ResilienTogether | INNOVATION

Case study #02
June 2023

ResilienTogether is one of 25 Flood and Coastal Innovation Programme (FCRIP) projects funded by DEFRA, with an aim to demonstrate how practical innovative actions can work to improve resilience to flooding and coastal erosion.
These case studies highlight learning and innovations from ResilienTogether. They share new approaches and techniques that can be replicated by schemes and organisations across the country.

Drone Flyover

Use of drones to capture visuals of catchment conditions and document assets from the air.

Scan the QR Code to view the Journey Along the Pix Brook.

Figure 1. Drone footage of the Pix Brook at Stotfold

ResilienTogether

ResilienTogether is creating a Smart Catchment, through use of innovative technologies and techniques, to reduce flood risk to people and places, enhance the water environment in the Pix Brook catchment and improve community resilience in the face of climate change.

The project is achieving this through a close-knit partnership that collaborate to deliver six inter-related work packages. This case study relates to WP4 Comms & Engagement, which aims to build community resilience through novel engagement approaches. Use of drones is one of these approaches with videos and stills they produce being used online and in engagement events.

Figure 2. Footage of the Standalone Farm Reservoir gate

Challenge

ResilienTogether is working to connect the public and stakeholders with the Pix Brook and their local environment. This requires finding exciting ways to visualise the Pix Brook within its varying and complex catchment, from its rural fields to it's highly urbanised areas. Documenting hard to reach assets along the brook is also a challenge that has proven to require a novel approach.

Innovative Solution

To obtain a fresh perspective, Central Bedfordshire Council brought in TerraDat, Geophysical Survey Specialists, to complete a drone flyover to take footage and stills of the Pix Brook catchment. This footage displays full length the brook from an alternative viewpoint that highlights how the brook acts as a link between Letchworth Garden City and the downstream towns of Stotfold and Arlesey.

Benefits

1. A new perspective

Drone footage offers a new and exciting way to view the Pix Brook, a view that locals often don't get. They can see familiar locations and even spot their house in relation to the Pix, creating a stronger sense of connection to the project and greater engagement.

2. Inspecting the Pix

Drone footage allows the council and other stakeholders to inspect the Pix Brook's landscape features and processes, and assets, including the the ResilienTogether river level monitoring network.

3. Documenting flooding

Drones could be used to understand flood risk before a flood and to record flooding whilst it is happening, allowing flooding to be documented in an innovative way.

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Figure 3. Drone footage of the weir at Standalone Farm

The aerial footage was acquired using a DJI Mavic 3 Pro, which has an attached Hasselblad camera that takes 5K video, from which high-resolution still images can be extracted. Drone use over built-up areas is restricted unless the aircraft weighs less than 250g, so for filming over these areas A DJI Mini 3 Pro was used instead.

Filming was done over three separate days in December, February and June. The winter visits allowed for good visibility of the Pix Brook, and one visit coincided with remarkable clear and frosty conditions. The June visit captured the lush vegetation and foliage of the countryside that the brook flows through.

The main challenge encountered by TerraDat was the weather. Forecasts cannot always be relied upon and encountering cloudy skies and strong winds was not preferable for the filming day in June. Despite this, excellent footage was collected for all days.

The drone footage produced enables the public to see familiar locations from a new perspective and even spot their house in relation to the Pix Brook. This helps to build a stronger sense of connection with the local environment and foster greater engagement with ResilienTogether and local environmental groups.

The journey of the brook helps to emphasise that improving flood resilience is not only the responsibility of those affect but also of those living upstream.

Another valuable use of drone footage is it allows the council and other stakeholders to inspect the Pix Brook's landscape features and processes. This includes observing the dynamics of the river; in-channel structures for maintenance purposes and the ResilienTogether river monitoring network assets.

A significant way drones could be further utilised is to document flood extents and impacts during a flood event. This would provide highly valuable data and reduce the reliance on residents to send in photographs and video in a flood event.

Figure 4. A rural stretch of the meandering Pix Brook

Nick Russill

Director and founder of TerraDat

"It is increasingly challenging to be innovative or creative in ways that gain that wow factor and stand out from the crowd. We try to get intimately acquainted with the feel and story of a site and allow our footage to communicate this to people who are unfamiliar with the location"

Use Our Learning

This learning is valuable to Lead Local Flood Authorities and other organisations who are seeking for a new way to display and assess their catchment and engage the public and local stakeholders.

If you want to hear more, please contact ResilienTogether.project@Centralbedfordshire.gov.uk