

CEL-FI Covers Leading Food Retailer's Distribution Center

Case Study / Warehouses & Industrial

Case Study courtesy of Pan RF, Crownhill, England



Summary

Challenges

One of the UK's leading food retailers opening a new 70,000m² Regional Distribution Centre in Peterborough. Building materials blocked penetration of cellular signals. Challenging cable routes due to high level cable tray above suspended ceiling and fire-stopped partitioning along across installation routes. Needed coverage issues resolved prior to becoming operational in August 2020.

Solution

CEL-FI QUATRA (3 Network Units and 9 Coverage Units)

Results

Immediate results in improvement to voice calls and data services within 3rd floor offices and ground floor goods out areas. Legally compliant, cost-effective solution that was deployed in a very short timescale. Improvement reported by end users.

Challenge

One of the fastest growing supermarket brands in the UK was building a new 70,000m² Regional Distribution Centre in Peterborough. Like other modern warehouse structures the metal clad building acts as a Faraday Cage to mobile signals. The building itself has a single level office on the 3rd floor of the building, consisting of administrative areas, meeting rooms, training rooms and a canteen. The goods out area protrudes from the main building and comprises an office space and driver check-in desks on the ground floor.

All existing cable tray was located at high level above suspended ceiling throughout, making cable installation challenging in many areas. There were also a number of fire-stopped partitions that needed penetrating, which posed another challenge. Due to the Grenfell disaster aftermath and new regulations, it was important that all of these penetrations were identified so that they could be re fire-stopped by an accredited company to ensure they complied with the new regulations.

It was crucial that continuous, stable, mobile connectivity was present prior to the site becoming operational in August 2020 as many of the tasks undertaken by staff rely on voice and data services due to a limited number of desk phones. Staff often take calls on their work mobiles in the main offices and move into meeting rooms to continue the calls. Unreliable cellular service can be disruptive as it results in staff having to leave their work areas to find signal near a window. It also results in numerous dropped calls, which reduces productivity.

Solution

Pan RF visited the site and conducted a Live Coverage Test (LCT) survey to establish the current level of EE mobile coverage internally and externally at the site. The outcome of the survey confirmed that there was limited useable EE mobile coverage penetrating the building in the 3rd Floor Offices and Goods Out areas, which were the areas highlighted as being within scope by the customer.

Following the survey, a full report was produced where a Nextivity **CEL-FI QUATRA** Solution was proposed to provide voice and data services on the EE network. The benefit of deploying a Nextivity CEL-FI QUATRA is that there is no need for the customer to seek approval from EE as it is licence-exempt. The other benefit of this solution is that it is very cost-effective and can be deployed in a very short timescale.

Following approval of the proposal, an RF design was carried out using the iBwave Radio Propagation planning tool. Coverage predictions defined the number and location of the active antenna Coverage Units (CUs) and how many Network Units (NUs) would be required. External EE coverage is to be picked up on the MIMO donor antenna mounted at the highest point of the roof, ensuring clear line of site to the nearest EE macro site. Coaxial cabling then feeds the Cel- Fi Quatra NUs which amplify the signal before distributing the coverage via CAT- 6A cabling to the CEL-FI Quatra CUs.

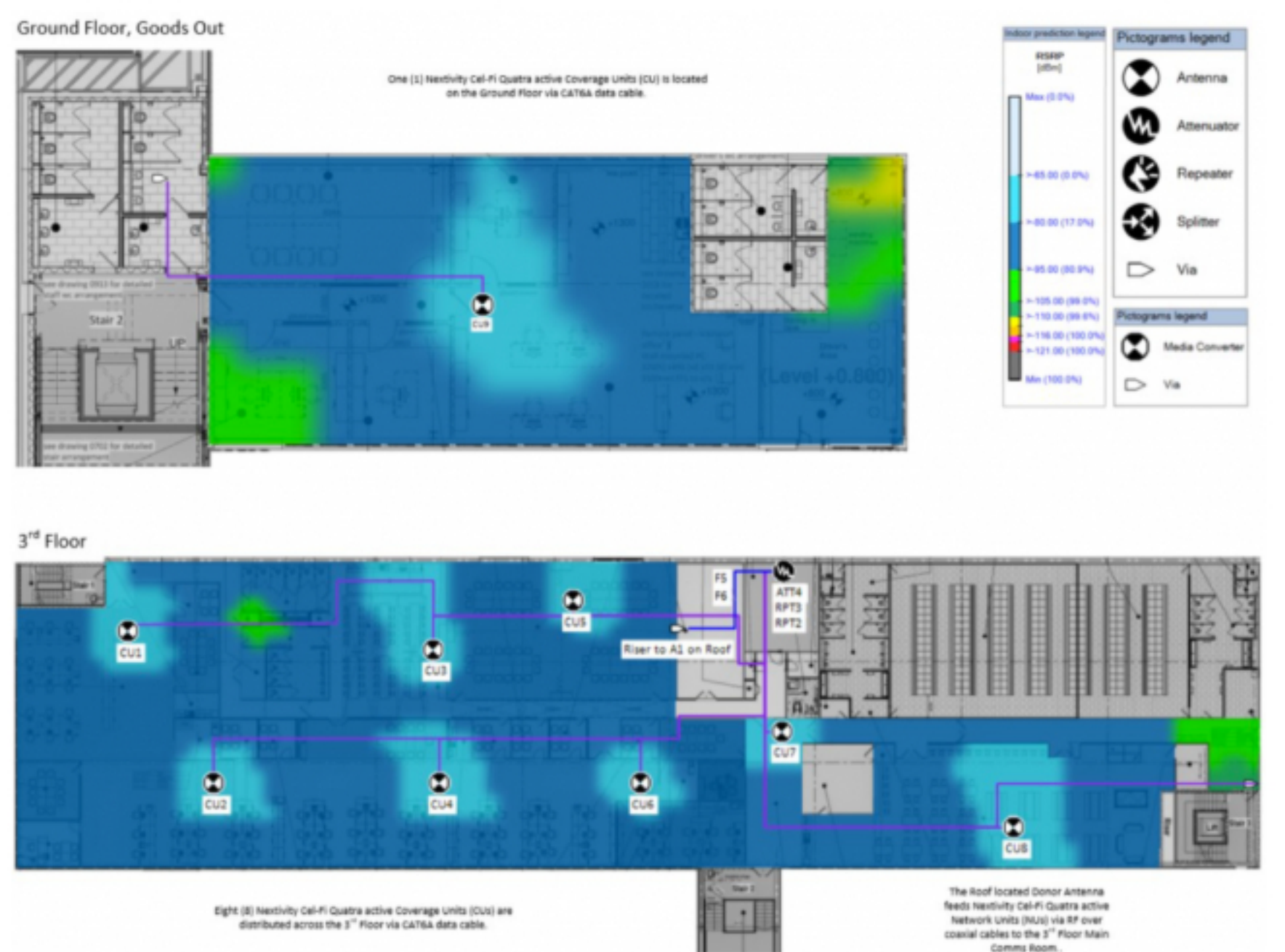
Following installation of the system, the CEL-FI QUATRA Solution was commissioned using the **CEL-FI Wave Portal**. Speed tests and walk tests were carried out using TEMs pocket software to provide further evidence of the improvement of coverage levels within the 3rd Floor Office and Ground Floor Goods Out areas.



Results

Before the CEL-FI QUATRA solution was deployed, very poor user experience was reported, with calls not connecting or often dropped once connected. There was also very poor data service, with both download and upload speeds particularly bad.

After the CEL-FI QUATRA solution was deployed, excellent user experience was reported. Calls were received and initiated without any issues and cellular data performance significantly outperformed the existing Wi-Fi and other Carrier/MNOs, improving day to day productivity.



Case Study courtesy of

Pan RF

- Designs and deploys in-building public cellular mobile connectivity and private mobile radio (PMR) coverage solutions
- Provides seamless coverage business demands, offering network solutions to support IoT
- Delivers bespoke coverage solutions to clients across a wide range of sectors, designing and integrating distributed antenna systems (DAS) tailored to clients' specific requirements