation Indices (VIs) that are directly related to plant health, vigor, and chlorophyll content. The end product was a coloured map for analysis.**
- Benefits vs traditional methods:
  - **The extension of the area covered to scan for invasive species is larger in shorter time. As traditional method was people by foot.**

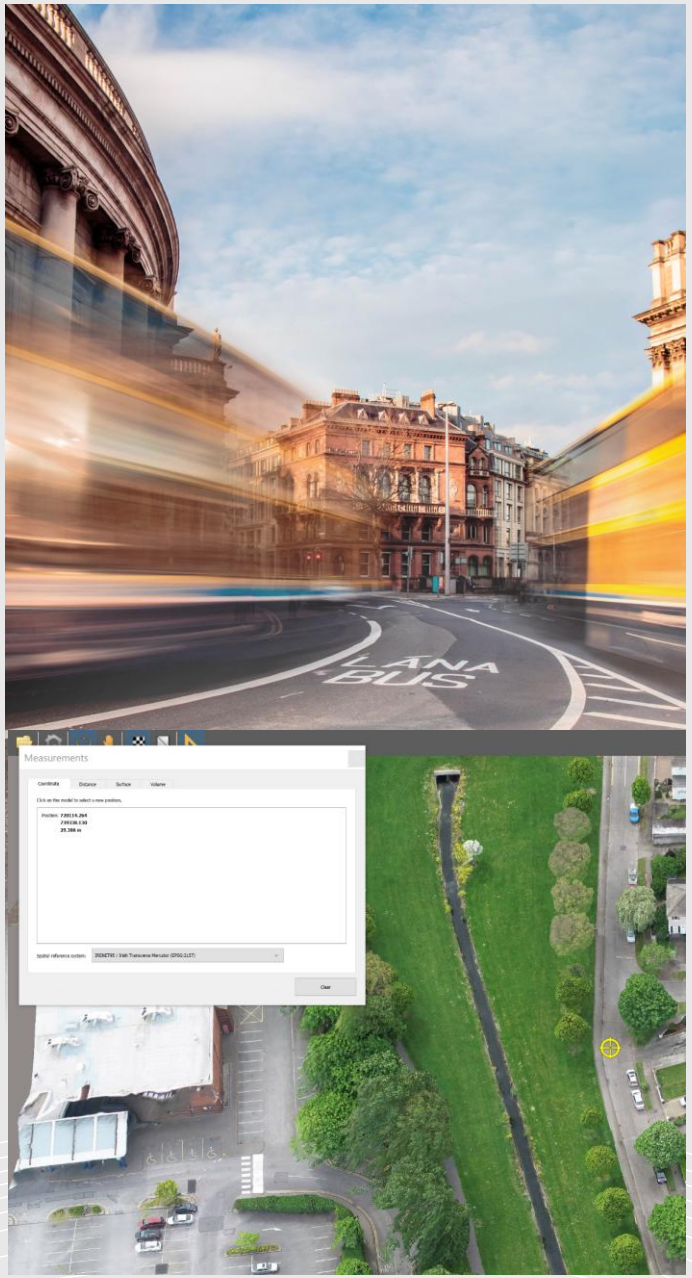




Heritage & Conservation

- Description:
  - **Dublin City Council is exploring the use of drones to support heritage protection and conservation efforts across the city. Drones are used to capture high-resolution imagery and produce 3D models of historic buildings, monuments, and archaeological sites. This visual data helps conservation teams monitor structural changes over time, assess deterioration and plan maintenance or sensitive interventions with minimal disruption to the site. It also creates a digital record of the structures for enforcement or archaeological legislation.**

- Benefits vs traditional methods:
  - **Drones offer a non-invasive and highly efficient alternative, enabling precise documentation while preserving the integrity of heritage assets. Conventional approaches often require scaffolding, aerial lifts, or restricted site access, which can be costly, intrusive, or physically damaging to delicate structures. The resulting digital records also support long-term conservation strategies and improve public understanding of Dublin's rich historical environment.**



Mapping & Traffic Analysis

- Description:
  - **DCC captures some videos to analyse traffic flows. Some videography is also captured for Active Travel new cycle routes promotional materials.**
- Benefits vs traditional methods:
  - **Birdseye view of traffic vs on the ground views. Provides as-built content for new infrastructure put in place in the city.**

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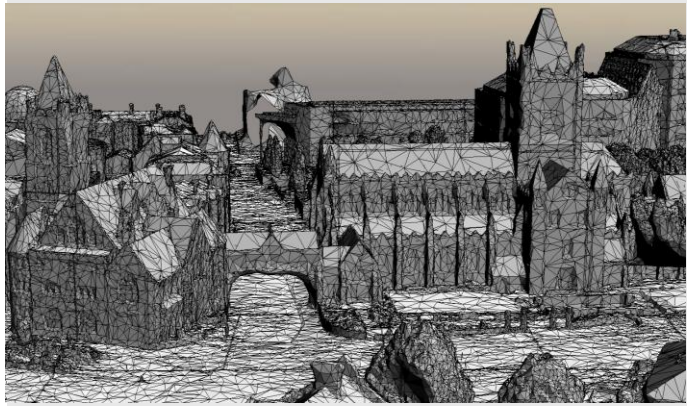
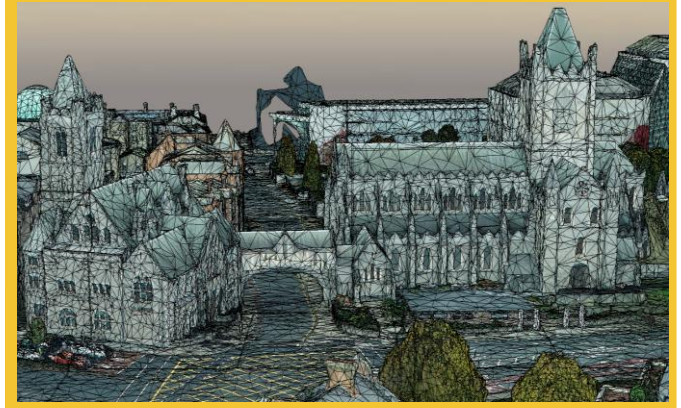
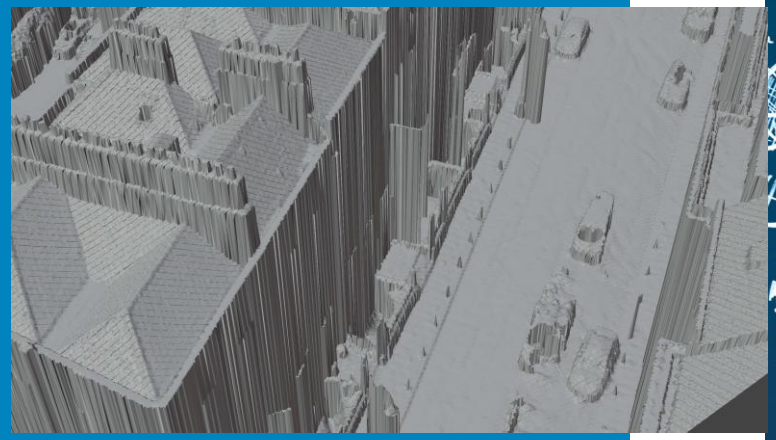
Description:
Using Mavic 3E DCC set up a pre-defined flight route to capture imagery in a grid format with a set-overlap. Those images are imported into processing software to generate 3D digital models, 3D surface models, digital terrain models and orthophotos. Multiple departments in DCC use the outputs, for example: Digital Twins - Smart Cities, Flood Defence, Waste Management, City Architects.

Smart Cities – Digital Twins / 3D Models

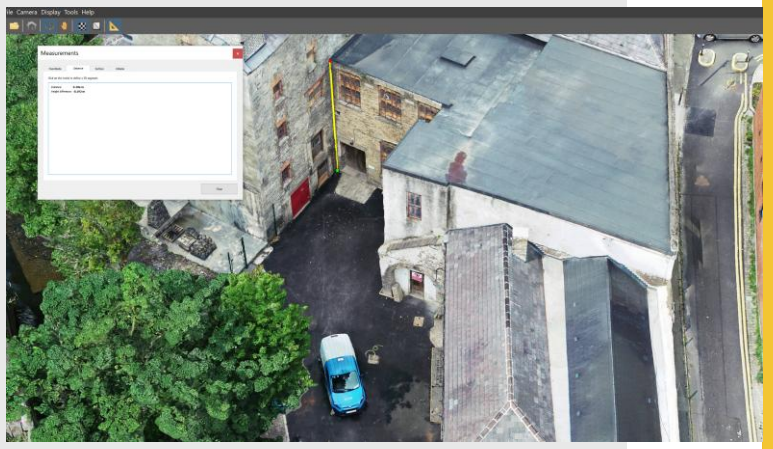




Benefits vs traditional methods:
Traditional methods for city buildings or areas were carried out by airplanes (aerial photogrammetry) which are expensive. Or it would be captured from ground level by terrestrial scanners, resulting in lower resolution data and more time consuming process. Drones allow for high detailed models to be generated.



3D Models Methods and Measurements



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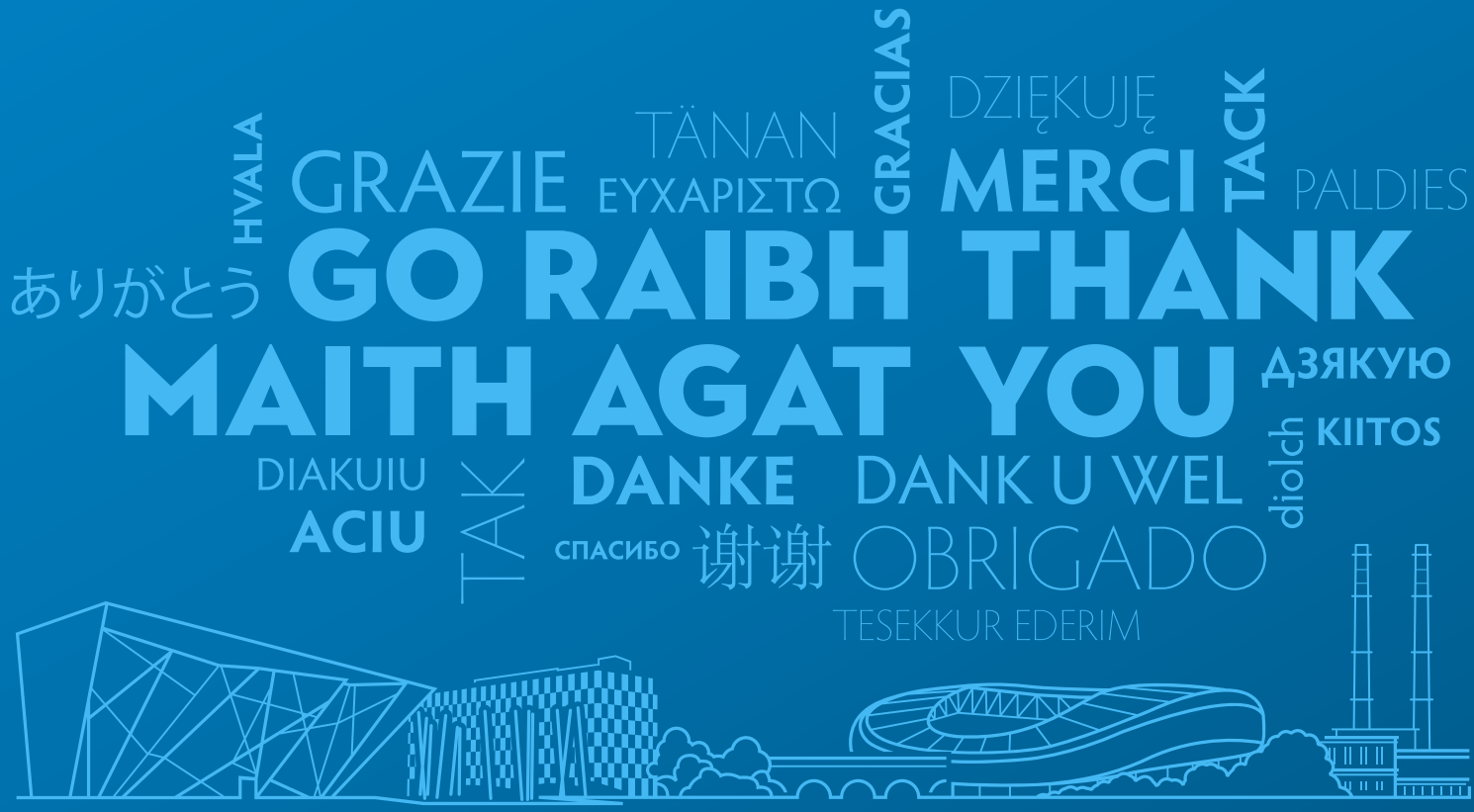

More information:

https://www.dublincity.ie/innovation-and-technology/drone-unit

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