

Harnessing the power of drone technology in the social housing sector



- 12-week discovery learning programme
- October 2021 to January 2022
- Free briefing event Monday 22 September

PIN 
Proptech
Innovation
Network

Specialist network delivered by



DINLab in partnership with

CATAPULT
Connected Places



DINLabs 

The Challenge

Drone technology has not yet achieved widespread adoption within the social housing sector, yet this technology can transform the way assets are managed; delivering better value, improved quality data and be more time efficient than traditional methods.

The Connected Places will explore why this technology remains relatively unknown and help understand how and where it can be better used in housing.

Drone technology in other sectors has been shown to;

- reduce costs
- eliminate practices that carry a greater risk (e.g. working at heights, inspecting buildings that are difficult to access)
- increase monitoring and surveying of buildings and estates due to reduced cost leading to cheaper preventative rather than more reactive maintenance
- support delivery of net zero objectives through the use of technology such as thermal imaging



What is a DINLab?

A DINLab is our innovation platform to rapidly test, learn and evaluate new services and solutions with start-ups, early-stage growth, and new market entrants. For many organisations, being able to fully participate in prototyping and proof of concept trials with new products or solutions is not always possible on their own, either due to lack of resources, experience, or financial issues. DINLabs offers you the chance to collaborate as a group of providers to build, test and learn at speed from some of the very best new technologies and organisational design processes.

This DINlab is a collaborative lab with Connected Places Catapult. This is the UK's innovation accelerator for cities, transport and places and is responsible for the **UK Government Drones Pathfinder Catalyst Programme**. This programme is sponsored by the Department for Transport (DfT) and aims to rapidly drive progress in unmanned aviation technology and regulation, enabling industry and the public sector to fully exploit the market in different industry sectors.

Who is this DINLab for?

This Connected Places DINLab is designed for organisations that:

- Want to explore the potential to improve efficiency and cost savings by integrating drones into existing work practices
- Are interested to develop an understanding of how the rich data captured can enhance business decisions and intelligence
- Have the ambition to develop a drone strategy and business case to deploy their use across the portfolio of assets
- Want to learn and share with like-minded providers.

What are drones?

A drone is an unmanned aerial vehicle (UAV). Generally, they are operated by a human pilot remotely. However, in the future drones will be able to operate more autonomously. Drones can carry cameras, sensors and allow the gathering of data from areas that are difficult, dangerous or expensive for humans to get into.

What data can they collect?

Drones can be used to

- Collect thermal imaging and understand where heat loss is taking place and whether solar and photovoltaic panels are maximizing energy production.
- Roof, facade and building surveys through images and high-quality videos – reducing the time taken, the disruption to residents, the risk of working at heights or in inaccessible areas, the saving in scaffolding and the ability to do checks more often and all with greater accuracy.
- Land inspections, new or relet home and development visuals of the properties, curtilage and surrounding area
- Estate Management – including checking street lighting, estate inspections, parking and potentially much more
- Bring a new scheme to life or access existing buildings through 2D drawings and 3D models using drone technology



Impact of drone technology in the housing sector

Case study outcomes

Working in partnership with Yorkshire Housing, Connected Places Catapult has demonstrated how drones can be used for building condition surveys and estate inspections to deliver accurate data, quicker and more cost-effectively than by traditional methods. This confirmed that integrating drones into the business-as-usual operations can deliver savings and increase productivity.

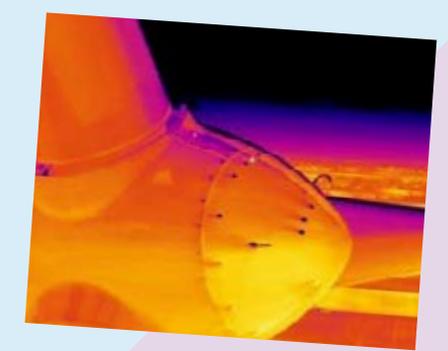
“The demonstration was an amazing showcase of how drone technology can be used when surveying buildings in difficult-to-reach locations. The pilot highlighted how valuable this technology could be for Yorkshire Housing to help us deliver homes and places to be proud of!”

**Darren Williams, Lead Innovator
Yorkshire Housing**



Connected Places Catapult and the Proptech Innovation Network (PIN) has created a DINLab to understand how drone technology can be embedded into the housing sector. The challenge will identify:

- How Housing organisations can best utilise the range of data captured from drones
- Whether drone solutions are preferred over other methodologies (including visual inspections, data captured from ground, vehicle or from satellite)
- The type of building archetypes and geographical locations that are most suitable for drones use
- Other benefits drones can bring such as thermal inspections, estate inspection and street lighting checks from imaging at night
- How drone data capture can be integrated into business as usual
- What IT solutions are required to enable analysis and decision making from the rich data sets captured by drones
- How organisations can procure drone services effectively
- What regulatory requirements need to be met in the flying of drones
- What can be done to address privacy concerns with stakeholders and residents
- How drones can support meeting net zero targets and ensure building compliance



The DINLab process

What solutions is this DINLab looking to test?

This DINLab will be a mixture of demonstrating technology proven across a number of industry sectors and creating a blueprint for what an educated client for drone technology implementation would need.

- How drone technology can be used across housing organisations and what geographical and site locations, archetypes, and stock densities work
- How repair and maintenance needs of a building can be flagged through images and high-quality videos
- The thermal imaging of a building and how it can support the delivery of net zero
- How 2D and 3D images/ models can be used in the organisation
- What an educated client would need to know for procuring drones, meeting regulation and compliance, creating a drone strategy and business case and completing a drone readiness toolkit.

By taking part in the DINLab you will benefit from involvement in the following:

- Drone inspection at a site chosen by you
- 1 building up to 15 stories high (can be low, medium or high rise)
- Assessment of repair and maintenance needs of a building through images and high-quality videos
- The thermal imaging of the building
- Creation of 2D drawings of the building
- Creation of a 3D model of the building
- Interactive workshop following the inspection to share findings with DINLab colleagues to test technology and understand its limitations and understand the key dependencies and estimated scope of use.
- Support Housing Providers to be educated clients through a series of round tables and workshops. These will involve specialists from across the drone sector and will focus on
 - o **Managing change** – This round table session will explore which stakeholders internally and externally, would need to be involved to enable buy-in and change

- o **How drones can best fit into the existing operating processes** – Connected Places Catapult will introduce the Drone Readiness Toolkit in the workshop and look at how the rich data gathered using the drones is best incorporated into the organisation IT and decision making
- o **Understanding drone technology and procurement** – this workshop run by Procurement for Housing will look at the procurement options available and what needs to be considered when procuring a service.
- o **Understanding regulation and compliance** including records that organisations need to keep, insurance licensing and protecting and engaging residents and the public. Supported by the UK's Civil Aviation Authority, ARPAS-UK (the drone industry association), Connected Places Catapult, Vantage UAV and Yorkshire Housing
- o **Business case & drone strategy** – In this last workshop Connected Places Catapult will reflect on the previous workshops, support organisations to complete their drone readiness toolkit and provide good practice hints and tips from other sectors in creating a drone strategy and business case.

For housing providers taking part

What we need from you

We are looking for up to five organisations to take part in this DINLab over 12 weeks.

You will need to identify a minimum of one building (up to a maximum of three) up to 15 stories high for drone inspection demonstration(s) to be carried out on. The building(s) can be low or high rise.

Resources required

- **Executive sponsorship** - At a CEO or Executive Director level through attendance at a one-hour kick-off meeting and participation in the close-out meeting
- **Operational Lead** – This could be your Innovation Team, Head of Planned Maintenance, Strategic Asset Management etc. They will act as your lead for coordination and oversight of the Connected Places- DINLab. 1-3 hours a week.
- **Operational Team** – Access to stakeholders (procurement, residents, maintenance services, planned maintenance, sustainability, Head of IT, Data governance, compliance team etc.) who could benefit from the data.

Outcomes

By taking part in the DINLab, you will benefit from:

- Sector thought leadership to feed into **UK Government Drones Pathfinder Catalyst Programme**.
- For your identified building
 - Assessment of repair and maintenance needs of a building through images and high-quality videos
 - The Thermal imaging of the building
 - Creation of 2D drawings of the building
 - Creation of a 3D model of the building
- Understanding where and how drones can add value to your organisation
- Framework to create a Drone Strategy and Business case
- Participation in sector procurement solution for drone technology
- Understand how drones can integrate into existing workflows
- Framework for stakeholder engagement
- Mitigation plan to support the management of drone compliance and potential risks.



Meet theDINLab team



DINLab Director

Jenny Danson, DIN Associate and Network Director for PIN

Jenny coordinates DIN's specialist networks PIN (Proptech Innovation Network) and IAN (Intelligent Automation). She will be the main point of contact for this DINLab. She had led transformational change and service improvement programmes for over 25 years in CEO, COO, Executive and Program roles in a number of Housing Association's, Councils, ALMOs and companies including Lovell, Ilke Homes, Fortem, BAA plc, Boots Opticians, and ISS Mediclean.



Connected Places Catapult

Howie Chau - Systems Engineer at Connected Places Catapult

Howie Chau is a Systems Engineer working at Connected Places Catapult, a UK national centre of excellence for new technology in placemaking, transport and mobility. Howie led a housing-sector engagement workstream within the UK's Pathfinder Catalyst Programme, aiming to drive drone adoption, and he will now support the DINLab by feeding in learnings from the programme and providing a networking link into the Catapult and its partners.

Howie has worked across the private and public sectors in intelligent transport systems, drone technologies and connected and autonomous vehicles trials.

The DINLab will also include workshops hosted by

Understand regulation and compliance

Stephen Burrough, Innovations Services Specialist, Civil Aviation Authority.

Understand regulation and compliance

Protecting drones and the public.

Graham Brown, CEO, ARPAS-UK

Understanding Drone Technology & Procurement

Jane Brighthouse, Procurement Excellence & Compliance Manager, Procurement for Housing

Rachel Knowles, Senior Buyer for Responsive Repairs, Procurement for Housing

Protecting drones and the public.

Richard Scriven, Co-Founder and Managing Director, Vantage UAV
Tony Moore, Commercial Manager, Vantage UAV

About Connected Places Catapult

Connected Places Catapult is the UK innovation accelerator for cities, transport, and places.

Connected Places Catapult connects innovation-hungry industry asset owners and local government place leaders with carefully selected innovation-rich SMEs and academic partners to spark new partnerships and accelerate commercial success. Specifically, we:

- Provide impartial 'innovation as a service' for public bodies, businesses, and infrastructure providers to catalyse step-change improvements in the way people live, work and travel.
- Connect businesses and public sector leaders to cutting-edge research to spark innovation and grow new markets.
- Run technology demonstrators and SME accelerators to scale new solutions that drive growth, spread prosperity, and eliminate carbon.

<https://www.linkedin.com/company/cpcatapult>

<https://twitter.com/cpcatapult>



About PIN

The membership network for social housing organisations and leaders investing in proptech.

We offer housing providers an opportunity to experience, learn and share the latest developments from the world of proptech so that they understand what technologies and ways of working are truly innovative and add value to their approach to delivering repairs services and asset management.

PIN is for anyone working in the development, repairs & maintenance or asset management space interested or responsible for business transformation and innovation will benefit from membership.

PIN is a specialist DIN Network. The Disruptive Innovators Network has a passion for doing things differently. By capturing the best insights and knowledge from all sectors, embracing disruption and innovation we inspire social housing organisations in their transformation journey.

For more info about DIN and PIN

www.disruptiveinnovatorsnetwork.co.uk

<https://www.linkedin.com/company/disruptive>



Timescales

Monday 20th September 2021 15.00-16.00hrs

DINLab Briefing event

To book your space at this free to attend event [click here](#)

Expressions of interest needed by Friday 1st October 2021

DINLab to start week commencing Monday 18th October 2021 and conclude at the end of January 2022

Participation fee

- **PIN Members** £7,750 plus VAT per organisation
- **Non Members** £9,750 plus VAT per organisation

For more information or to register your interest in this DINLab please contact Jenny Danson, DIN Associate and PIN Network Director at: jenny.danson@disruptiveinnovatorsnetwork.co.uk or telephone **07733 323 748**.



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