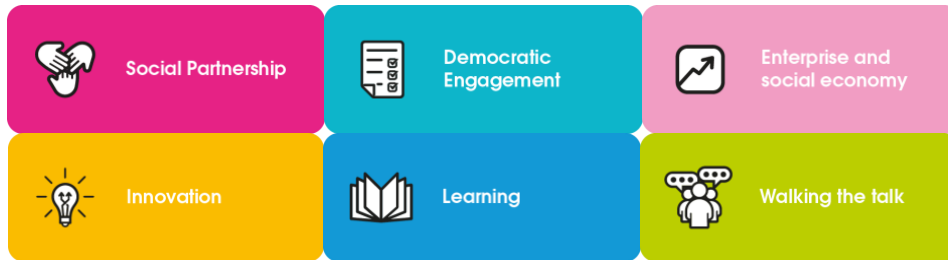




Co-operative Councils

Innovation Network

HOUSING



Swindon Borough Council

Modernisation in the field of Social Housing Roof Inspections

Modernisation in the field of social housing is often marked by the creation of intangible benefits that go far beyond mere cost savings and operational efficiency. One such example is the introduction of drones for our social housing roofing inspections, an imaginative move with commitment to enhance both how we support our tenants and improve efficiency of operations.

This proof-of-concept project was supported by a dedicated collaborative team of cross-Council services along with, all important, engagement with and support from tenants and residents. The collective wisdom, wide range of perspectives and experiences, along with dedication were crucial to its success.

Our aim; to evaluate and evidence the benefits of using drones for roof inspections on our social housing stock. We ran a trial between October 2022 and April 2023, following the success of it, drones have now moved to business as usual and extended in their use across the organisation.

The roofing team's major business challenges were:

- Eliminating work at height where possible to improve alignment with HSE guidelines
- Improving the quality and efficiency of our roof inspections; having accurate assessment for 'right first time' repairs
- Where possible remove the need for scaffolding to inspect

- Reducing risk to others, improving inspection times and if possible budget savings

Time was invested upfront thinking and researching the potential concerns and barriers to acceptability and devising strategies to mitigate them. The focus on governance and openness of this was paramount, laying the foundations for success. Right from day one, we implemented nudge theory and went with an active opt-in approach, setting the stage for a paradigm shift in inspections.

We undertook a variety of engagement and information sharing.

- Resident surveys pre-use of drones to take a temperature check of feelings and thoughts, incorporating into this information on our approach and nudge theory elements
- Openly publishing our governance and FAQ's and providing a method of contact for any specific queries or concerns (we also have a QR code on our signage when a drone inspect is taking place, which when scanned takes the individual to our privacy policy, governance information and approach and FAQs)
- We shared updates pre and throughout the trial with staff, members and residents
- Our Tenancy Liaison Officers updated social housing residents through their newsletters and pop-in café sessions
- And various hands-on engagement sessions were held inviting people to see and try using the drones themselves
- We have also shared the results of the trial openly with all, through a results report, tenant and members newsletter, blog, social media and interviewed the Chartered Institute of Housing who wanted to support the drive for tech innovation across the housing sector and felt our work was a great initiative to showcase
- Additionally, we have engaged and shared our governance with other Local Authorities who are interested in now undertaking the same initiative

SBC are using a DJI Mini 3 Pro drone: <https://www.dji.com/uk/mini-3-pro>. This falls into the A1 category, C0 class. Our drone has enhanced safety in mind and powerful sensing capabilities. Tri-Directional Obstacle Sensing ensures the drone has forward, backward and downward dual-vision sensors, and the design offers a broader sensing range. The drone also features APAS 4.0 - Advanced Pilot Assistance Systems. This feature detects objects in the drone's flight path in real-time, allowing the drone to avoid obstacles, even in complicated environments. It also has an automated return-to-home feature, which activates when the drone becomes too far from the controller or becomes low on battery and works with FlySafe geofence; a system that prevents flights in unauthorised locations. Drones have played a pivotal role in enhancing transparency and trust. They offer a visual layer of transparency in the inspection process, allowing residents (and interested near bystanders) to witness assessments first-hand. This not only fostered trust in the Council's commitment to their wellbeing but also initiated conversations about technology adoption and urban improvements. The result? A stronger sense of community involvement and shared vision.

The safety of staff and residents was a top priority. With drones, staff members are provided with a safer work environment, significantly reducing the risk of accidents and injuries. The team also gained the ability to identify hazardous materials upfront, mitigating potential dangers and delays that were previously experienced.

Moreover, drones have reduced risk in several other areas; for example, the risk of children climbing scaffolding (it happens), decreased issues associated with property access (especially for older individuals and those with physical disabilities), and reduced risk in property damage.

One of the most significant benefits emerged in the form of workforce happiness, skills acquisition and new opportunities. The staff developed new skillsets and have all qualified as drone operators; this has led to enhanced professional growth, job satisfaction, and motivation - they have a real sense of pride in how they've collaborated and developed with us a modernised approach for their work. Additionally, there's potential for more inclusive employment opportunities where previously working at height would have been prohibitive for some individuals.

Notably, private property owners and local businesses have inquired about the drone service, opening up future income potential for the Council.

The introduction of drones has sparked curiosity and discussions among residents, stimulating interest in technology adoption and urban improvements. In turn, this has fostered a sense of community involvement and collaboration. Residents recognise that drones are contributing to more eco-friendly practices by reducing or eliminating the need for scaffolding and unnecessary additional travel, which aligns with the Council's broader sustainability goals and resonates positively with environmentally conscious residents.

The feedback from tenants has been overwhelmingly positive: 94% positively responded to drones being used for social housing roof inspections. This demonstrates the strong voice and trust of the tenants in the Council's initiative and that the hard work on engagement, transparency in approach, actively seeking opt-in and governance was so important.

The use of drones has revealed fantastic results. We have shortened the average scaffolding hire time by 45%, and there have been no cases where additional work has been required if it was done after a drone inspection, meaning we're achieving those right first-time repairs. In 4% of cases, drones are identifying non-roofing issues, completely avoiding the need for scaffolding and any working from height. A further 4% are identifying hazardous materials, allowing the specialist team to act promptly.

The financial benefits are also substantial: we've seen an annual saving of £80,265.00. And the average inspection time with drones is just 17 minutes, a stark contrast to the previous 64 days. The investment cost was £2,503.27 (for the drone, accessories, signage/PPE, training and certification), meaning our ROI to-date is 3,106.41%.

Drones have now become business as usual for the roofing teams. All teams are fully qualified, with each one having their own drone, ensuring the sustainability and continuity of this initiative.

Additionally, we've now extended our use of drones across the Council, bringing wider business benefits (e.g. for tree inspections, for urban planning, it's also used by our ecologist and our communications team).

This was all made possible thanks to the collaborative efforts of teams from operations to housing, health and safety, audit, web, communications, customer services, and the emerging technology team, along with, all importantly, engaged and supportive tenants and residents. Their collective wisdom, wide range of perspectives and experiences, along with dedication were crucial to the success.

The tangible benefits are evident, and the intangible rewards in terms of safety, trust, empowerment, sustainability, and community engagement are equally, if not more, compelling. This work exemplifies how forward-thinking initiatives and collaboration can transform how we work with and support our communities, residents and town, who are at the heart of all we do.

For further information contact:

Sarah Peña

Head of Emerging Technology, Business Improvement & Web – Swindon Borough Council
emergingtech@swindon.gov.uk | 01793445500 | swindon.gov.uk