

# AN EDIS CASE STUDY

## ELECTRICAL INSPECTION AND TESTING OF A LARGE COMPLEX OF BUILDINGS

### BACKGROUND TO THE CASE STUDY

A large building complex needed to confirm the safety and integrity of its electrical infrastructure. In order to do this an electrical inspection and testing project was initiated. The project was required in order to comply with the Electricity at Work Regulations.

As well as complying with the required electrical regulations a successful outcome of the project would also ensure that the risk of fire due to electrical failure, injury due to electrical shock and electrical system failure would be prevented and better managed. The size of the project presented several issues and concerns for the team managing the work.

### THE ISSUES AND CONCERNS

The electrical infrastructure had not been comprehensively tested in the past 10 years and numerous changes and additions had been done to the infrastructure. The records and drawings of the changes were not all consistently filed. The result of the mis-filing of paper copies was that records and drawings were not always complete; where the records were available the integrity of the information was doubtful. One of the challenges for the project was to ensure that accurate record would be in place after completion of the project; ideally this record would be easy to maintain as new changes and additions would be ongoing.

The project was considered to be “large”: there were an estimated 2,000 distribution boards with potentially 40,000 circuits that required testing. The whole electrical system could not be switched off and where it was possible to switch off, power could only be interrupted for a limited time. This inflexibility required a flexible work packages. A system to manage and control this potentially piecemeal approach was required in order to control the work.

Due to the scale of the work (circa £3m) careful quality and cost control processes would be required. In order to monitor the work packages a flexible but accurate record keeping system was needed to ensure quantity and cost of work was accurately recorded

The volume of records required that any system should be multi user and capable of handling the large volume of data that the testing would generate. Data entry and review also needed to be effective and efficient.

During the project normal business operations would continue – the project manager would need to ensure that these works would not be re-tested. Any business as usual work would need to be visible to the contractor and project manager. The system needed to provide visibility of all the work in progress.

Multiple contractors on differing rates were to be selected for the work – the system needed to facilitate the valuation of the work done by the various contractors.

### THE SOLUTION

In order to meet the project’s requirements EDIS a cloud-based, multi-user system electrical inspection and testing system was selected. The system allowed multiple contractors to enter test results and complete electrical test certificates and allowed the project manager to monitor the status of the resulting certificates.

On completion of a certificate, the contractor could generate a pdf file of the certificate, associated board schedules and records would be available for future re-use.

The end result of using the system allowed authorized users to access:

- Completed and signed certificates PDF certificates stored in the central repository
- An accurate database register of all distribution boards and circuit charts
- A repository for electrical schematics



- An accurate record of last test date/next test date report enabling future planning
- All the data would be available in an Excel downloadable format, for valuation, analysis and future planning

#### THE OUTCOME AND BENEFITS

On completion of the work 68 certificates consisting of approximately 50,000 pages were created. Since the entire process was electronic a significant printing and filing saving was achieved.

- All the work completed could be downloaded into Excel spreadsheets and rates could be applied to the each test. This provided a consistency check for accurate valuation of the work ensuring value and cost assurance of the project. Access to a consistently formatted set of test results allows cost assessors to easily analyse costs and efficient cost assurance saving time and money.
- Ongoing minor works and new installations continued to use the EDIS system providing an automated update of the electrical records. Because the data was stored in a database it could be conveniently re-used and any future certificates would automatically update the distribution board schedules, and test/next test dates as well as store the new certificates in the certificate repository – facilitating a virtuous cycle of accurate record keeping.
- EDIS provided information on what had and had not been done. This enabled improved planning and control of further electrical testing programme.
- The electrical testing work that had been completed could be viewed on screen or downloaded into a spreadsheet and reviewed by any authorized user – auditability improved contractor performance.
- EDIS provided accessibility the web based system was available to engineers, service partners and sub-contractors; providing easy access to the right users improved productivity.
- EDIS reduced paper, CD's, filing and storage by securely storing the electrical data and all information in an easily downloaded format. The net result was less filing, less paper, less wasted space, cost savings, risk reduction, and easier access to all electrical data by appropriately authorized persons.
- EDIS enabled an efficient and consistent process is followed for completing electrical test results; the consistent process improved efficiency.

The EDIS system ultimately improving health and safety data management. It provided easy access to and storage of electrical certificates protecting management from possible corporate litigation due to workplace injuries by ensuring the required records are updated and maintained.

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