London City Airport
Get closer

NATS

Digital towers land in the UK

London City Airport leads a technological revolution in airport air traffic management.

Current Situation – The Tower Building

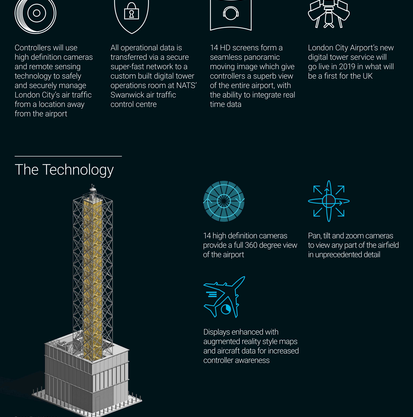
Traditionally every airport has a conventional air traffic control tower. Air traffic controllers in the tower are responsible for ensuring that aircraft can take off, land, and move around the airfield safely and efficiently

1987

At London City Airport, its existing tower came into use in 1987, when the airport opened. It is now approaching the end of its operational lifespan

A Digital Alternative

London City Airport, with the support of NATS, is embracing the exciting, innovative, proven technology of a digital air traffic control tower.



Controllers will use high definition cameras and remote sensing technology to safely and securely manage London City's air traffic from a location away from the airport

All operational data is transferred via a secure super-fast network to a custom built digital tower operations room at NATS' Swanwick air traffic control centre

14 HD screens form a seamless panoramic moving image which give controllers a superb view of the entire airport, with the ability to integrate real time data

London City Airport's new digital tower service will go live in 2019 in what will be a first for the UK

The Technology

Pascall + Watson

14 high definition cameras provide a full 360 degree view of the airport

Pan, tilt and zoom cameras to view any part of the airfield in unprecedented detail

Displays enhanced with augmented reality style maps and aircraft data for increased controller awareness

London City Digital Tower Factoids

The sway tolerance at the top of the mast is just 0.1 degrees or else the image 'wobbles' and may even cause motion sickness!

The mast uses 'air knives' to clean insects, debris or weather off the camera lenses and the glass will be manually cleaned once a month

At 50m tall the mast itself will be the 4th highest ATC tower in the UK, behind Heathrow, Manchester and Stansted

The pan/tilt/zoom cameras will have a 30x zoom for closer inspection of the airfield including the 1500m runway

Benefits

For the Airport

- Enhances the efficiency and safety of operations
- As the airport begins a £350m development programme, another step towards creating a future airport
- Potential for more flexible staffing for control services
- Less disruptive to operations and passengers than building and maintaining a 'bricks and mortar' control tower
- Camera feed can be shared with the rest of the airport operation - from terminal staff to the fire service
- The system can track objects large and small, down to the size of 4 pixels on the screen, including drones

For Air traffic Controllers

- Every controller has an identical view to the entire airport for increased situational awareness
- Radar and weather data shown on a single Head-Up Display
- Aircraft call signs displayed over aircraft as they move on screen for extra clarity
- On-screen labels can be added to show taxiway boundaries
- Airfield can be geofenced to show operational restrictions such as closed taxiways

Tried, Tested, and Trusted

NATS has partnered with SAAB, one of the pioneers of the digital tower concept

Digital tower trials are underway all over the world. Norway is installing 15 digital towers

The world's first digital tower went live in Örnsköldsvik, Sweden, in April 2015, linking to a control centre 150kms away in Sundsvall.

Mitigating Risks

The system is designed to be resilient and complies with cyber security best practice for protecting critical national infrastructure.

What if a camera fails?

- Other cameras like the pan/tilt/zoom cameras can compensate and fill gaps
- It would be no different to the low visibility (bad weather) procedures used today

What if the communications link fails?

- There are two totally separate and independent data feeds running that enter at different parts of the building
- Both feeds can carry image and voice communications data
- A third feed can also carry communications if required

Digital towers: the future is here. To keep up to date with the latest news subscribe and follow NATS on social media

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