



# ASTON MARTIN

## **Network Installation Solutions Ltd:** **Aston Martin Ltd – New St Athan Site Fit Out**

### **Site Address:**

Aston Martin Limited, St Athan, Wales, CF62 4WB.

### **About the Site:**

NIS Ltd first secured a contract late 2017 / start of 2018 through a highly competitive tender exercise to undertake the complete data cabinet, fibre optic and copper installation works at Aston Martin Lagonda's newly acquired factory at the former RAF site in St Athan, Wales.

Aston Martin announced that their new factory to build its DBX crossover model would be located on the airfield at St Athan. Construction of the 90-acre site would commence in 2017, with a total investment of £280 million and the creation of 750 jobs. The factory incorporated the Project Red Dragon super-hangar which had cost the British taxpayer 113m. The U.S. state of Alabama, along with two UK sites and a Middle Eastern location, had been on Aston Martin's shortlist for the factory.

The factory itself consists of 4 x individual 'super' hangars at over 20m height, with a number of Annexe Offices.

### **About the Project:**

Aston Martin had a requirement to fit out the new factory with an entirely new cabling infrastructure.

The project had to be designed from the starting point of a shell of a building and required a significant amount of research. This would consist of the survey of the entire site in order to base the cabinets at suitable locations that could not impede the working line locations and the robots used upon site.

NIS mapped out the whole site and strategically placed all cabinet locations within cable guidelines and parameters, we then designed a pillar system that would protect the cabinet installation and then further designed a bespoke containment system on a number of large functional operational lines.

It was ultimately determined that the project would need to be undertaken in phases. The phased project would include.

- The installation of over 2000 CAT6 data outlets throughout the Hangar and Office locations
- The installation of 30 x 47U data cabinets throughout the hangars to complement the 6 x existing cabinets in addition to the two main 'MER' and 'SER' Server Rooms.
- The supply and installation of diversely routed 12 core singlemode fibre from each of the MER and SER Rooms to all 30 x data cabinet locations
- The use of high-level access equipment for the majority of the project works
- The provision of all testing, labelling and project sign off documentation

Since the initial project, the site is subject to constant adds moves and changes, with now over 36 cabinet locations as a simple example of this continuous expansion.

### **Ubisense Rollout:**

Aston Martin, world renowned for performance and precision engineering, had a requirement to achieve complete, automated and adaptable monitoring of their offline production process, turning away from its previously out of date and error prone paper and spreadsheet-based reporting system.

In order to achieve this, a Real-Time Location System (RTLS) was proposed in order to enhance the controls of the rigorous offline finishing processes.

The project would include the installation and testing of new third party provided RFID sensors and the complete NIS provided installation of new backbone structured data cabling to specific locations throughout the entire factory.

Asset tags are attached to each car as they begin the testing and finishing stages. From that moment on, the sensors allow production engineers to monitor each Aston Martin in real-time as it progresses through the facility, with alerts if a car deviates from a normal or planned progression.

From inspection through to repair and rework, analysis and optimization of each process step needed to ensure production efficiency is always maintained. Therefore, the design and the final deployment positions of each individual sensor, ensuring every relevant area was 100% covered, was critical to the successful delivery of the project.

Structured cabling lengths to the relevant data cabinet locations had to be within the manufacturer performance parameters and therefore the design of cabling routes was equally critical. A failure to performance to the cabling standards would have resulted in a failure of the devices.

The RFID sensors were to be mounted at high level and as such there was uncertainty whether the mounted angles of the sensors would impact the performance and/or lead to a failure of the devices to function correctly.

NIS Ltd undertook a full site wide design survey in conjunction with both the client and the sensor manufacturers to implement a full solution which would meet the clients' technological requirements.

The design included determining.

- The amount and locations of all sensors required for a full solution
- The height in which the sensor needed to be installed

- The Yaw and Pitch angles in which the sensors needed to be mounted at
- The determining of all associated cabling routes to ensure cables remained within manufacturer performance parameters

Prior to the full site-wide deployment, a number of test units had been installed across the site based upon the design plan in order to verify that the design would work successfully. This included the use of software which would enable the installation engineers to confirm the exact heights and angles of the installed sensors. This solution would allow for the post-installation testing of all sensors site wide.

As part of the project NIS were required to install much of the new metal conduit and tray work. Further, as per the request of AML, the CAT6 cabling would deviate from the Orange outer sheath utilised on all standard data installations, and an alternative Violet colour was instead used in order to differentiate the Ubisense project from standard cabling installations.

Upon completion, NIS provided cabled and mounted over 220 x Sensors throughout the site, in a project ultimately valued in excess of £100K.

### Client Feedback:

Following a recent attendance the AML IT representative stated.

*“Morning all,*

*Just wanted to say thanks to the Engineers this weekend, all the work completed in a timely manner. They are always professional and hardworking, such a credit to the company.*

*Many thanks to Ben for organising all the Permits and quotes also for me.*

*Kind regards”*

