Schneider Electric
Projects & Services

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Schneider Electric

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Schneider Electric
Projects & Services

Delivering tailored solutions for your business

Schneider Electric

Projects & Services delivered a secure power solution to an investment bank in Canary Wharf

Schneider Electric Projects & Services has brought together all its capabilities into one unique offer

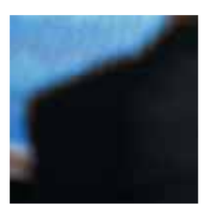
Introduction

Schneider Electric has established an enviable reputation as a world and UK leader in electrical distribution and automation systems.

Schneider Electric's expertise is founded on the skills of its experienced workforce and its 3 global brands - Merlin Gerin, Square D and Telemecanique, accumulating over 100 years of experience in the electrical industry.

With operations in 130 countries and a sales turnover in excess of £7 billion, Schneider Electric has the scope to recognise and adapt to the ever-changing needs of its customers.

Schneider Electric regards its customers as commercial partners; experts in their business who demand the highest standards of excellence in terms of products, projects and services.



Projects & Services developed a reliable network for Jaguar, which was easy to integrate, control and upgrade

We provide solutions enabling you to reduce the total cost and lifetime ownership risk of your electrical distribution and automation systems, whilst fulfiling your ongoing quality, safety and environmental obligations

Projects & Services strengths and expertise

Worldwide knowledge and experience

Choose to work with Schneider Electric Projects & Services and you choose a partner with unrivalled expertise in electrical distribution and automation systems. Our knowledge, experience and hands-on approach comes from being at the core of a major equipment manufacturer. We can help you derive the maximum benefit from your electrical installation, with experience in:

- High voltage to low voltage power distribution
- Electrical network supervision and control
- Industrial automation and process control
- Building and energy management system design

Delivering tailored solutions

Our aim is to work with you to understand your needs and offer individually tailored solutions, allowing you to focus on your core business. As one of the world's largest and most successful electrical technology groups, we are able to provide a complete electrical turnkey package, encompassing the design and supply of equipment, through installation and commissioning, to operation and training. We bring together products and services from Schneider Electric and third party strategic partners to provide the best possible solution.

Building long-term partnerships

We recognise that a productive partnership approach helps to maximise your overall investments. We believe in building long-term relationships that encompass shared risks and rewards.

Innovation

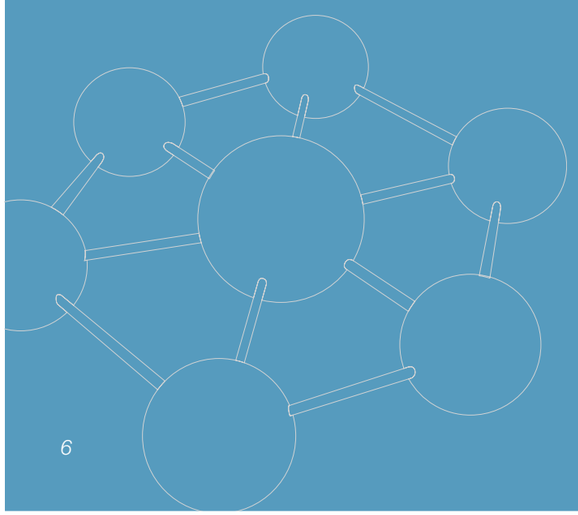
Schneider Electric is renowned for its willingness to challenge established practices and provide innovative approaches to projects. We harness the latest technology to deliver benefits that may not have previously been achieved.

Our commitment

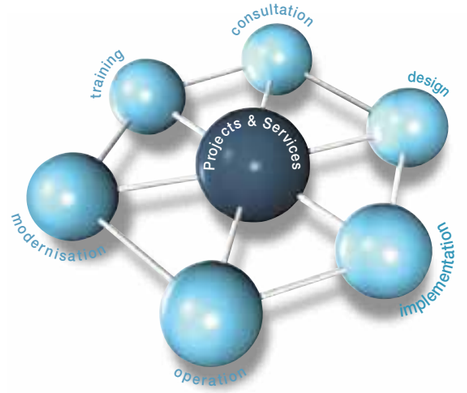
Our involvement need not end at project handover. We can continue to provide full support throughout the lifecycle of your installation, helping to ensure that it remains reliable, efficient and cost-effective.

Projects & Services have successfully delivered projects across a wide spectrum of businesses

• Airports • Automotive • Banking and Finance • Central and Local Government • Data centres • Education • Electrical distribution industry • Food and Beverages • Health • MoD (Defence Estates) • Oil and Gas • Packaging • Pharmaceutical • Rail • Retail complexes and distributions • Telecommunication centres • Water and Sewage • Airports • Automotive • Banking and Finance • Central and Local Government • Data centres • Education • Electrical distribution industry • Food and Beverages • Health • MoD (Defence Estates) • Oil and Gas • Packaging • Pharmaceutical • Rail • Retail complexes and distributions • Telecommunication centres • Water and Sewage • Airports • Automotive • Banking and Finance • Central and Local Government • Data centres • AMEC • Amey • Balfour Kilpatrick • Cegelec • Haden Young • Laing • Mowlem • NG Bailey • Seeboard • Serco • WS Atkins • B&Q • BMW • BP • British Aluminium • BT • Cadbury • Ford • Global Switch • Jaguar Cars • John Lewis • Masterfoods • MoD (Defence Estates) • Motorola • Orange • MG Rover • Royal Bank of Scotland • Heathrow Airport Terminal 5 • Experian • Scottish Power • Seeboard • T-Mobile • Unilever • Woolworths • Scottish Power • AMEC • Amey • Balfour Kilpatrick • Cegelec • Haden Young • Laing • Mowlem • NG Bailey • Seeboard • Serco • WS Atkins • B&Q • BMW • BP • British Aluminium • BT • Cadbury • Ford • Global Switch • Jaguar Cars • John Lewis • Masterfoods • MoD (Defence Estates) • Motorola • Orange • MG Rover •



Projects & Services portfolio



Choice of services

Our services aim to add value to each project phase, but the choice of services you use is entirely yours. You may want a full set of services that together provide a package of support covering the entire life cycle of your project, or you can select a combination of services to complement your resource or knowledge.

If you need assistance with the project definition, our consultation services will help you to define the parameters of your solution.

Consultation

These services provide you with an assured way to roadmap your project. We take your ideas and requirements and apply our wide range of application experience and technical competence to produce conceptual designs and indicative costings.

Design

Using the analysis from the consultation phase or information that you may provide, the design phase selects the most suitable equipment and provides detailed drawings and technical specifications.

Implementation

This is often the most time-pressured stage of a project when schedules demand fast implementation. These services provide high quality installation and commissioning, preceded by thorough preparation minimising the risk of unplanned delays and extra costs as well as maintaining optimum site safety.

Operation

Efficient operation is vital to derive the best value from your investment. These services ensure that your installation's running costs are reduced through higher energy operational efficiency and are cost-effectively maintained with minimum downtime.

Modernisation

Faulty or ageing equipment can be upgraded to extend an installation's life through retrofits, refurbishment or repairs.

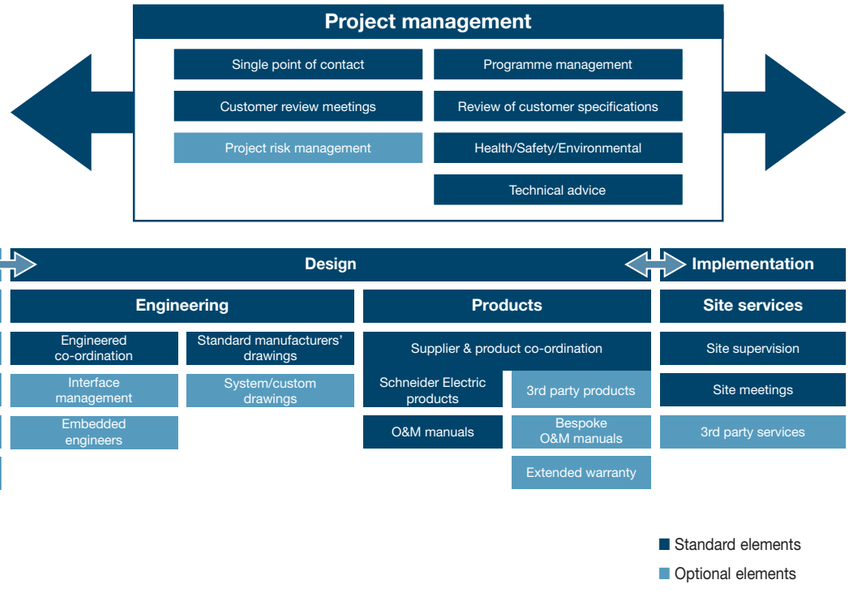
Training

A wide range of training services are available including product standards and legislation. Each is regularly updated to stay current with the latest technology. Training can be delivered at a Schneider Electric training facility or at a customer's own site.

Project elements explained

Projects & Services project elements

The successful delivery of your project will depend on a well defined plan at the outset. Your project may encompass our **Consultation, Design** and **Implementation** phases, each containing standard and optional elements which will vary depending on your project's specific requirements. These clearly defined elements enable you to roadmap your project, avoiding unplanned expenditure and unnecessary delays, thereby reducing the overall project cost.



How we deliver your project smoothly

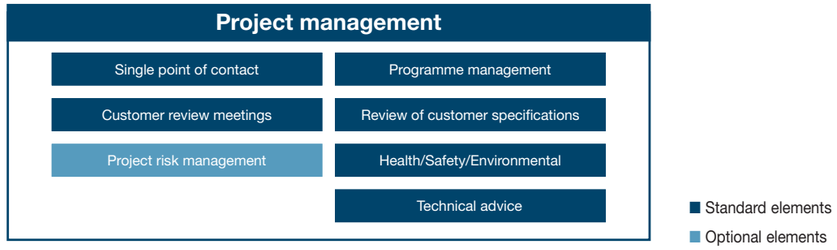
The diagram above illustrates the typical elements required to deliver and implement your project. These elements ensure a smooth, timely, co-ordinated manufacture, delivery and implementation of your solution. If you need assistance with the project definition, our consultation services will help you define the parameters of your solution.

If your requirements are outside the scope of the project elements outlined above then our Projects & Services customer centre will be pleased to discuss your needs.

Project management

On receipt of your order, a Project Manager will be assigned, providing you with a single point of contact, with full responsibility for the execution of your order. This includes all technical and commercial matters and ranges from order acceptance to project handover (see Project Charter, page 13). Our registration to ISO 9001:2000 is your assurance that quality will be maintained from start to finish.

Integral elements include:



Standard elements

- **Single point of contact** for both enquiries and orders reduces your time and efforts in chasing and coordinating product, suppliers, specifications, purchase orders and delivery schedules. All commercial and technical details of your offer are provided in a comprehensive package.
- **Review of customer specifications** entails carefully reviewing all of your requirements and specifications to ensure technical compliance and compatibility with the proposed solution.
- **Programme management** is crucial to the success of your project. Here, the project's key elements will be broken down into critical tasks and operations enabling us to set priorities, optimise time, resource and manage any potential project risks.
- **Technical advice** can be sought from one point of contact for technical issues, providing access to a team of technical product and services experts.
- **Customer review meetings** will report, discuss and clarify the progress of the project, minimising any risk of delays.
- **Health / Safety / Environmental** issues are taken seriously. Our project implementation will include comprehensive health and safety planning, which incorporates measures and procedures to ensure safe working conditions. These procedures ensure full compliance with the Schneider Electric Ltd corporate Health & Safety Policy Statement and its legal obligations under Health & Safety legislation. All Schneider Electric product sites in the UK are certified to the Environmental Standard, ISO14001.

Optional element

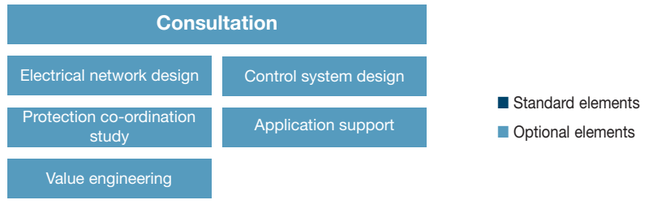
- **Project risk management** can be used to eliminate some risk and to recognise and manage other risks across your project ensuring you achieve the optimum outcome and derive the best value from your investment.

Project elements explained

Consultation

Our consultancy team has many years experience advising and working with architects, consultants, facility managers, contractors, hospitals, manufacturers, retailers and many more. Our customers have benefited from our recommendations, achieving the most efficient solution from the outset thus avoiding unnecessary time delays and unplanned costs.

Integral elements include:



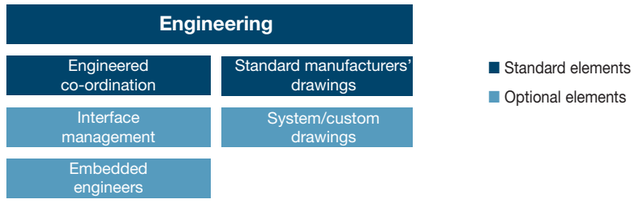
Optional elements

- **Electrical network design** can be provided, for example to review your network's specific loads (types of motors, essential and non-essential supplies, etc.). Our team would initially obtain a clear understanding of your requirements before proposing a number of options to suit your application and circumstances. Once a design has been agreed, we will then produce scheme designs, schematic diagrams and general arrangement drawings along with a full product and services specification.
- **Protection co-ordination study** will identify the optimum protection settings to ensure that your personnel and electrical network are properly protected and supply availability is maximised. This could include settings for new equipment or checking the level of discrimination on an existing system. On completion of the study, a comprehensive report is generated highlighting your optimum protection settings (line diagrams, device settings tables, time-current characteristics etc.) with recommended improvement actions.
- **Control system design** enables us to offer systems from basic monitoring of electrical parameters and energy use or a generator changeover scheme to full SCADA systems incorporating remote control, sophisticated system analysis tools and automatic supply restoration. Our engineers can design, specify and implement such systems incorporating the latest technologies and hardware, including web-enabled facilities, to ensure the most effective system, whilst minimising life cycle costs.
- **Application support** can be given to review your current system specification and existing operating conditions. We will produce the best possible cost-effective standard or bespoke solution for your system, which could include functional designs, schematic diagrams and technical support during testing and commissioning.
- **Value engineering** is a review of your solution to look for any opportunities to improve cost and system efficiencies and ensure you derive the maximum benefit from your investment.

Engineering

Our experienced engineers can help you define the optimum solution for your electrical network needs, whether these are related to supply availability, operational issues, capital or running costs. We can examine your existing network and recommend improvements; give advice on extension and upgrading; or help you plan a whole new scheme.

Integral elements include:



Standard elements

- **Engineered co-ordination** of Schneider Electric equipment where some form of specialist engineering, design, adaptation or assembly needs to be actioned to ensure the equipment is completely compatible and compliant with your specifications.
- **Standard manufacturers' drawings** of the equipment will be provided, including equipment general arrangements and schematics (where appropriate).

Optional elements

- **System/custom drawings** can be provided, including plant layout, interconnection diagrams, control schematics and all drawings to project specific formats.
- **Interface management** enables us to support the design interfaces between our equipment and that from your other suppliers e.g. generator to switchboard control interface.

We can help you ensure a smooth site installation and commissioning as well as a comprehensive combined testing programme to demonstrate robustness of the overall system.

- **Embedded engineers** can be based at your site to offer a range of support within your project team, from design through to implementation, complementing your resource and knowledge. We are experienced in collaborative working and supplying engineers to work within our customers' teams and with their other suppliers. This ensures interfaces are defined and managed, designs are well-planned and co-ordinated and resources are optimised within the project requirements.

Project elements explained

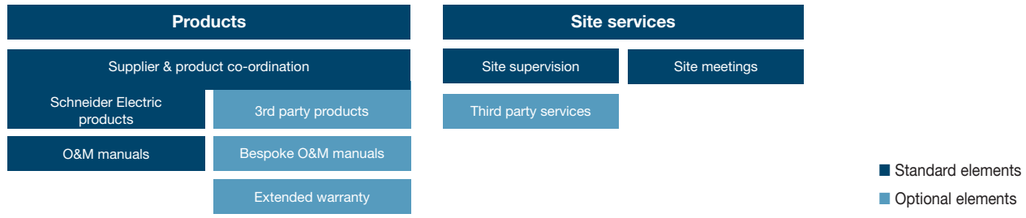
Products

Schneider Electric is renowned as a technologically advanced manufacturer, which has given us an enviable position as market leader for many of our products. Our team of product experts with their vast knowledge and hands-on approach with Schneider Electric and other suppliers' products ensure the optimum efficiencies are gained from the products.

Site services

Our team of site technicians and engineers can provide support with all aspects of our equipment, including offloading and craneage; site installation, testing and commissioning.
On completion, you will receive fully documented records of the testing carried out to demonstrate the safe condition of your system.

Integral elements include:



Standard elements

- **Supplier and product co-ordination** is key when sourcing from several product activities (third party products are an option and would be used if required). This demands effective co-ordination and logistics to manage the technical and commercial issues, manufacturing lead-times and delivery.
- **Operational and maintenance** (O&M) manuals, giving full operational details of our equipment and systems to enable safe installation, operation and maintenance.

Optional elements

- **Bespoke O&M manuals** as above but to meet the project specific standards and requirements.
- **Extended warranty** option is for all Schneider Electric capital plant equipment, subject to agreement and providing it is purchased before your standard product warranty expires.

Standard elements

- **Site supervision** where we will manage on-site labour in accordance with the project plan to ensure the key milestones of the project are being achieved.
- **Site meetings** where necessary. Attendance at site during the pre and post contract periods to review key aspects of the project implementation.

Optional element

- **Third party services** such as power cabling and earthing will be managed and co-ordinated. We will ensure complete compatibility and integration within the project scope.

Project charter

At the enquiry stage

On receipt of your enquiry, a Bid Manager will be assigned to manage the enquiry and answer any technical or commercial matters, which may arise. This person will be your single point of contact responsible for your quotation.

You only have to:

- Send your enquiry

We will:

- Review correspondence, specifications and technical information regarding your enquiry
- Provide our expertise to check accuracy of specification and ensure product and system interoperability
- Determine which suppliers need to be involved (Schneider Electric and third party if required)
- Break down your specification to enable pricing of the individual elements
- Co-ordinate any sub-quotations and resolve suppliers' queries
- Gain competitive pricing through strong buying power
- Compile a composite quotation covering total scope
- Co-ordinate all post tender queries

At the order stage

On receipt of your order, a Project Manager will be assigned to manage the contract and handle all technical or commercial matters. This person will be your single point of contact for managing, executing and delivering your project.

You only have to:

- Place your order

We will:

- Review and clarify the specifications, technical and commercial issues of the order
- Co-ordinate mutually agreed customer review meetings
- Manage critical tasks and operations to drive the programme
- Co-ordinate specialist designs, adaptations or assemblies to achieve full compliance with specification
- Place orders with individual suppliers
- Expedite delivery from individual suppliers
- Co-ordinate supplier deliveries to site
- Verify products comply with specification
- Co-ordinate payments to suppliers
- Attend site meetings, as required, to review key aspects of the project installation
- H&S support in compliance with legislation including construction, design and management regulations
- Co-ordinate site supervision, ensuring key milestones of the project are being achieved
- Manage site services - offloading and craneage; site installation and testing; attendance at system integration testing, system commissioning and handover
- Provide an O&M manual with full operational details of our equipment and systems
- Provide standard manufacturers' drawings, equipment general arrangements and schematics (where appropriate) detailing the equipment being provided

Services

Post implementation services for your project

After your project has been successfully implemented, we can then help you derive the best value from your investment through the **Operation**, **Modernisation** and **Training** phases.

Our services team can offer a total solution that provides support packages covering the entire lifecycle of your project or a combination of services to complement your resources or knowledge.

Note: The page opposite provides a high level view of our extensive services capability. For further details, please request our dedicated services catalogue, reference PS 5513.

Operation

The installation's running costs are reduced through higher energy efficiency, prolonged service life and extended product warranties.

- **Energy management** – monitoring of energy consumption trends and implementation of measures to reduce operating costs
- **Supply quality improvement** – power factor optimisation and mitigation of harmonics to comply with industry regulations
- **Service contracts** – bespoke contracts to provide reactive and routine maintenance, including technical support (24/365)
- **Extended product warranties** - extension of Schneider Electric product warranties by up to five years for additional peace of mind
- **Spares and managed spares contracts** – flexible options for stocking spare parts enables efficient and fast delivery at minimum cost

Modernisation

Extends your installation's effective life and gives you the information you need to make further investment decisions.

- **Installation audit** – a non-intrusive survey of all equipment on site to produce an asset register and identify any operational restrictions, enabling preparation of a scheduled maintenance plan and ensuring compliance with current health and safety legislation
- **Retrofit/Equipment upgrade** - using the latest technological advances to increase reliability and performance of the products and systems
- **Repair or refurbish** - depending on the product, there are services (on or off-site repairs) for faulty equipment or possible refurbishment for ageing equipment
- **Feasibility studies** - assess the viability of proposed system upgrades, determine the impact, define the work to be carried out and produce costings for budget approval

Training

Our training helps to ensure that your equipment is operated properly. This will reduce the operational costs and increase the cost-effectiveness of your resources.

Our products are supported by a range of technical courses backed-up with hands-on practical exercises.

Courses covered include:

- Authorised Persons
  MoD, NHS Estates, SRP01, AP1, AP3
- PowerLogic / Intelligent Home Control
  IHC, SMS Software, Circuit Monitor
- High Voltage / Low Voltage
  Genie*Evo*, Sepam, YSF6, Ringmaster, Masterpact, Compact
- Programmable Logic Controller
  Premium, Micro, Momentum, Quantum, 984, Symax
- Operator interface HMI and SCADA
  Magelis, Monitor Pro, Vijeo
- Industrial Communications
  Interbus S, Profibus DP, Ethernet, Modbus Plus, Fipway, FIPI/O
- Variable Speed Drives and Soft Starters
  Altivar, Altistart

For further information on our training courses, please contact our Customer Training Centre directly on:
Tel: +44 (0)24 7684 7547
Email: trainingGB@gb.schneider-electric.com

Our customers have benefited from our experience by achieving the most effective solution from the outset

Case studies

We have been involved in a wide range of projects. The following pages detail case studies where our expertise has provided the customer with a tailored solution to their particular requirement. The case studies demonstrate how we manage projects to ensure that the client gains the best value from their investment.

Case studies featured in this publication include:

Case studies

Airport – EDF Energy

Location

Heathrow Airport Terminal 5, London

Background

At a cost of around £4 billion, the new Terminal 5 at Heathrow airport represents a huge programme of construction works. This 24/365 facility demands the very highest standards of security and availability of electrical supplies to maintain safe and effective operation. The UK construction industry's best practice is the benchmark, ensuring key milestones as well as quality and safety standards are met.

The solution

Projects & Services were selected by EDF Energy and BAA as a framework supplier to help deliver the extensive HV infrastructure electrical network to power Terminal 5. Long before any equipment was delivered to site, a team of site-based embedded engineers collaborated with the customer to develop conceptual designs and select the most suitable equipment. Quality and Health and Safety measures were put in place along with Project Management systems to ensure smooth implementation.

During construction, Projects & Services' dedicated site-based team managed the delivery, installation, testing and cabling works to schedule, ensuring high quality and safety standards were maintained. This collaborative approach meant interfaces were defined and managed, designs were well planned and co-ordinated, ensuring that the client gained the best value from their investment.

Banking and Finance - Investment Bank/Canary Wharf

Location

Canary Wharf, London

Background

An investment bank at Canary Wharf, receives its electricity via three 11kV circuits, with back-up power available from two on-site 11kV generators. Originally, three separate systems monitored and controlled the main HV & LV breakers to avoid supply interruptions. Yet a fault on one of the incoming cables caused a loss of supply to the building, highlighting the need for redundant controls.

The solution

Projects & Services designed and implemented a solution involving a complete upgrade of the Electrical Distribution Monitoring and Control System.

Schneider Electric's PLCs monitor the status of various circuit breakers, to control the switching sequences and initiate the starting and stopping of the generators to restore supply after a power failure.

Due to the critical nature of the business, a 24hr call out and parts management service has also been implemented.

The system has the potential to allow the site to be monitored from a remote location using a standard Internet browser via Schneider Electric's Transparent Ready concept. The system is monitored locally using Schneider Electric's Magelis HMI's.

Case studies

Data and Telecoms - Global Switch London 2

Location

London

Background

Global Switch London 2, is Europe's largest purpose built data centre and data storage facility for the IT and Internet industry. It requires a secure and resilient power supply and a need to maximise available space for client occupation.

The solution

Global Switch chose a rotary UPS solution, to provide a No Break power supply, selecting Schneider Electric's Projects & Services division to meet the challenges this posed for the HV power distribution network.

The overall solution incorporated measures for active filters, which avoided the need for over-rated LV equipment, as well as using Schneider Electric's compact Genie range of HV switchgear and MV/LV packaged substations to keep switch room sizes to a minimum. Remote power monitoring and control was provided by Schneider Electric's PowerLogic Electrical Network Management system. A PowerLogic support contract was set up and Schneider Electric's devices were used throughout and up to final distribution.

Projects & Services appointed a full time project manager, ensuring that delivery and commissioning requirements were met, allowing AMEC, the main contractor to meet its target.

Retail - Woolworths Group PLC

Location

Nationwide

Background

Woolworths, also known as big W, supplies everything from audio/visual, gardening, clothes, toys and DIY goods. Woolworths Group PLC is currently constructing a network of new format stores and wanted a system that would run these new stores efficiently.

The solution

Projects & Services provided a solution, which included the electrical switchboard, the final circuit distribution and Canalis busbar trunking for the power and lighting in the main retail area, as well as control of the heating and ventilation plant. This used Telemecanique Programmable Logic Controllers (PLCs).

At the heart of the system is Schneider Electric's Premium PLC controller with a communications network. The system regulates the temperature within the building and offices, controls the lighting inside and outside during store open and closed times and also shuts down facilities in the event of a fire within the building. It also cycles the lights every day to ensure even lamp wear to reduce maintenance costs.

Parameters such as temperature and alarm conditions, lighting status and electrical power consumed can be viewed within the store on a screen or remotely over the Internet at the head office.

Case studies

MoD (Defence Estates) - Clyde Submarine Base

Location

Clyde, Scotland

Background

The Royal Navy Clyde Submarine Base facilities at Faslane and Coulport play a vital role in deploying the country's strategic nuclear deterrent, as well as providing essential support for conventional submarines and other surface support vessels.

To satisfy the stringent nuclear safety regulations imposed at these facilities, it is essential that vessels docking there are provided with a stable and reliable shore-based electrical supply for their on-board safety critical systems.

The solution

Projects & Services supplied two high integrity control centres that monitor and control the shore-based electrical supply to over 100 substations located around the bases. Systems supplied are dual-redundant with additional backup control available through a remote secondary control centre.

Prior to site installation, Projects & Services put the Remote Terminal Units (RTUs) and computer equipment through rigorous environmental and functional type testing to meet the client's stringent requirements. Projects & Services then installed and commissioned the systems. Schneider Electric SCADA specialists now maintain the systems through a comprehensive service level agreement which guarantees support to the MoD 24hrs a day, 365 days a year.

Health - Edinburgh Royal Infirmary

Location

Edinburgh, Scotland

Background

Edinburgh Royal Infirmary is classified as a PFI (Private Finance Initiative) with several companies involved in the design, build and lease of the hospital to the Health Authority. A critical project requirement was security of supply. The electrical distribution scheme had to be able to reinstate supply within one minute of a mains failure.

The solution

Projects & Services provided a complete turnkey solution including project management, Schneider Electric's MV/LV switchgear and Packaged Substations, cabling, testing, commissioning and training.

During the consultation phase it was established that Schneider Electric's PowerLogic network management system would be vital for meeting the supply security and availability target. Schneider Electric's Quantum PLC is the main automation master. This detects mains failure and initiates the generator control system to start and manage all HV transformer breakers, low voltage air circuit breakers, bus-sections and low voltage moulded case circuit breakers.

The system sheds LV loads to allow the generators to come on stream, and as generator capacity becomes available, the system automatically re-instates LV loads in order of importance, up to a load level less than the generator capacity.

Case studies

Rail - Tyne & Wear Metro

Location

Tyne & Wear

Background

Tyne and Wear Metro is a modern light railway system for the Newcastle, Gateshead, North Tyneside and South Tyneside districts in the North-East.

The customer needed a system that would monitor and control the lighting, lifts, fire alarm panels and other electrical services across the rail system, as well as gather sales and service information from the ticket machines.

The solution

Projects & Services designed a monitoring and control solution based on a SCADA system, with remote terminal units located at each station. In addition, a bespoke communications interface was developed to extract information from the ticket machines, using the machine's own proprietary communications protocol.

Twelve new stations were recently added to the Metro network, and Schneider Electric worked closely with Tyne and Wear Metro to expand the control system accordingly. Projects & Services also supports the system through a maintenance contract.

Business services - Experian

Location

Nottingham

Background

Experian supports more than 50,000 clients across diverse industries in more than 60 countries. Its new data centre in Nottingham extends over 50,000 square feet and required secure and resilient power supplies.

Projects & Services were chosen to project manage the procurement, supply, off-loading, installation, testing and commissioning of the primary electrical infrastructure.

The solution

Projects & Services liaised closely with several internal and external suppliers to meet a demanding schedule. The scope of equipment comprised a containerised LV switchboard with changeover controls for the multiple generators, cast resin transformers, LV busbar from transformers to main LV switchboards and LV busbar from the main LV switchboards to the power distribution unit (PDU) cabling points. Also included were 16 PDU's for distributing underfloor power via Schneider Electric busbar with tap off units containing MCBs.

The generator, main LV and PDU switchboards are all equipped with thermal imaging capability to assist with non-invasive maintenance. An electrical control and monitoring system (ECS) was supplied, which is an interactive web based system designed to monitor all key points of the electrical infrastructure and provide control of the main LV ACBs.

The ECS is able to identify the precise location of any tripped underfloor MCBs, which are fed from the numerous busbar runs under raised computer room floors, thereby minimising any downtime.

Case studies

Automotive - Jaguar Cars

Location

Halewood, Merseyside

Background

Jaguar's £300m automated manufacturing plant X-Type production line needed to maintain shifts of 163 construction operators, working alongside 236 robots and manufacturing up to 45 cars an hour.

Reliable modular control systems were essential. These systems had to be flexible, take up less space and be easier to maintain.

The solution

Jaguar chose a solution using the Schneider Electric 'Transparent Factory' concept. Projects & Services designed this control system using a dual-redundant high-speed fibre Ethernet structure. Discrete I/O wiring and hard-wired interlocks were eliminated so that control panels could be standardised and kept small, leaving clear and unobstructed vision across the plant.

This 'Transparent Factory' approach has allowed Jaguar to introduce reliable and deterministic networks that are supported by commercially available tools and diagnostics. These are easy to integrate, simple to upgrade, and enable total communication and control throughout the plant and between the plant and business systems.

With the support of Projects & Services, Jaguar's automated manufacturing plant X-Type production line at Halewood, UK, is a good up-to-date example of integrated modular manufacturing systems.

Food and Beverage - Unilever

Location

Worldwide

Background

To meet increasing customer demand, Unilever production facilities are moving towards continuous operation. To maintain safety standards at all its plants worldwide, Unilever needed to improve the electrical knowledge and skills of its technical staff.

The solution

Projects & Services analysed Unilever's needs and devised a series of five-day training workshops. These provide the know-how required by staff to ensure the safe and reliable operation and management of onsite electrical infrastructure.

The workshops also improve the overall professionalism and expertise of the company's engineering staff by giving them a sound appreciation of electrical engineering principles and techniques, reflecting the latest trends in electrical engineering and safety.

Participants who complete the workshop have an action plan for improving safety and reliability at their site, as well as a greater understanding of the critical electrical issues that affect the business.