DAVIS & SHIRTLIFF

know H_2Ow through experience

ENGINEERING
PROJECT PORTFOLIO
ISSUE 2

WATER PUMPS
SOLAR EQUIPMENT
BOREHOLE SERVICE
WATER TREATMENT
DIGITAL ENGINEERING
GENERAL MACHINERY
SWIMMING POOLS
GENERATORS
IRRIGATION
CHEMICALS

DavisandShirtliff.Com

FOR OVER 80 YEARS,

Davis & Shirtliff has been committed to providing innovative and customized solutions to address the diverse challenges our customers face in the water and energy sectors across the region. As a trusted partner in the Commercial and Building Engineering segment, our extensive experience and expertise have enabled us to successfully deliver a wide range of projects that meet and exceed our clients' expectations.

Our dedicated team of specialists encompasses a broad range of disciplines, including Pumping Solutions, Water Treatment, Wastewater Management, Industrial Chemicals, Renewable Energy, Swimming Pools, Irrigation, Control & Instrumentation, Building Management Systems, and IoT. We collaborate with a global network of suppliers who share our commitment to innovation and excellence, ensuring that we can offer unparalleled problem-solving capabilities in the water and energy sector throughout Africa.

At Davis & Shirtliff, we believe in fostering strong partnerships with our clients to gain a comprehensive understanding of their unique challenges. By working together, we are able to develop sustainable, tailor-made solutions that cater to their specific needs. Our state-of-the-art Engineering and Manufacturing Centre is equipped to assemble complex, custom-designed products that fulfill individual customer requirements.

In this booklet, we are proud to showcase a selection of projects that demonstrate our vast capabilities and the impact we have made in the Commercial and Building Engineering sector. These case studies serve as a testament to our unwavering dedication to delivering high-quality, innovative solutions that improve the lives of our customers and contribute to a more sustainable future.

Eng. Philip Holi
GROUP TECHNICAL DIRECTOR

BY CHOOSING **DAVIS & SHIRTLIFF** AS YOUR PARTNER, YOU CAN EXPECT EXCEPTIONAL EXPERTISE, A CUSTOMER-CENTRIC APPROACH, AND CUTTING-EDGE TECHNOLOGY THAT WILL HELP BRING YOUR PROJECTS TO LIFE. WE LOOK FORWARD TO COLLABORATING WITH YOU AND MAKING A LASTING, POSITIVE IMPACT ON YOUR OPERATIONS.

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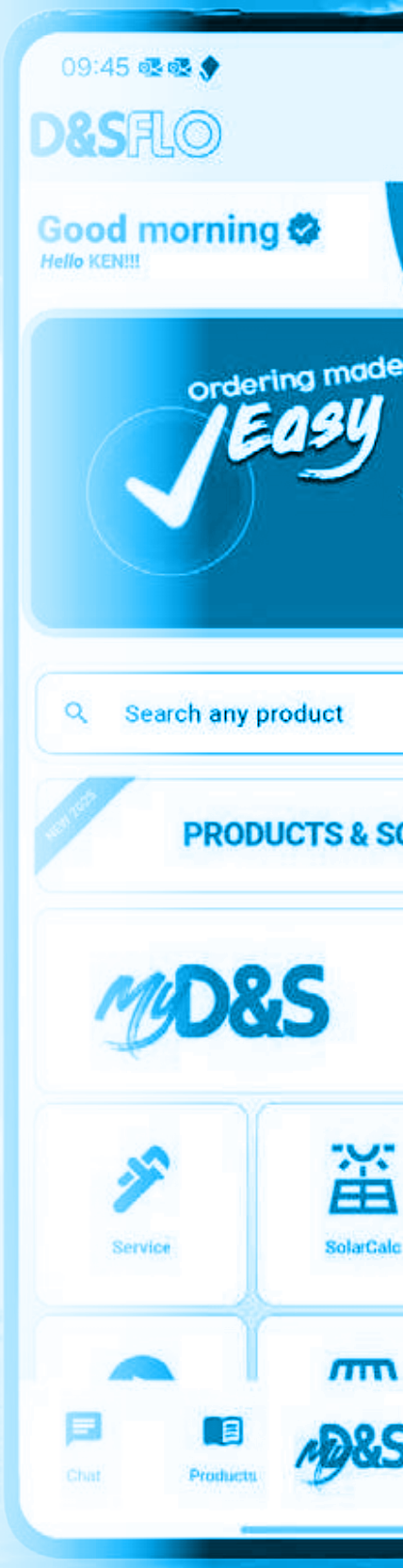
1 Digital Online Tools

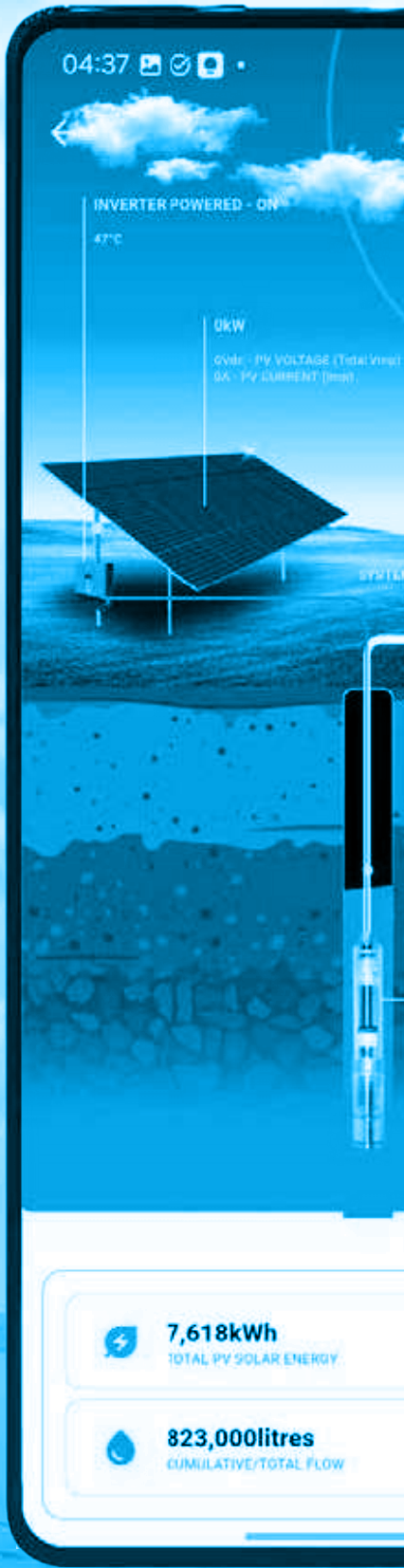
D&SFLO

DAYLIFF PUMPCALC KNOW H₂OW

DAYLIFF SOLARCALC Solar know H₂Ow

DAYLIFF





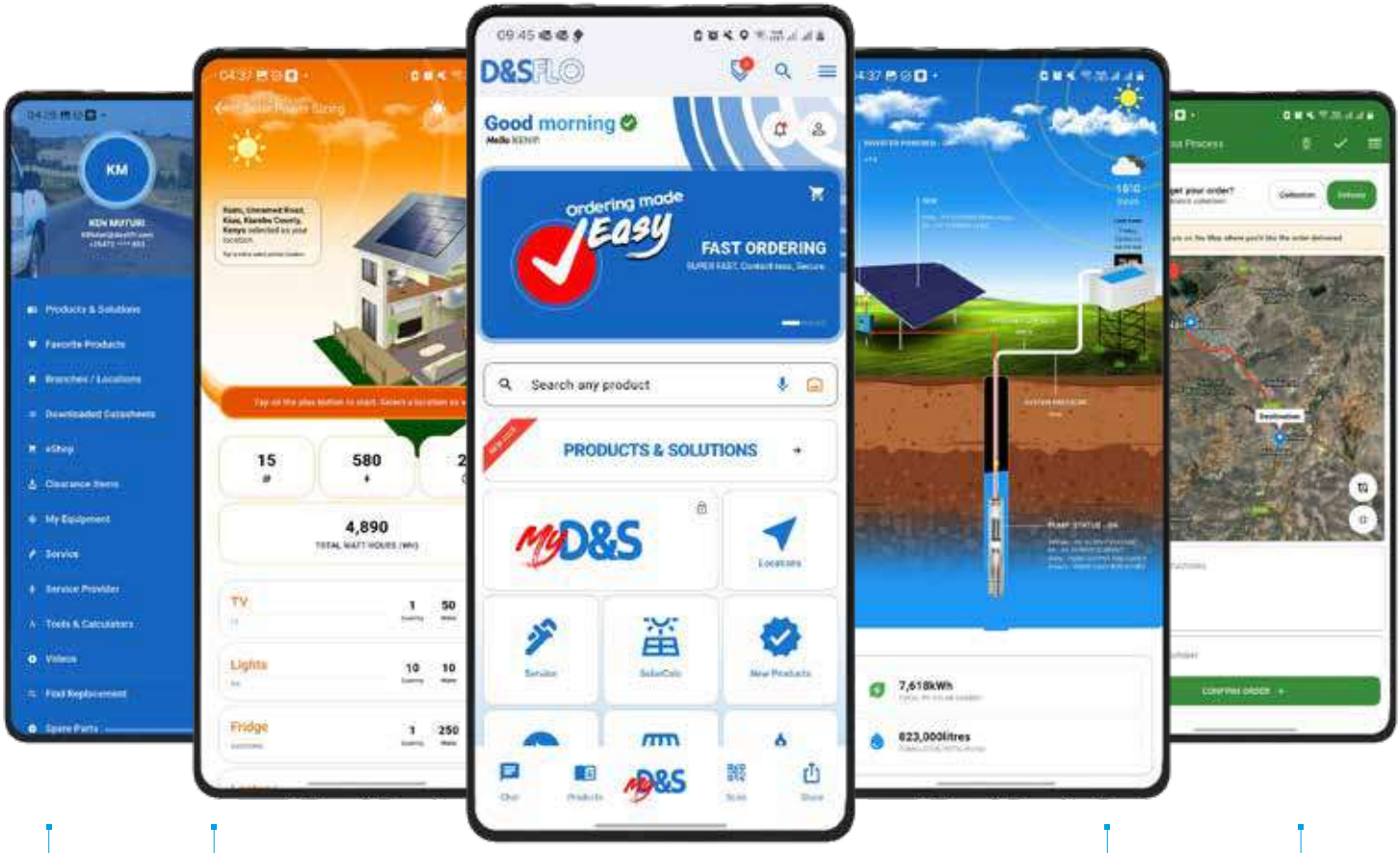
1.1 D&S Flo App

D&S FLO is an online tool that empowers users to explore and select D&S products with ease and accuracy.

The app is available on both iOS and Android platforms, and is offered by Google Play and the App Store through any smart phone interface and can be easily downloaded.

Key features of D&S FLO include;

- Full and up to date D&S Product Manual complete with datasheets
- Access to the e-shop
- Branch contacts
- Live chat support
- The engineer's toolbox
- Equipment sizing software
- Service and support advice
- Spare parts directory
- Company news and updates



D&SFlo User Interface

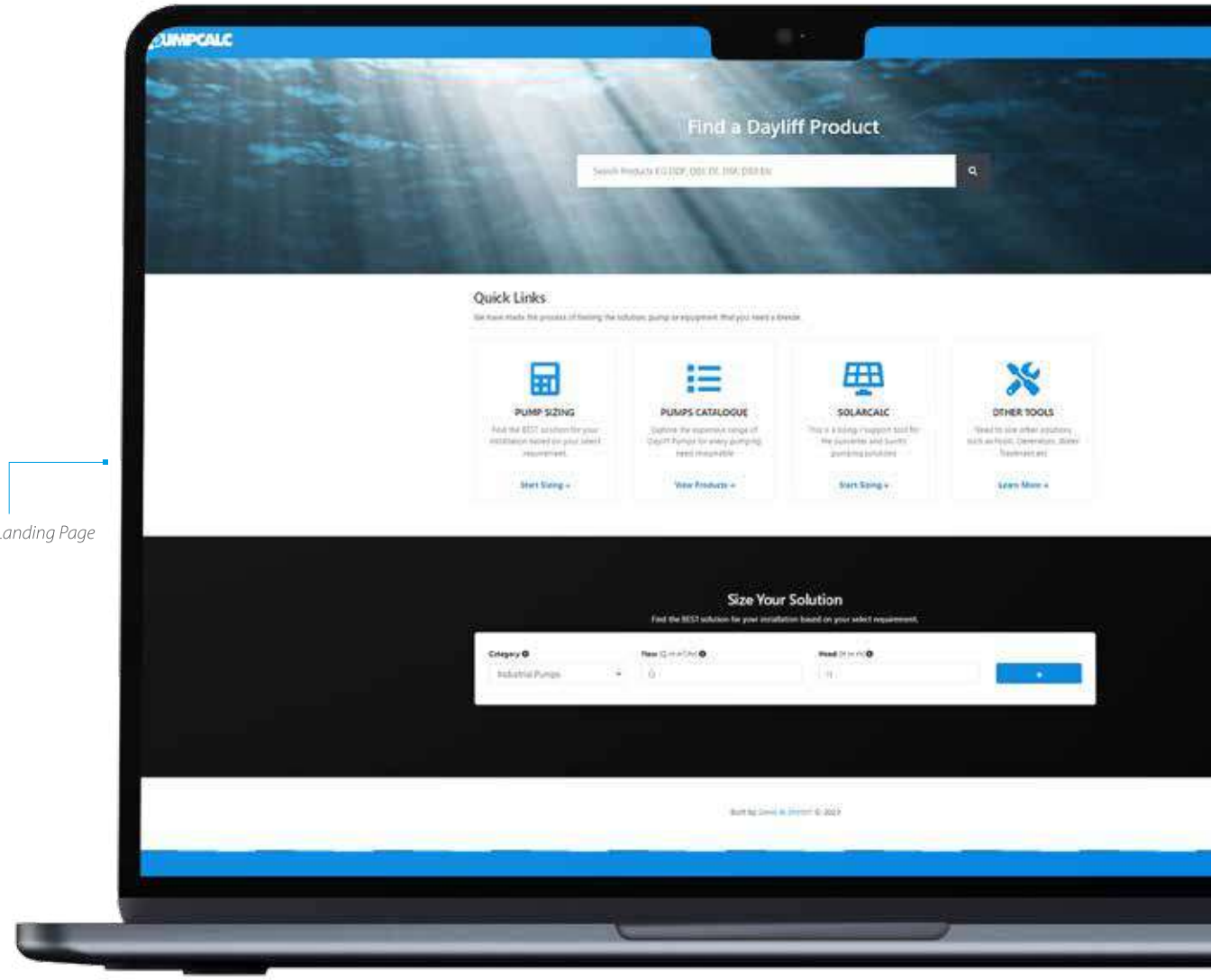
1.2 PumpCalc

PumpCalc is a web based tool developed in-house by D&S Engineers that digitizes pump system selection, design and specification for the wide range of Dayliff pumps and has an advanced sizing function for borehole and industrial pumping solutions.

Key features of PumpCalc include;

- Pump Performance, Efficiency, NPSH and Power Curves
- Pump Comparison feature
- Pump Details – Documents, Datasheets, Inventory, Pricing, Spare Parts and Videos
- Cable length, TDH, Friction Losses
- Integration to Website and D&S FLO App
- Optimized pump system selection and report generation downloadable in PDF format

PumpCalc is available on web at https://pumpcalc.davisandshirtliff.com



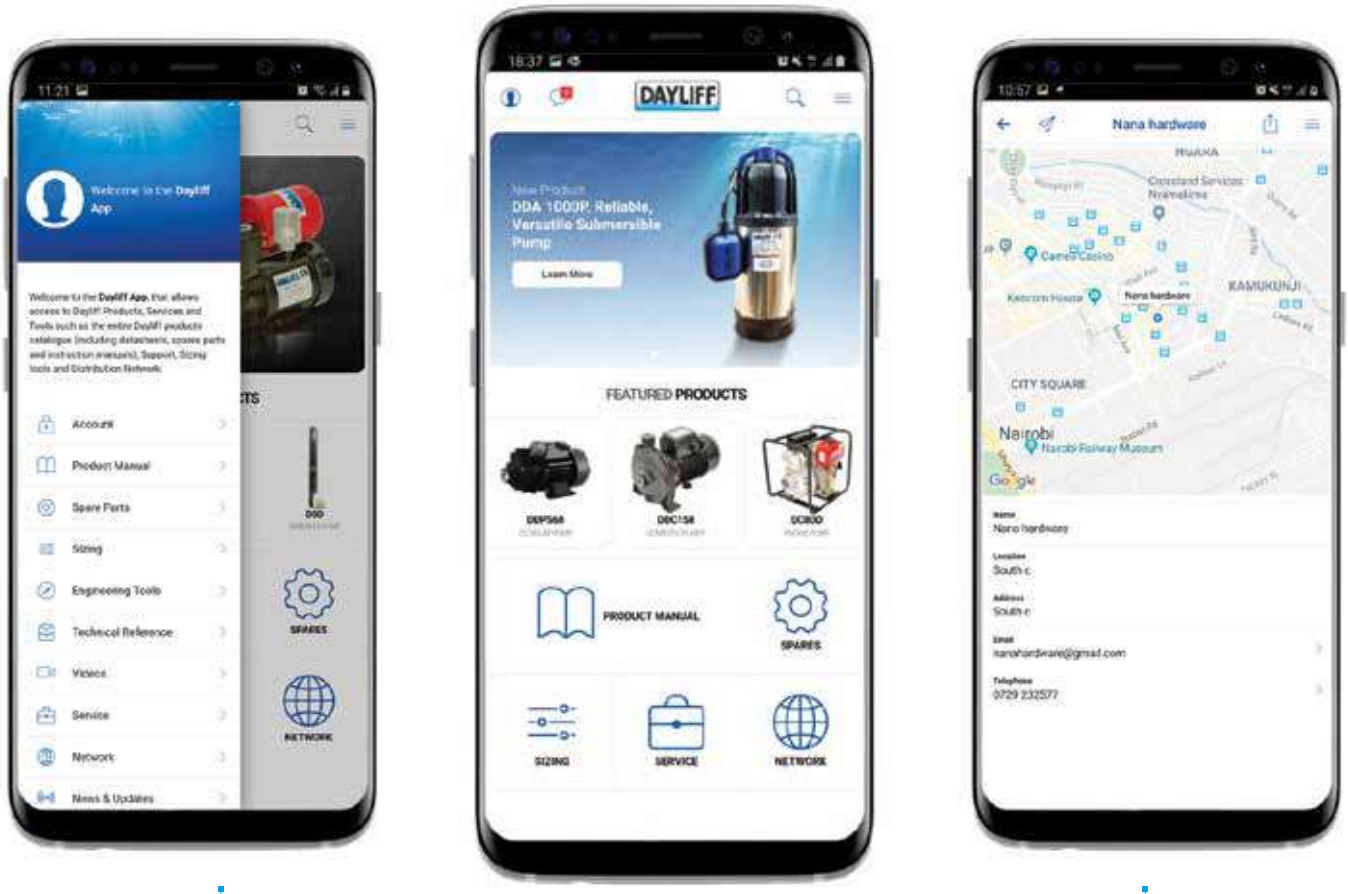
PumpCalc Landing Page

1.3 DAYLIFF App

The DAYLIFF App assists users to explore and select Dayliff products and solutions with ease and accuracy. The solution enables customers access to support of the entire Dayliff range of products and is available on Google Play for Android users and App Store for iOS users.

Key features of the DAYLIFF App include;

- Dayliff product details such as Datasheets, Images, Spare Parts, Models
- MyDayliff selection with option to add and map their Dayliff products
- Stocklists across the region
- New Dayliff products
- Integration to SolarCalc, PumpCalc and other sizing tools



DAYLIFF App User Interface

SCAN the QR Code on the side of the DAYLIFF packaging using a SMART phone to access support

1.4 SolarCalc

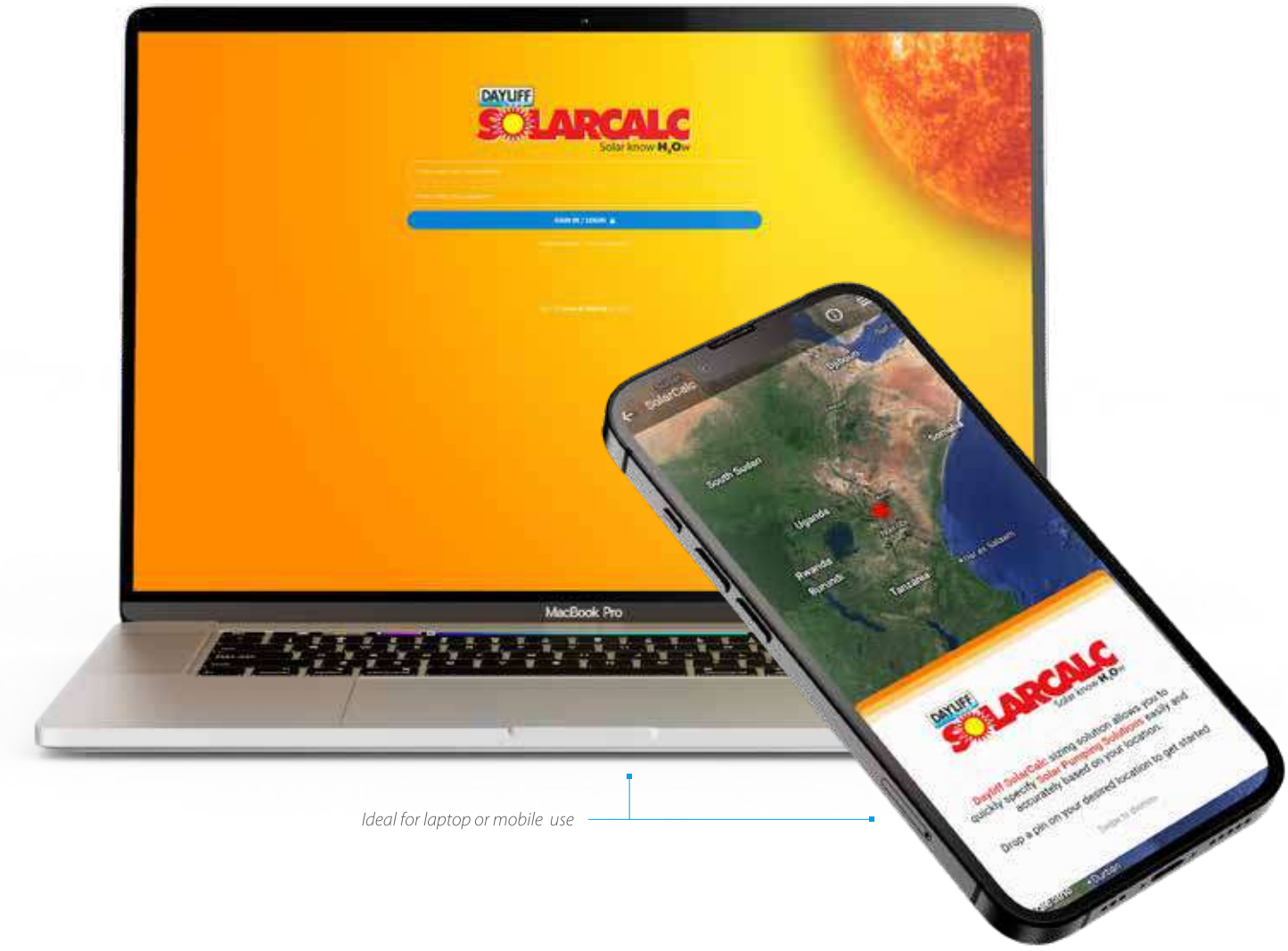
Proprietary software SolarCalc enables easy calculation of Solar pumping solutions.

Key points and features of SolarCalc;

- Integrated with Google Maps APIs, Microsoft and NASA to give customers, engineers or consultants accuracy in selecting their location which can be used to calculate expected irradiation
- Easy to use sizing tool that enables the users to accurately calculate the best solar solution based on a few pieces of key information
- Once the input parameters are keyed in, the tool generates a report indicating the pump curve, pump, inverter and panel details including a wiring diagram

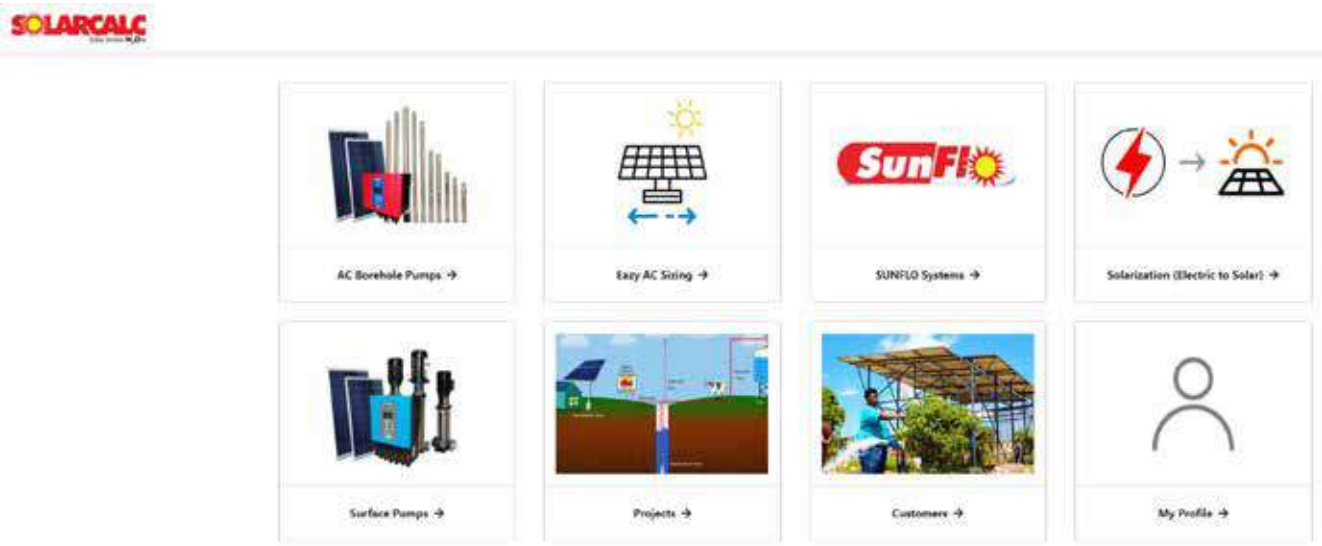
SolarCalc is available on web at https://solarcalc.davisandshirtliff.com and on the Dayliff App for Android and iOS.

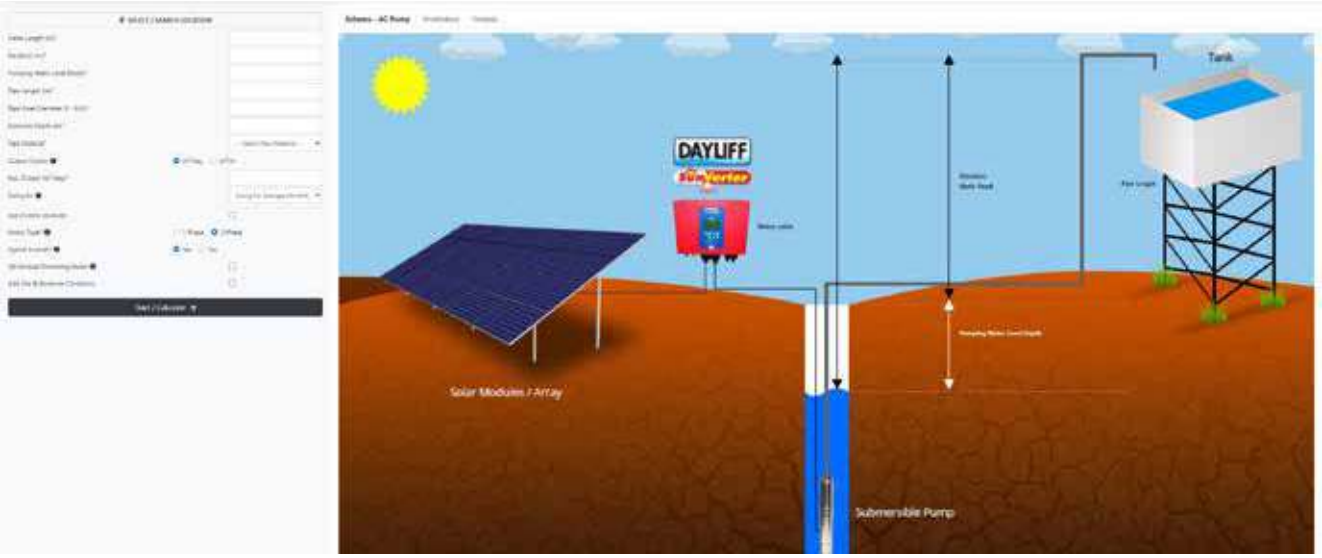
Optimized pump system selection and report generation downloadable in PDF format.

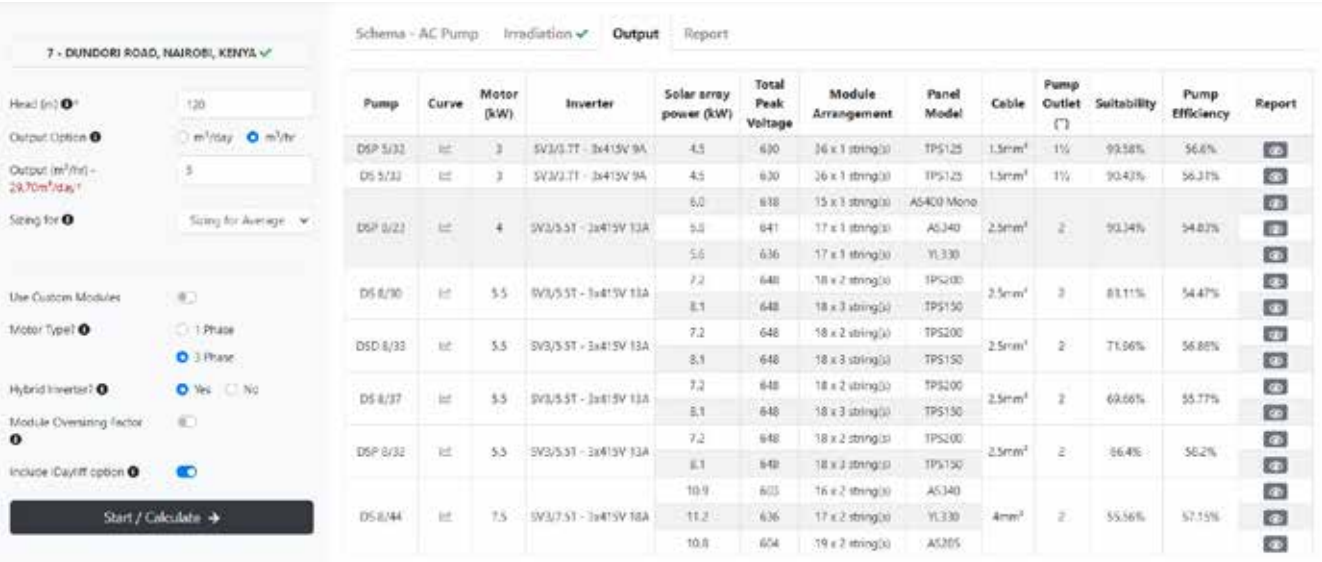


Ideal for laptop or mobile use

1.4.1 SolarCalc User Interface







1.5 iDayliff IoT

iDayliff is a high specification internet-based communication system for remote monitoring and control of all Dayliff and other Davis & Shirtliff supplied equipment and installations.

iDAYLIFF has now been upgraded to use the latest IoT (Internet of Things) infrastructure that gives improved reliability, speed and accuracy of information and is scalable, flexible, robust and customer centric.

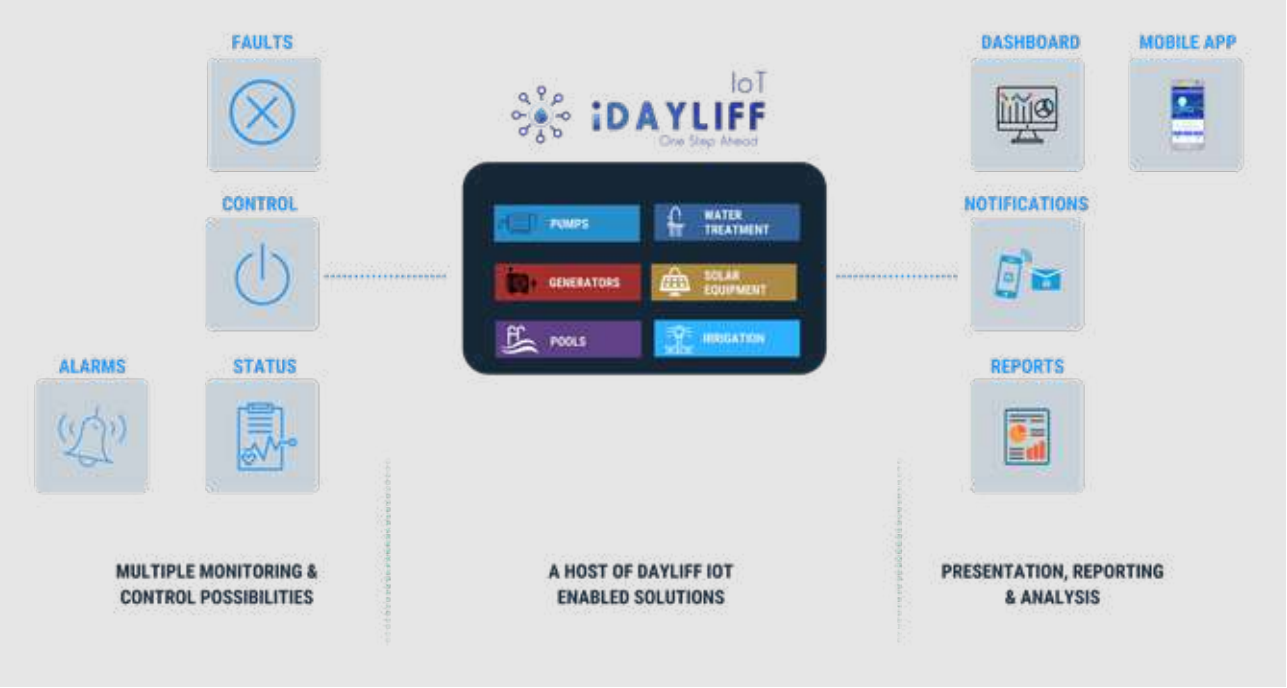
Depending on system specification and fitted sensors, the iDAYLIFF user is able to see real time equipment operation status, alarms and parameter readings including;

- Status of pumps (on/off/trip) and equipment run hours
- Log of alarm conditions such as low water levels, power anomalies, process alarms and equipment alarms
- Water pipe pressures and flowrates
- Total water production
- Power and energy consumption
- Water quality as per installed instruments such as pH, ORP and TDS
- Water and chemical levels as per installed level switches and transmitters

The user is also able to perform the following:

- Start and stop equipment
- Schedule equipment operations and setup alerts to be delivered via email or SMS

It also enables pre-emptive maintenance to be undertaken by Davis & Shirliff Service Team when customer signs up for Equipment Service Contract.



iDayliff Schematic

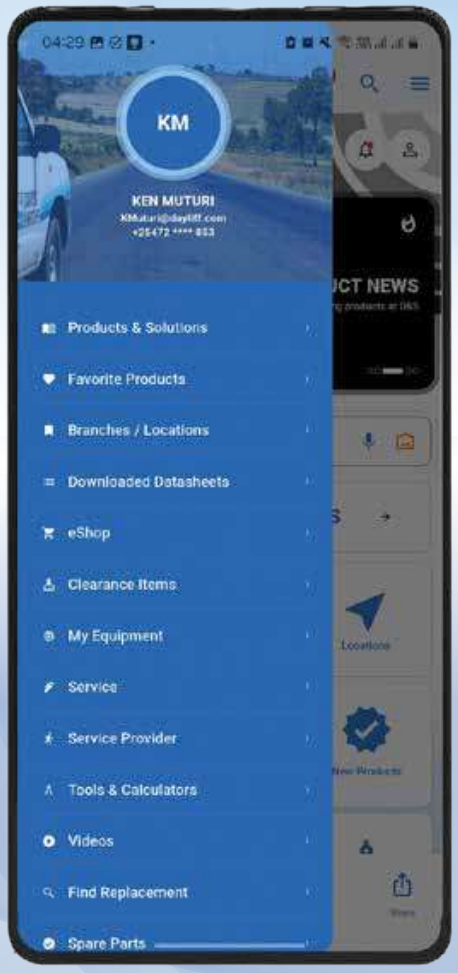
THE APP FROM

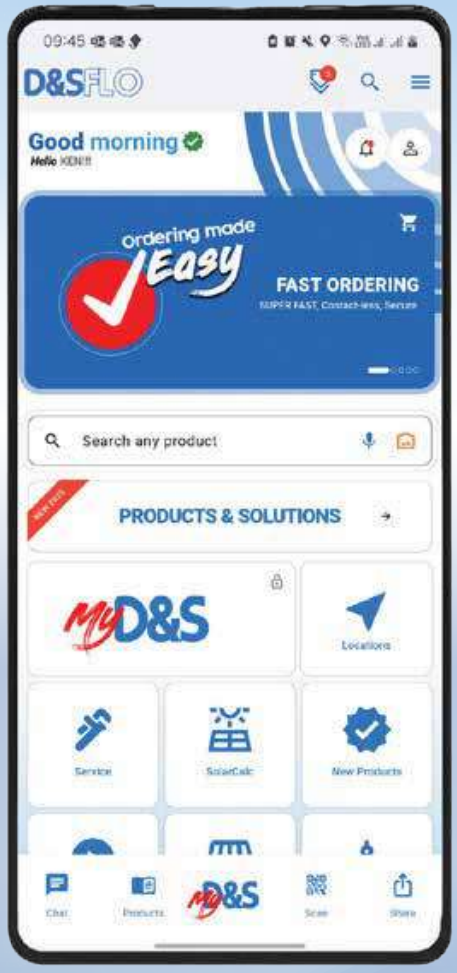
DAVIS & SHIRTLIFF

know H_2Ow through experience

D&S FLO

VERSION 4.0





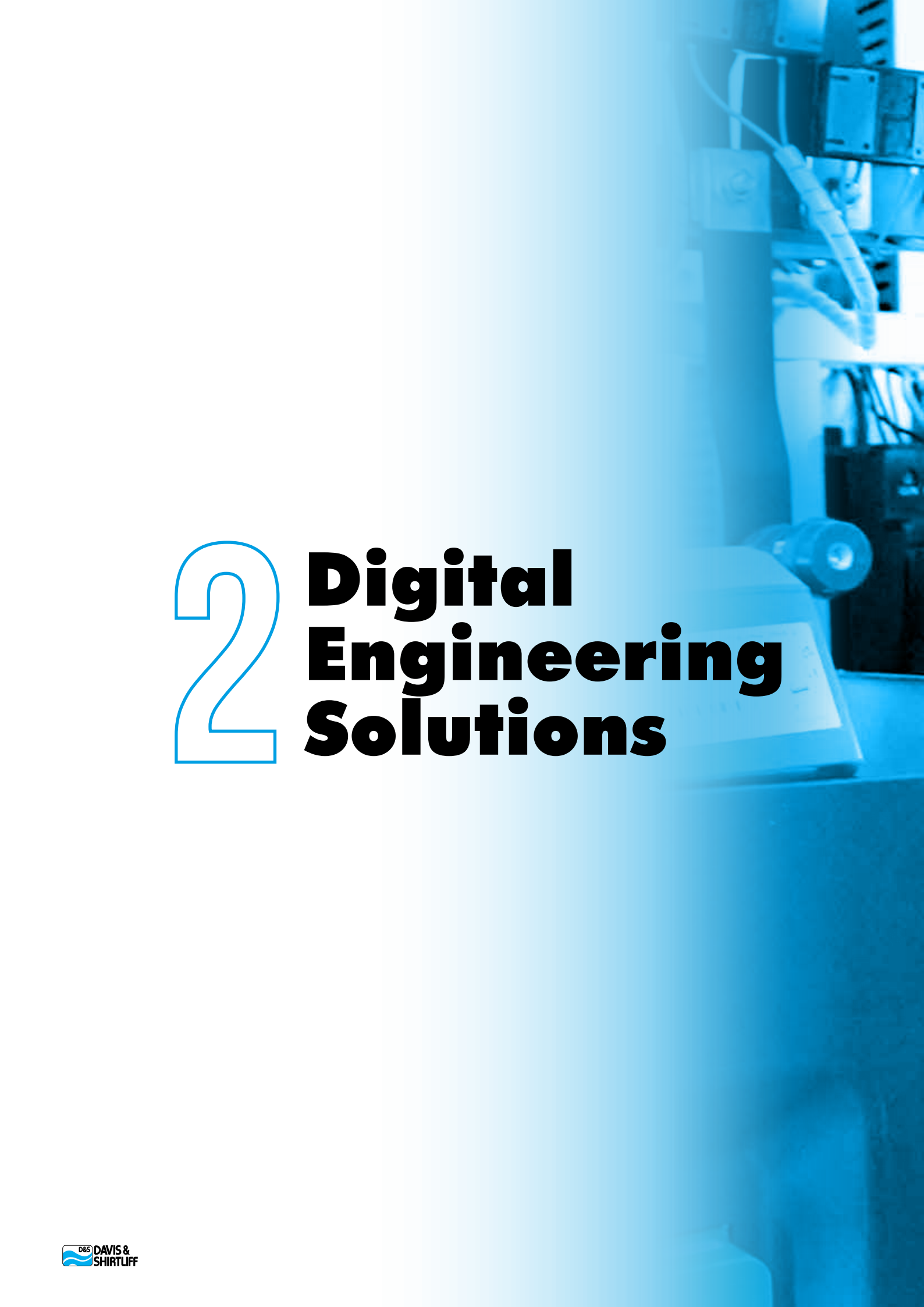
NEW FEATURES!

Available for ios and android

Download on the App Store

ANDROID APP ON Google play

- AI POWERED SEARCH - VOICE, IMAGE AND FAST SEARCH
- INSTANT PUSH NOTIFICATIONS
- FAST ORDERING PROCESS
- ORDER TRACKING
- iDAYLIFF INTEGRATION
- D&S CONNECT INTEGRATION - NEED SERVICE?
- RETAIL PRICE AND INVENTORY VIEW FOR STOCKISTS
- MAPS INTEGRATION



2 Digital Engineering Solutions

PROJECT CASE STUDY

2.1 Prepaid Metering for an Apartment Block in Kenya

The newly constructed apartment block at Mombasa Kenya features 88 units purchased by investors who are subletting or taking up residence in them. The apartment management required a prepaid water metering system to offer an effective water management system by enforcing prepayment of water service and providing real-time information on water purchases. The scope of work undertaken included supply and commissioning of smart prepaid metering system for the apartments. The system consists of industry-standard STS compliant prepaid water meters and a web-based vending platform for water credit token generation. The meter recharge process is facilitated by 20-digit token delivered to consumers through SMS and accessible via web app once a customer makes payment by mobile money.

The salient features of the installation include;

- Smart meters with anti-tamper mechanisms that trigger valve closure on magnetic field interference or tampering with seals.
- Web-based vending platform for kiosk vending with user rights management and vending reports.
- Integration with mobile money system for direct payment to water service provider's bank account by consumers.

New Constructed Apartment Block - Mombasa

Dayliff Smart Meter

TECHNOLOGIES USED	
Dayliff STS Prepaid Water Meters and Web Vending Platform	M-Pesa Mobile Money

PROJECT CASE STUDY

2.2 Smart Water Metering for FMCG Factory in Kenya

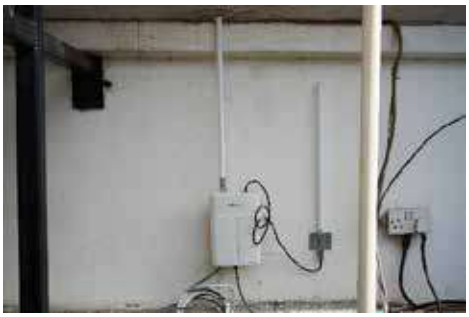
A leading FCMG factory undertook a facility digitalization project in line with their overall digital transformation to fulfil ESG requirements. D&S Engineering successfully delivered the solution encompassing the supply and installation of smart cold-water meters, boiler hot-water meters, tank level sensor and Automatic Metering Infrastructure (AMI) system. The deployed AMI system featured specialised wireless technology and seamless integration with the factory's IoT platform, enabling real time data access and optimised water usage management across critical operations.

The salient features of the installation include;

- Smart ultrasonic water meters with industry LoRaWAN certification, integral battery lifetime of more than 10years and lead detection alarming.
- Ultrasonic heat meter to track water consumption of boiler and thermal energy consumption for the boiler.
- Tank level sensor to track real-time process water availability in the facility.
- Secure integration to IoT Monitoring and Analytic platform using industry standard protocols.

Smart Cold-water Meter

Boiler Hot-water Meter



Automatic Matering Technology

TECHNOLOGIES USED	
Axioma Qalcosonic Ultrasonic Smart Water Meters	Milesight LoRaWAN Gateways

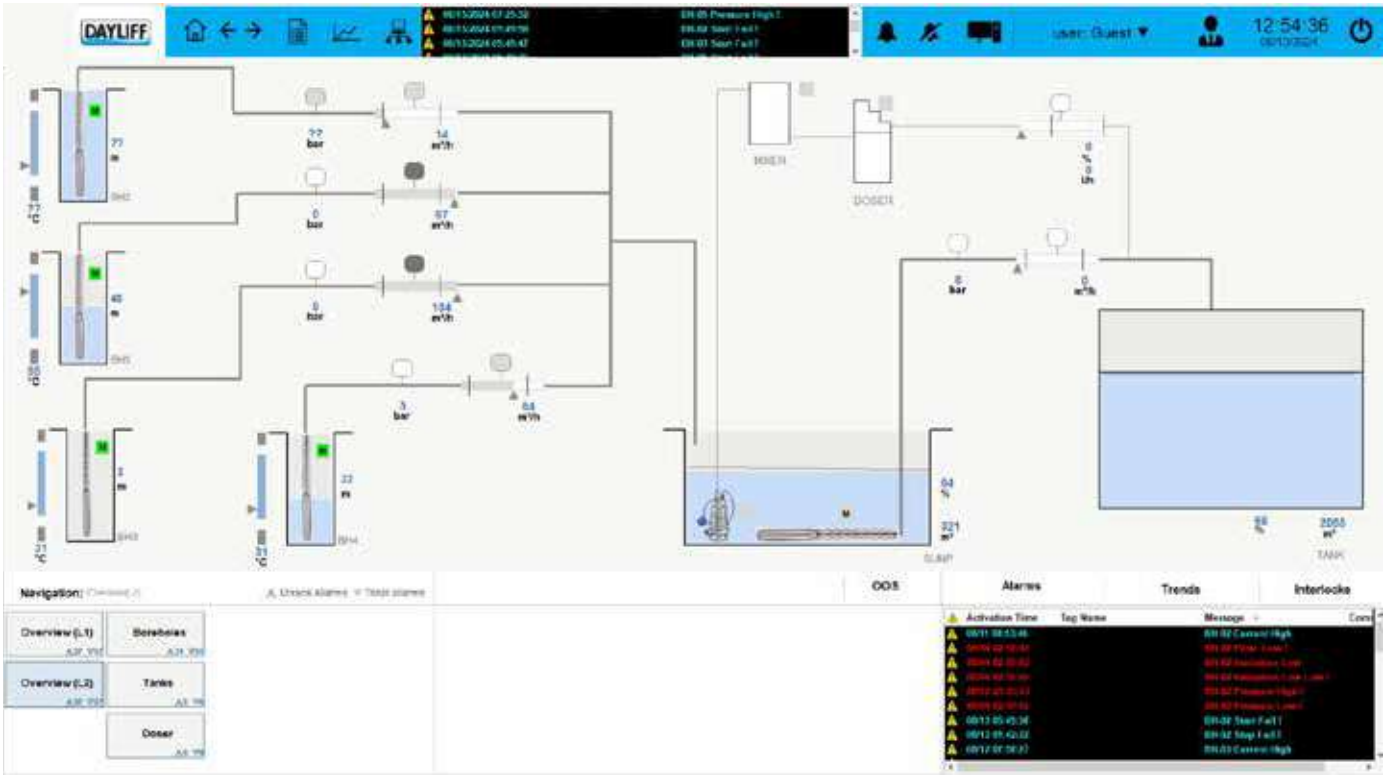
PROJECT CASE STUDY

2.3 SCADA and Automation for a Water Utility in Tanzania

To improve the water availability and accessibility in the town, the water utility undertook drilling of 5 boreholes and building of large reservoirs. With the boreholes distributed over a 2km radius and the main reservoir over 9km away, there was need to invest in a SCADA system and associated automation to enable central control and monitoring of the entire water supply system.
The project comprised deployment of a modern SCADA (Ecostruxure Machine SCADA Expert) and supply and installation of industrial pump control panels, RF wireless communication technology and instrumentation. The RF wireless technology deployed in a mesh architecture for redundancy ensures realtime communication between the pump stations and the SCADA at the central station. The water supply system supplements the existing municipal water supply to the town by up to 500m3/hr. The water utility enjoys improved operational efficiency, non-revenue water mitigation, and exceptional availability and reliability for the water supply system.

The salient features of the installation include;

- Advanced motor protection and tracking for the borehole and transfer pumps.
- Automated water treatment and borehole pumps run time balancing.
- Borehole condition tracking including water temperature, dynamic water level and static water level.
- SCADA with animated human machine interface (HMI) screens, OEE dashboards, alarms, events, trends, and reports.



TECHNOLOGIES USED		
EcoStruxure Machine SCADA Expert	Radioline Industrial Wireless Technology	Altivar Softstarter ATS480 MP 204

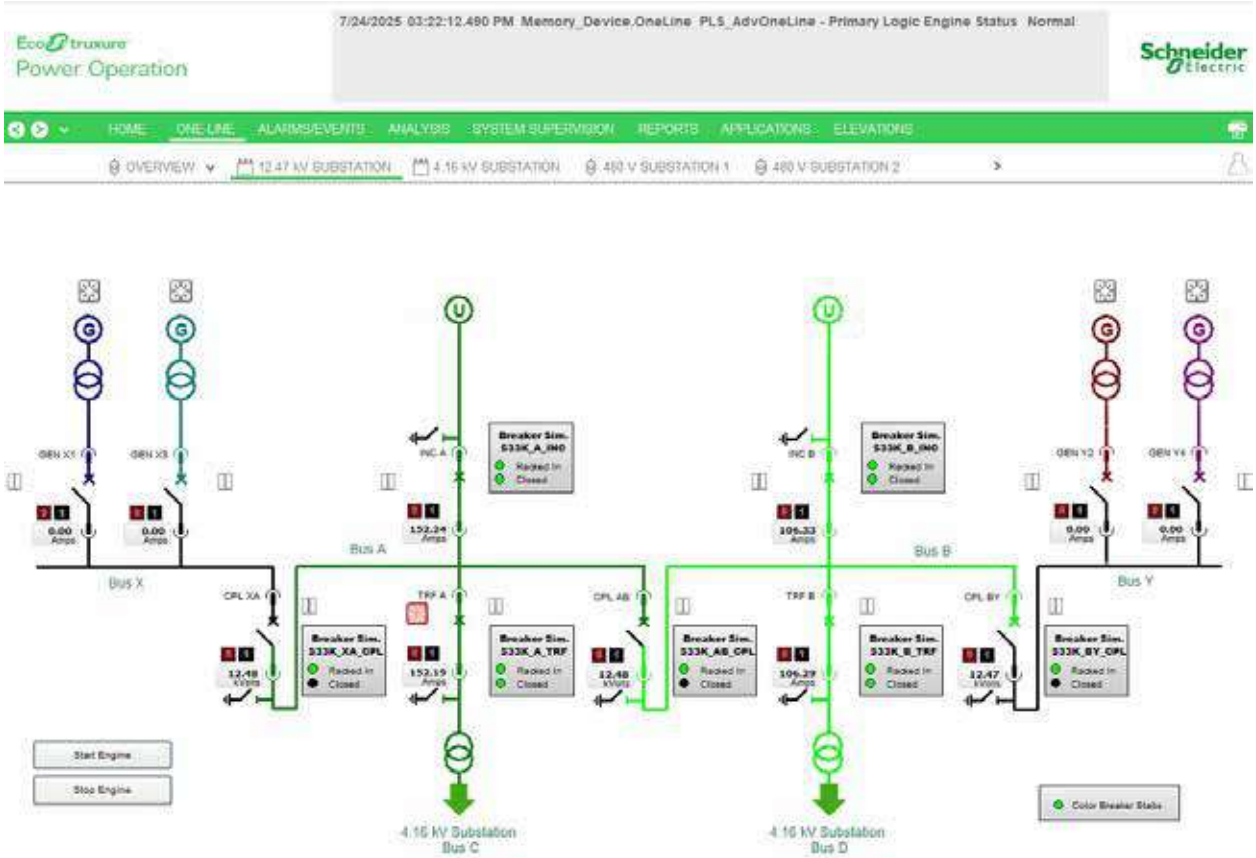
PROJECT CASE STUDY

2.4 Substation Automation with Power SCADA for University Hospital Facility in Uganda

A regional university opening a new campus in Kampala featuring newly constructed university centre and student residence required power SCADA for substation automation. The project delivered comprised deployment of a modern Power Supervisory Control & Data Acquisition (SCADA) system to monitor and control the Remote Terminal Units for three substations. The system supplied Ecostruxure Power Operations (EPO) is a SCADA uniquely designed for critical power management that will ensure real-time situational awareness and reliability of the power network in the facilities.

The salient features of the installation include;

- EPO SCADA set up with server redundancy and secure integration into the facility Building Management System.
- Advanced reporting and dashboard modules for data visualization and analysis
- Software Assurance to support system modernization in coming years
- High performance Saitel RTU for data acquisition and automation of Intelligent Electronic Devices (IED) including power meters and relays.
- High Precision GPS NTP Timer Server for synchronization of SCADA.



TECHNOLOGIES USED		
EcoStruxure Power Operations	Saitel RTU	Easergy T300 RTU

PROJECT CASE STUDY

2.5 Power Monitoring System for a Major Telco in Tanzania

The Telecommunication company required a system to track Power Usage Effectiveness (PUE) of multiple data centres distributed over multiple locations for ISO/IEC 30134 conformance. The project undertaken involved submetering the utility power and generator incomers and all the significant IT and non- IT loads including UPSs, Rectifiers, Airconditioning and Lighting. There was supply and installation of 65 No. Power meters SCADA gateways (Ecostruxure Panel Servers) undertaken and deployment of Ecostruxure Power Monitoring Expert (PME) software. The PowerLogic meters (PM8240, PM5320 and PM2220), were connected to the PME Server through the facility intranet and only accessible to users within the company network. Ecostruxure PME delivers web-based applications including dashboards, diagrams, trends, alarms and reports with deep insights into electrical system performance, energy efficiency and power quality.

The salient features of the installation include;

- Accurate energy measurements according to IEC 62053 accuracy classes: Class 0.2S for incomers and Class 0.5S & Class 1.0 for submeters.
- Real time remote monitoring of all meters in all the data centres.
- Historical data storage both on the meters, gateways and the software server.
- Monthly energy usage, PUE, trend and comparison reports.
- Conformance to IEC62443 cyber security standard for Operational Technologies.

2.5 Power Monitoring System for a Major Telco in Tanzania (cont'd)

TECHNOLOGIES USED	
EcoStruxure™ Power Monitoring Expert (PME)	PowerLogic Power and Energy Meters

PROJECT CASE STUDY

2.6 Power Metering for a Major Supermarket Chain in Kenya

The supermarket chain has a commitment to reduce its CO2 emissions in line with net zero targets. To comply with this commitment, the store chain has installed a Retail Integrated Management Platform (IMP) for energy monitoring of the mains incomer and refrigeration units for 20+ stores located in Nairobi, Mombasa and Kisumu. The project comprised supply and installation of power meters and SpaceLogic automation servers. The power meters measure electrical parameters such as voltage, current, frequency, power, energy and harmonics and send the information to the automation servers. The automation servers are configured to store and trend data locally and relay the same to the IMP. IMP is a cloud-based multi-site facility management Software-as-a-Service (SaaS) Solution that connects and provides full 24/7 control and insights across entire retail enterprise including electrical distribution and refrigeration. It enables operation efficiency, energy efficiency and cost saving for multi-site supermarket chains.

The salient features of the installation include;

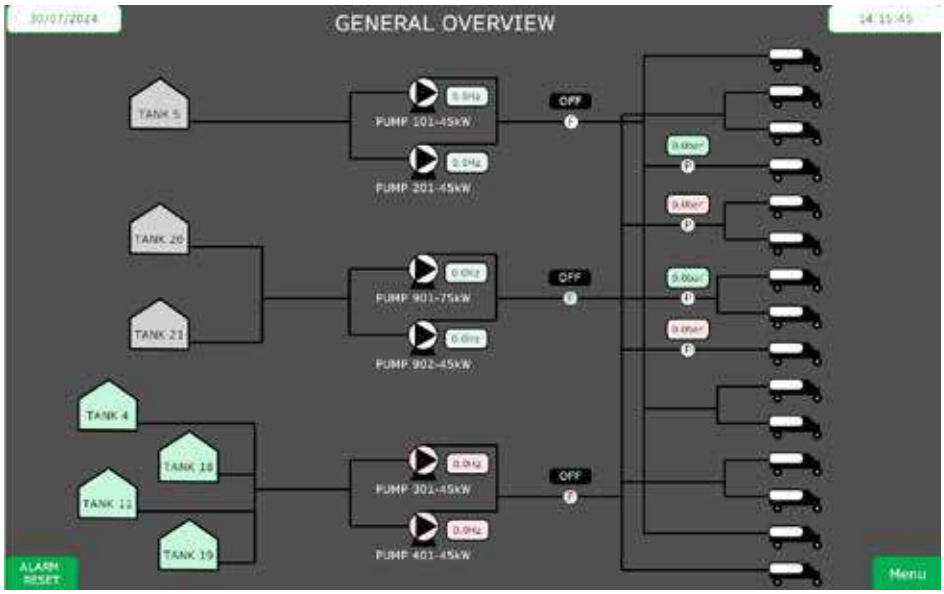
- Accurate energy measurements according to IEC 62053-21 Class 1.0 standard.
- Real time local and remote monitoring of energy meters across all the stores.
- Local and cloud-based trend and historical data storage.

TECHNOLOGIES USED	
EcoStruxure™ Building Operation (EBO)	SpaceLogic™ AS-P Automation Server

PROJECT CASE STUDY

2.7 Automation of Loading System for a Leading Petroleum Distributor in Kenya

The scope of work undertaken included supply and installation of an automated control system for the loading pumps at one of the terminals. The system comprised Variable Frequency Drives for the pumps, pressure transducers, flow switches and a Programmable Logic Controller (PLC)-Human machine Interface (HMI) assembly. The key objectives of the project are to reduce energy consumption of the pumps by operating the pumps based on the loading demand and to automate the loading system thereby minimizing human errors and enhancing coordination in pump operation.



TECHNOLOGIES USED	
Altivar Process 630 Variable Frequency Drives VFD	EcoStruxure™ Operator Terminal Expert Harmony ST6 HMI

PROJECT CASE STUDY

2.8 Power Monitoring System for a Food Factory, Rwanda

The installation comprises of two advanced PM8240 power meters connected to a Ecostruxure Power Monitoring Expert server through the facility LAN for monitoring power at the supply and load distribution boards.

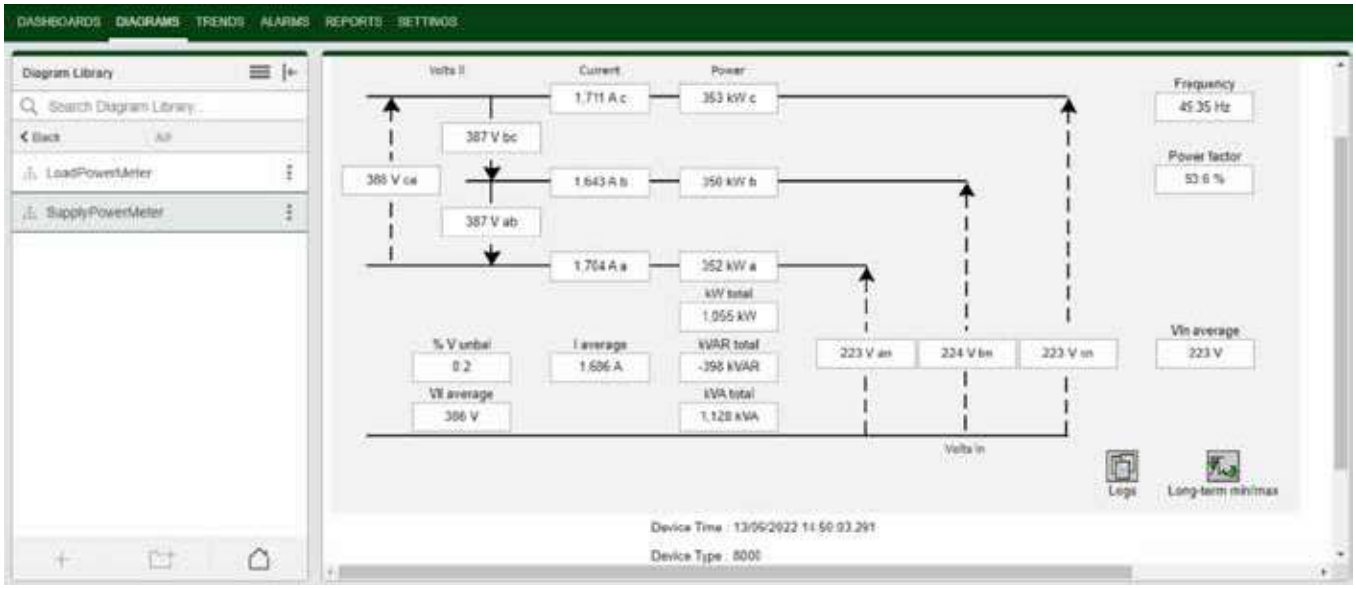
The meters are customized to perform counts for voltage and frequency going below/beyond the thresholds as prescribed by factory engineers.

Key features of the installation include;

- Advanced power meters with revenue grade accuracy 0.2s and integral power quality analysis.
- Volts/Hertz threshold violation detections
- Automatic daily energy usage and power quality report emailing
- Monthly energy consumption trend comparison

The deployed Power Monitoring Expert software simplifies power management providing rich energy visualization and power event analysis for more efficient and reliable operations. It features a comprehensive set of web-based applications including dashboards, diagrams, trends, alarms and reports to deliver deep insights into electrical system performance, energy efficiency and power quality. It is powerful, scalable, easy to use and designed to integrate into other management systems.

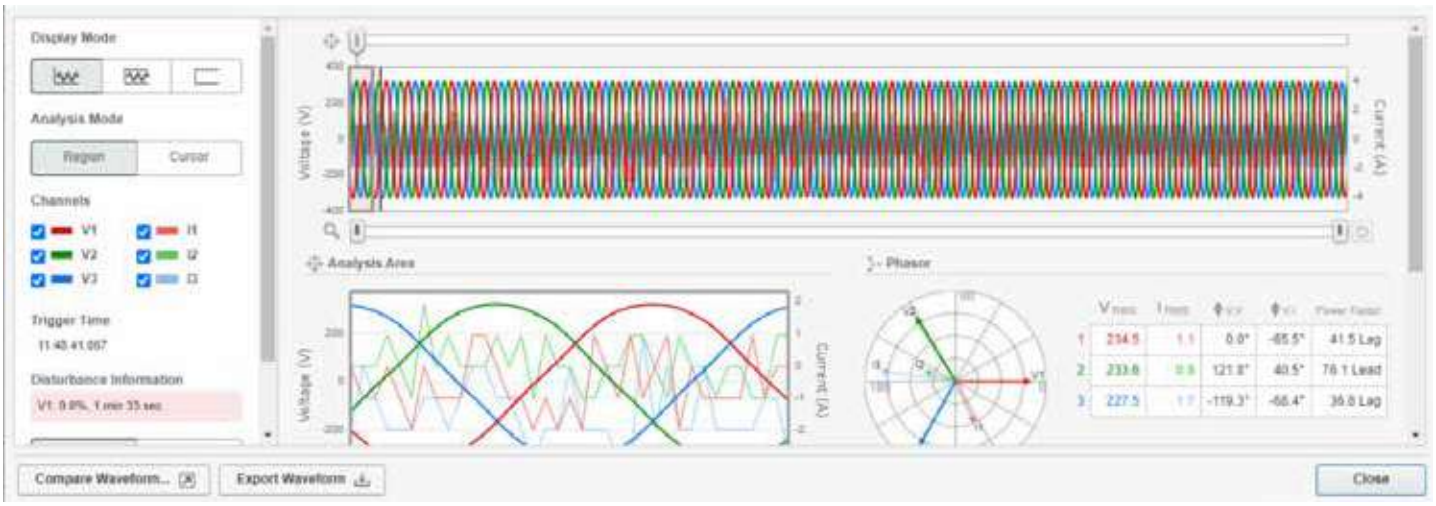
The PM8240 is a multi-functional power meter with advanced power quality analysis up to 63rd harmonic and energy measurement for reliability and efficiency of power-critical facilities. It reveals complex power quality conditions enabling action to be taken to mitigate any issue. It features patented Disturbance Direction Detection, sags and swells detection, revenue grade accuracy, multiple communication ports, onboard power quality analysis, web interface and a color graphical LCD display with configurable passwords.



TECHNOLOGIES USED	
EcoStruxure™ Power Monitoring Expert (PME)	PowerLogic Power and Energy Meters

PROJECT CASE STUDY

2.8 Power Monitoring System for a Food Factory, Rwanda (cont'd)



Control Interface

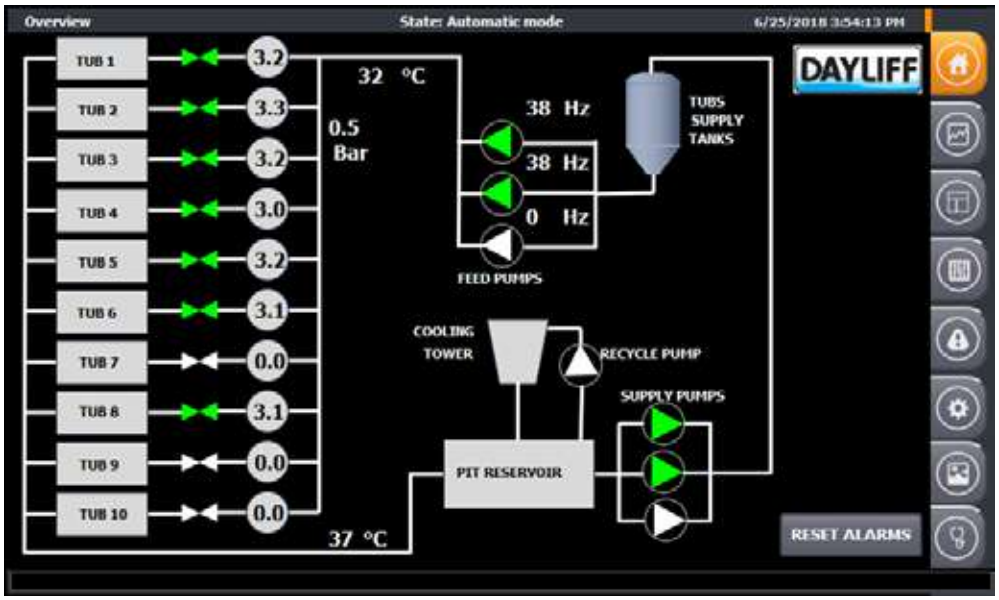
PROJECT CASE STUDY

2.9 Industrial Automation for a Battery Manufacturer

The system involved automation of factory cooling systems by controlling water flow rates, ensuring optimum battery charging temperatures and charging rates for defect free battery production. The cooling system is controlled from a single smart control panel that varies flow rates to the various battery tubs intelligently based on different system characteristics.

Key features include;

- Water conservation and improved quality control
- Improved system reliability and 10% improvement in production numbers



Monitoring Screen

Picture of the Factory

TECHNOLOGIES			
Siemens Simatic S7	Siemens Simatic Comfort HMI	Siemens Desigo CC Compact	Siemens V20 Drives

PROJECT CASE STUDY

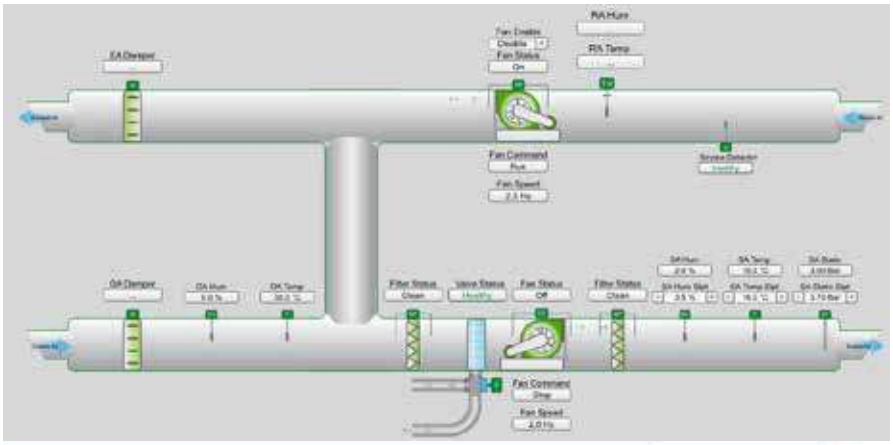
2.10 BMS System for a Hospital in Nairobi

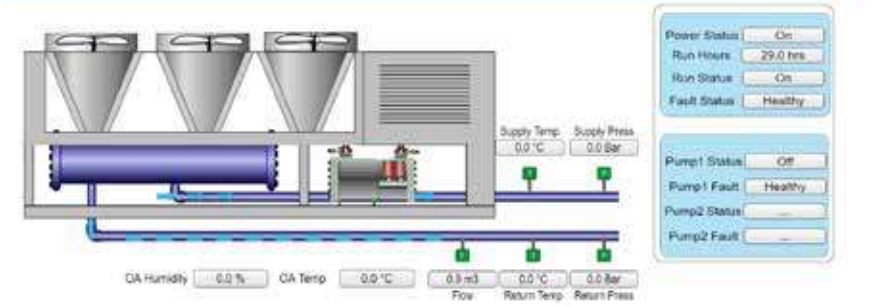
A Schneider Electric Automation Server AS-B was used to control and monitor the third floor HDU units HVAC system.

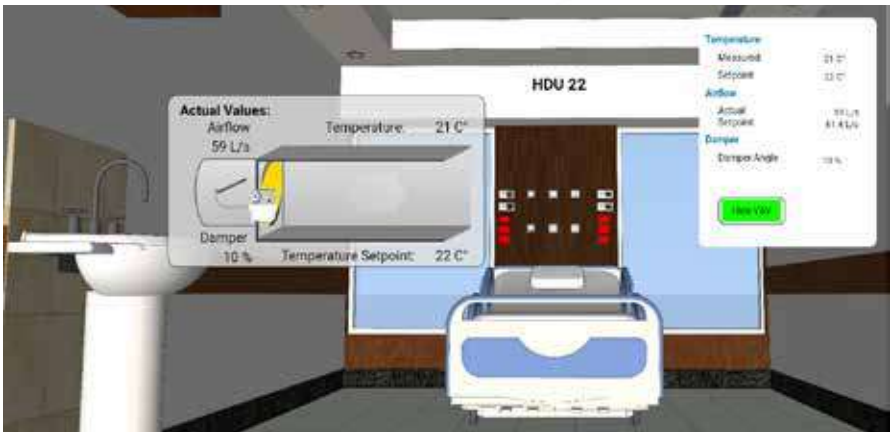
The system integrates third-party HVAC devices to the automation server through BACnet and Modbus RTU to display real time room temperature and airflow and equipment status.

Key system features include;

- Graphical display accessible through the intranet
- Automatic report generation and notification through emails
- Display and record of room condition trends







TECHNOLOGIES	
EcoStruxure™ Building Operation (EBO)	SpaceLogic™ AS-B Automation Server, SpaceLogic™ AS-P Automation Server

3 Water Supply Solutions

DavisandShirtliff.Com

PROJECT CASE STUDY

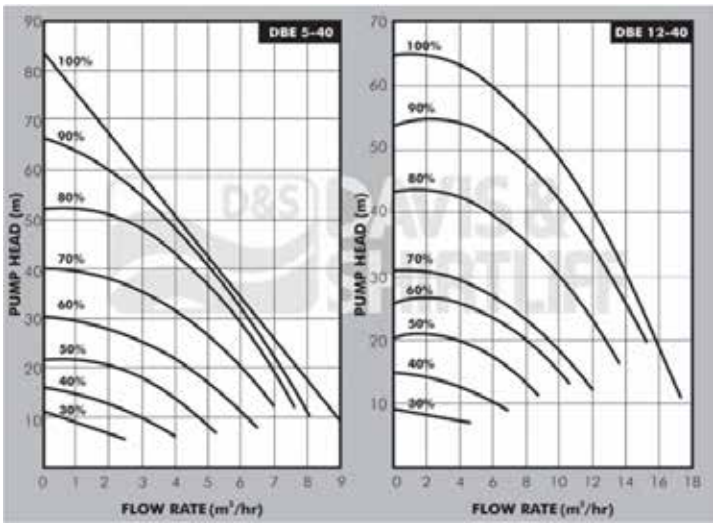
3.1 Intelligent Water Pump - Dayliff DBE

The Dayliff DBE Booster is a compact water boosting unit ideal for water supply in domestic and commercial applications for single and two booster pump systems.

The pump features special functional aspects including;

- Variable speed controller
- Compact for simple installation
- Quiet with low operating noise level
- Robust design for long life
- Automatic pump alternation in multi-pump setup
- Remote Wi-fi connectivity

Product pictures



Product performance sheet

Twin Pump setup under workshop testing

PROJECT CASE STUDY

3.2 Smart VFD Pump for 43 Unit Apartment Block

A residential apartment block in Westlands with over 40 unique villas wanted to optimise the power costs for running their water distribution system for all the units. Each unit has a varying water demand throughout the day, as the 9 storey building has different sized apartments and villas.

- 10 Three bedroom Sky Villas
- 18 Four bedroom Sky Villas
- 3 Four bedroom Penthouses
- 5 Five bedroom Sky Villas
- 5 Five bedroom Garden Villas
- 2 Five bedroom Duplex Penthouses

Dayliff DIX smart pump set with integrated VFD controller was proposed as a solution. The team supplied and successfully commissioned a set of 2 DIX pumps, each with a VFD controller that ensures the pump provides the required amount of water at the required pressure, depending on the cumulative water demands of all the units. The solution ensures optimal power consumption as the pumps are always running at best efficiency.

DIX at the workshop during testing

DIX smart pumps installed at a 43 unit apartment block on General Mathenge Drive

DIX pumps at the workshop

PROJECT CASE STUDY

3.3 VFD Controlled Pumpset for a Dairy

A demand-driven variable speed pumpset to supply pressurized water to a milk processing plant.

Key pump set features;

- Dayliff DIN Vertical Pumps
- Dayliff Pumpverter VFD
- High quality fittings and manifolds

Product pictures

PROJECT CASE STUDY

3.4 VFD Controlled Pumpset for a Private Hospital in Mombasa

A smart pumping system for water supply capable of delivering 60,000L of water per hour at constant pressure.

Key pump set features;

- 4No Dayliff DIN Vertical Pumps
- 4No Dayliff Pumpverter VFD
- High quality fittings and manifolds

Pictures of the equipment under workshop testing

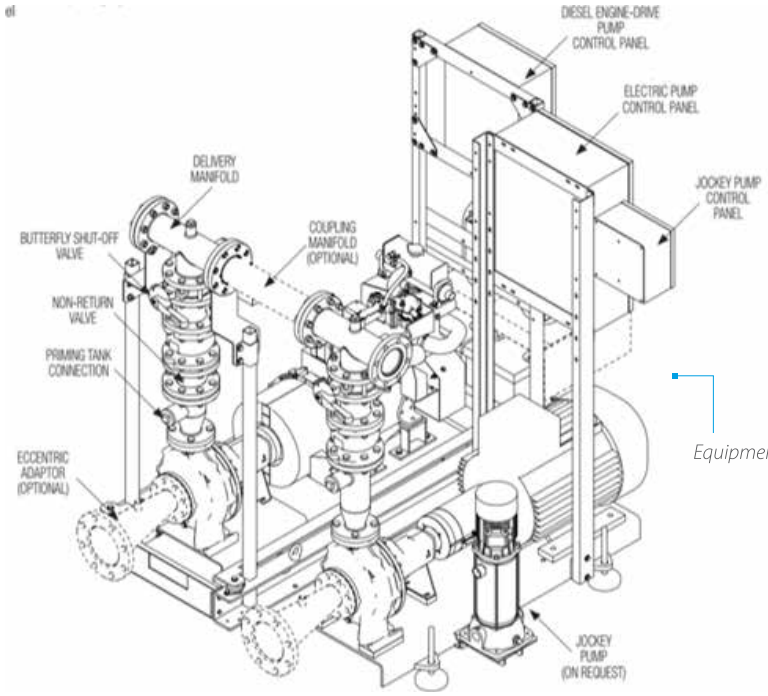
PROJECT CASE STUDY

3.5 Dayliff FLEN Fire Pump for a Shopping Mall

The supplied solution, a Dayliff FLEN packaged Fire Set, is specially designed to provide automatic water supply to fixed automatic firefighting installations. The set combines single duty diesel and electric power supply pumps to ensure serviceability in all conditions as well as a jockey pump to maintain system pressure.

Key Fire Set features;

- Conform to the BS EN12845 standard
- Short Leadtime: Delivery at a maximum of 2 weeks from order.
- Support: Unmatched support in terms of spares, field support with 24-hrs
- Pricing: Competitively priced



Equipment Labelled Drawing

Fire Set undergoing workshop testing

Another unit under workshop assembly

PROJECT CASE STUDY

3.6 Municipal Water Supply Project in Kigoma Region in Tanzania

Rovatti Pompe are robust Italian made industrial quality high performance pumps with flows upto 1300m3/h and heads of upto 700m. The pumps are available in a combination of materials including electroplated cast iron, various grades of Cast Stainless Steel and bronze/brass impellers. They are suitable for applications in municipal water, irrigation and industrial applications.
Submersible waste water pumps are available with high flows of 475m3/h and upto 45m head. An optional automatic coupling foot and guide rail system is provided for ease of lifting the pump out of the sump for quick maintenance. Overall maintenance downtime is reduced with the auto coupler/duck foot. These pumps are suitable for treatment plants, storm water collection, underground tanks and general liquid transfer.

Rovatti Pumps Used;

I. Low lift Pumps: Rovatti Submersible Electric Pumps

The team at Davis and Shirtliff proposed 2No. Rovatti submersible electric pumps due to their high solids handling capacity. These pumps are available in single, double channel or vortex impeller design and are suitable for the high silt content experienced during the rainy season as well as large solids handling without blocking. These are low maintenance pumps, pictured below.

Rovatti Electric submersible pump delivered to site. The pump was submerged in the sump at site

II. High lift Pumps: Rovatti Vertical Multistage Pumps

Rovatti Vertical Close Coupled Multistage pumps were selected for their high head, robustness and high efficiency. These pumps served as the high lift pumps, transferring the treated water from the plant to the storage tanks, with a total dynamic head close to 220m.

Rovatti Multistage Pumps Installed in the pump room at Kifura

PROJECT CASE STUDY

3.7 Flowserve Liquid CO_2 Process Pump for a Renown Brewery

Flowserve process pumps are industrial pumps built for reliability in handling the most demanding fluids. From CIP process to liquids with pH as low as 2 and high vacuums, Flowserve will offer bespoke pumps, general process pumps and seals for every flow application available.

One of the largest breweries in Uganda wanted a robust, time-tested and reliable solution for CO_2 process pumps. They were experiencing leakages and required an urgent, permanent solution. The renowned brewery needed a pump that they could depend on to transfer carbon (IV) oxide for carbonation in the packaging lines, flushing of process lines and blanketing.

The Uganda Commercial Sales team recommended a Flowserve CO_2 process pump. These are pumps specially designed to move liquid CO_2 reliably and maintain the system up-time.

Flowserve CO_2 Process Pumps Packed for delivery

PROJECT CASE STUDY

3.7 | Flowserve Liquid CO_2 Process Pump for a Renown Brewery (cont'd)

Flowserve pumps delivered to site ready for installation

4 Solar


DavisandShirtliff.Com

PROJECT CASE STUDY

4.1 300.7kWp Grid-Connect System

Davis & Shirtliff installed a 300.7kWp Solar Grid-Connect Power System at a leading paediatric facility in Kenya serving over 9,000 children annually. Historically, the hospital relied almost entirely on utility power. To address rising operational costs and improve environmental sustainability, a grid-tied solution was designed and installed.

The project involved the engineering, supply, installation, and commissioning of a 300kW grid-tied solar PV system, which comprises:

- 485No. 620Wp high-efficiency monocrystalline PV panels, mounted across multiple roof structures
- 2No. 150kW three-phase grid-tie string inverters with smart MPPT power tracking
- Comprehensive AC and DC protections, isolators, and surge protection devices
- Real-time remote monitoring system for energy performance insights
- Seamless integration with Kenya Power and the hospital's existing standby generator

The system is designed to:

- Generate over 450,000 kWh annually
- Offset 35–40% of the hospital's daytime electrical demand

It includes a cloud-based solar monitoring platform, offering:

- Real-time performance tracking
- Inverter-level diagnostics
- Daily and monthly energy reports
- Automated fault alerts

A long-term maintenance plan is also in place, which covers: Preventive servicing, Panel cleaning, Electrical system checks and 24/7 technical support

Financial and Environmental Benefits;

- Saves approximately 40% of electricity costs during daytime operation
- Reduces monthly electricity bills by 25–30%
- Achieves full return on investment in 2–3 years
- Provides clean, free energy for over 25 years with minimal maintenance
- Offsets over 320 tonnes of CO_2 emissions annually, equivalent to planting more than 5,000 trees per year

This project is part of Davis & Shirtliff's growing Commercial & Industrial (C&I) solar portfolio, supporting organizations across Africa to:

- Become energy independent
- Reduce operating costs
- Align with global sustainability standards

D&S Solar Support capabilities include:

- In-house system design and engineering
- Supply of certified Tier-1 components
- Expert installation and commissioning
- Remote monitoring and unmatched after-sales support through our regional footprint

PROJECT CASE STUDY

4.1 300.7kWp Grid-Connect System (cont'd)

This initiative demonstrates how renewable energy delivers both economic value and environmental stewardship, especially for essential institutions like hospitals, where power reliability and operational efficiency are critical.

Installed Site Pictures

PROJECT CASE STUDY

4.2 1183.7kWp Solar Grid Tie System

A leading private utility company, operating an 11kV and 33kV mini-grid with an approximate annual energy demand of 30 GWh, partnered with Davis & Shirtliff to augment its generation capacity with a distributed solar PV system. The project was executed under a roof-lease agreement at Davis & Shirtliff's facility, representing a model for commercial and industrial (C&I) distributed generation integration.

Davis & Shirtliff provided a comprehensive turnkey solution for a 1.18 MWp grid-tied solar PV system, meticulously engineered to optimize energy production within the available mounting space. The system is projected to generate approximately 1.5 GWh of clean electricity annually, delivering substantial economic and environmental benefits:

This solar initiative will:

- Offset approximately 1,200 tonnes of CO_2 emissions annually, reducing the project's carbon footprint and supporting Kenya's clean energy transition
- Save an estimated 30–40% on electricity costs for the operator by reducing dependence on expensive fossil-fuel-based grid supply
- Promote energy independence and long-term price stability in power provision

The project underscores Davis & Shirtliff's commitment and leadership in deploying innovative, sustainable infrastructure across Africa.

Site Pictures

PROJECT CASE STUDY

4.3 Solarization of Borehole Water Supply

A commercial water utility, operating several boreholes for its piped water network, traditionally relied entirely on grid electricity for its pumping operations. Seeking to mitigate rising energy costs and build a more resilient, sustainable operation, the company engaged D&S Engineering for a renewable energy alternative.

D&S Engineering provided a complete design-and-build service, deploying a solar-powered pumping system engineered to meet the specific water output requirements of the boreholes.

The project covered three borehole sites, each with a solar setup tailored to site-specific water demands and energy needs:

- 1No. Site included:
  - 40No. 350W Solar Modules (Total: 14kWp)
  - 30kW Dayliff Sunverter SV3
- 2No. Sites included:
  - 40No. 545W Solar Modules per site (Total: 21.8kWp per site)
  - 37kW Dayliff Sunverter SV3 per site

Environmental Benefits

- **Carbon Emission Reduction:**

The solar system offsets significant grid electricity use, reducing carbon emissions by approximately 105 tonnes of CO_2 per year across the three sites.

- **Sustainability:**

The project supports climate action and water security by reducing reliance on fossil fuels and aligning with sustainable development goals.

Financial Benefits

- **Electricity Cost Savings:**

With electricity cost savings exceeding 90%, the project significantly lowers operational expenses, allowing Lolomarik to channel savings into service improvement and expansion.

- **Low Maintenance:**

Solar systems reduce ongoing maintenance costs compared to diesel or grid-reliant alternatives, increasing system uptime and dependability.

Return on Investment (ROI): The solar solution offers an attractive ROI of 2–3 years, making it a financially sound investment. Beyond this period, the system delivers substantial long-term savings and enhances operational resilience.
With all systems integrated into the iDayliff remote monitoring platform, Lolomarik can efficiently manage performance and system health in real time. This project demonstrates the transformative impact of renewable energy on rural and peri-urban water infrastructure—delivering measurable environmental and financial returns.

Installed Site Pictures

PROJECT CASE STUDY

4.4 Solar Hybrid Power Solution for a Technical College in Tanzania

A leading technical college faced persistent power outages and high electricity costs that disrupted its engineering and technology programs. To address this, the college partnered with Davis & Shirtliff for a sustainable energy solution.

Davis & Shirtliff implemented a 24 kW solar PV system with 20 kWh of battery storage. The hybrid solution provides reliable backup power for critical loads and significantly reduces grid dependency.

Key Outcomes

- 60% reduction in grid electricity consumption
- 6–7 year ROI with substantial operational savings
- 14 tonnes of annual CO_2 emissions avoided
- Uninterrupted power for critical learning activities

This project demonstrates how renewable energy solutions can enhance educational resilience, reduce operational costs, and support sustainability goals in technical institutions.

Installed Site Pictures

PROJECT CASE STUDY

4.5 | 80.64kWp + 300kWh Solar Project, Arusha

To address high electricity costs and unreliable grid power, a leading learning institution partnered with Davis & Shirtliff to implement a comprehensive energy solution.

D&S designed and installed an 80.64 kWp solar carport system integrated with 300 kWh of battery storage. This innovative approach efficiently utilizes parking space while generating clean energy and maintaining campus aesthetics.

The system ensures uninterrupted power for critical operations while significantly reducing electricity costs. Delivered through D&S's in-house engineering capabilities, the solution provides a robust foundation for future expansion.

Environmental and Financial Impact:

The solar system offsets a significant portion of the institution's grid electricity usage, leading to an estimated 40–50% reduction in electricity bills. The shift to clean energy helps the institution cut down carbon emissions by approximately 85 tonnes of CO_2 annually, aligning with global sustainability goals.

The battery storage ensures continuity during outages, reducing generator reliance and diesel consumption.

Return on Investment (ROI):

With substantial energy savings and minimized generator use, the project is expected to achieve a payback period of approximately 7 years, after which institution will continue to benefit from low operational costs and increased energy independence.

Installed Site Pictures

PROJECT CASE STUDY

4.6 150kW Grid Tie System for a Specialized Medical Centre

A leading specialized health centre in East Africa, providing critical care to thousands of patients daily, faced escalating electricity costs exceeding USD 10,000 monthly. Seeking to maintain operational excellence while reducing expenses, the centre partnered with Davis & Shirtliff for a sustainable energy solution.

Following a comprehensive energy audit, Davis & Shirtliff designed and implemented a 150-kW grid-tied solar photovoltaic system. The installation was completed seamlessly without disrupting healthcare services and is projected to generate 150 MWh of clean energy annually.

Environmental & Financial Impact;

- Carbon Reduction: Offsets 105 tonnes of CO_2 annually, equivalent to planting 1,700 trees each year
- Financial Returns: Achieves ROI within 2-3 years through significant electricity cost savings
- Operational Efficiency: Maintains uninterrupted healthcare service delivery while reducing energy expenses

This initiative exemplifies Davis & Shirtliff's unwavering commitment to enhancing operational efficiency and promoting sustainable energy practices within critical service sectors such as healthcare. In light of increasing electricity expenses, estimated at approximately USD 10,000 annually, the facility identified the need for a sustainable and cost-effective energy solution that would not compromise the quality or continuity of healthcare service delivery.

PROJECT CASE STUDY

4.7 Solar Hot Water System for an Advanced Institute for Science and Technology

A premier technology institute, modeled on international standards of innovation and situated on an expansive modern campus, sought to bolster its sustainability credentials and reduce operational costs. The primary objective was to eliminate the reliance on conventional electricity and fuels for water heating across its facilities.

Davis & Shirtliff was engaged to provide a comprehensive, campus-wide solar hot water heating solution. The project was designed to deliver an environmentally sustainable and cost-effective hot water supply for both student housing and educational buildings.

The turnkey solution encompassed end-to-end services:

- Supply of high-efficiency HP200 premium solar collectors, piping, and intelligent control systems
- Seamless installation and integration with the existing plumbing and storage infrastructure
- Full testing, commissioning, and performance validation
- Comprehensive training for the institute's maintenance personnel
- Post-installation support and warranty services

A total of 435 high-efficiency solar collectors were installed across the campus's housing (231) and education (204) facilities.

This large-scale installation represents a strategic investment in sustainable infrastructure, directly supporting the institute's commitment to innovation and environmental stewardship. The system ensures a reliable supply of hot water while achieving significant reductions in energy consumption and operational costs, demonstrating a practical application of green technology in an academic environment.

Installed Site Pictures

PROJECT CASE STUDY

4.8 132kW Solar Grid Connect Power Generation Plant

A solution for a community based water treatment plant serving over 65,000 people, an equivalent of 7,500 households, in Matayos and Teso South Sub-Counties.

The Water Supply Plant operates on electricity from the utility power supplier with some of the major loads consisting of 90kW induction motors, 30kW induction motors, 22kW induction motor for the blower, and 0.75kW synchronous motors for chemical stirrers. The County decided to undertake a Grid Tie Solar system to develop a reliable and efficient system that will use mostly solar energy during the day and electricity at night hence helping in reducing the power bills.

D&S Engineering installed and commissioned a 132kWp Solar Grid Tie System to power the Water Treatment plant, based on the available mounting space provided by the County.

The system is expected to generate about 200MWh of solar energy annually and will help to reduce power bills significantly.

Site Pictures

PROJECT CASE STUDY

4.9 100kW Solar Grid Connect System for a Refugee Camp

A 100kW solar system with batteries and generator to power the compound of a refugee camp run by UNHCR, with estimated load of 120kW.

Key system features;

- 400No 250W Yingli modules, ground mounted
- 5No SMA STP20000TL Tripower Inverters
- 9No SMA SI6.0 Sunny Island Inverters
- 96No 2160, 2VDC batteries
- 150kW Perkins generator
- Sunny manager for remote monitoring

Installed Site Pictures

PROJECT CASE STUDY

4.10 Joska Solarized Boreholes

A solarization solution was required by a commercial supplier of piped water to local residents from several boreholes powered by mains electricity.

D&S Engineering proposed a series of designs to optimize cost savings and long term sustainability.

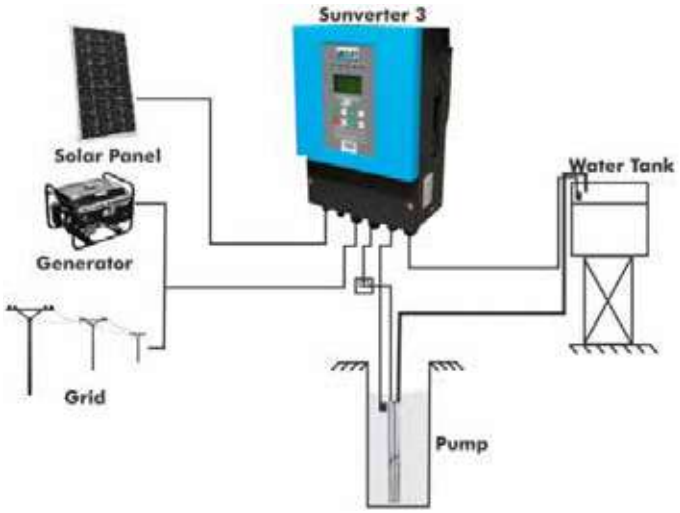
4No sites included;

- 108No 335W Solar Modules
- 22kW Dayliff Sunverter SV3

2No sites included;

- 72No 335W Solar Modules
- 15kW Dayliff Sunverter SV3

Electricity cost savings - >80%, and the client is able the remotely monitor the system through iDayliff remote monitoring and control.



System Architecture Pictorial Representation

Site Picture

PROJECT CASE STUDY

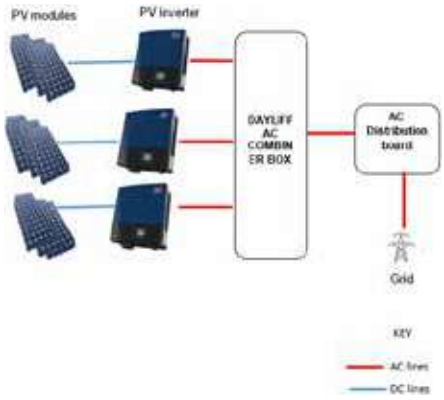
4.11 A Resort and Conference Centre in Nairobi

The institution was facing high electricity bills, and contacted D&S Engineering to carry out a power audit to identify specific power consuming areas where renewable energy options were required including;

- Cold swimming pool
- Use of Geysers
- Use of mains power for lights, sockets and laundry

Proposed Solution;

- 70kW Grid-Tie Solar PV System
- Heat Pump for swimming pool heating
- 600 Micron Pool cover to retain heat
- 12,000L Solar Water Heating System



System Architecture

Site Pictures

5 Water Treatment

PROJECT CASE STUDY

5.1 Nano-Ultrafiltration Plant for a Hospital

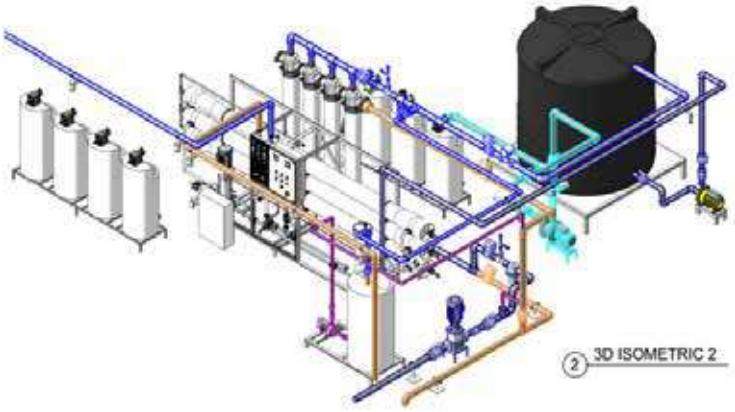
System Stages;

- Dayliff Ultrafiltration
- Dayliff Nanofiltration
- Chlorination

D&S Engineering were commissioned to design, manufacture, supply and install an Ultrafiltration-Nanofiltration water purification plant to provide clean water for a large hospital in Nairobi.

The 15m^3/hr Dayliff Ultrafiltration (UF) plant was used as a pre-treatment for the 12m^3/hr Dayliff Nanofiltration (NF) Plant.

This technology typically operates at a lower feed pressure compared to Reverse Osmosis Plant translating into significantly lower operational costs.
The Hospital now uses the Dayliff UF - NF plant for removal of colour, organic molecules, hardness and heavy metals in the borehole water at the site, providing clean potable water for use to the hospital and community.



As Built Plant drawing

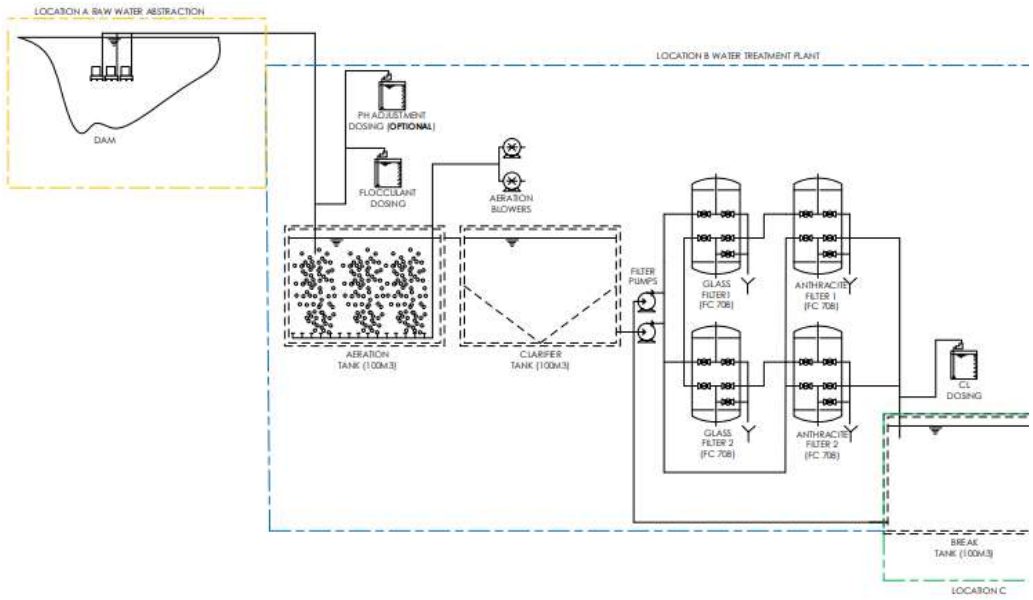
Completed Installation on site

5.1 Nano-Ultrafiltration Plant for a Hospital (cont'd)

A Water Treatment System designed for a development client to treat dam water at a specified volume of 2,500m^3/day with provisions for future expansion to 5,000m^3/day. The Plant is a self-contained unit, with five water treatment stages and is ideal for large scale water supplies. The stages in sequential order are Flocculation, Aeration which serves to aerate the raw water, Settlement of the raw water sediments, Filtration, and Chlorination.

The Dayliff 2,500m^3/day Water Treatment Plant during operation starts with incoming raw water flowing through the first dosing pump where it is dosed with a flocculant to aid in particle settlement.

Water then flows via a supply pipe to the base of the Aeration Tank from where it slowly rises and overflows into the clarifier tank and pumped through a Glass & Anthracite media filter for filtration. The water is then dosed with chlorine as it goes to the control tank before it's pumped to the consumption point. The chlorine dosed at this point is used to kill bacteria and pathogens present in the pre-treated water before consumption.



Plant Schematic Diagram

Site Pictures

PROJECT CASE STUDY

5.2 Water Treatment Plant for a Religious Organization

Plant stages;

- Pre-filtration
- Iron Removal
- Activated Carbon Filtration
- Reverse Osmosis

The organization is located in Nairobi and has a borehole which they have been dependent on for the provision of water within their facility. However, this water tested high in Iron and Flouride, rendering it unfit for human consumption.

D&S Engineering designed a suitable and cost-effective solution for removing these elements. The design entailed four main stages; Pre-filtration, Iron Removal, Activated Carbon Filtration and Reverse Osmosis with a capacity to treat their borehole yield of 4m^3/hr to produce at least 2m^3/hr.

Site Pictures

PROJECT CASE STUDY

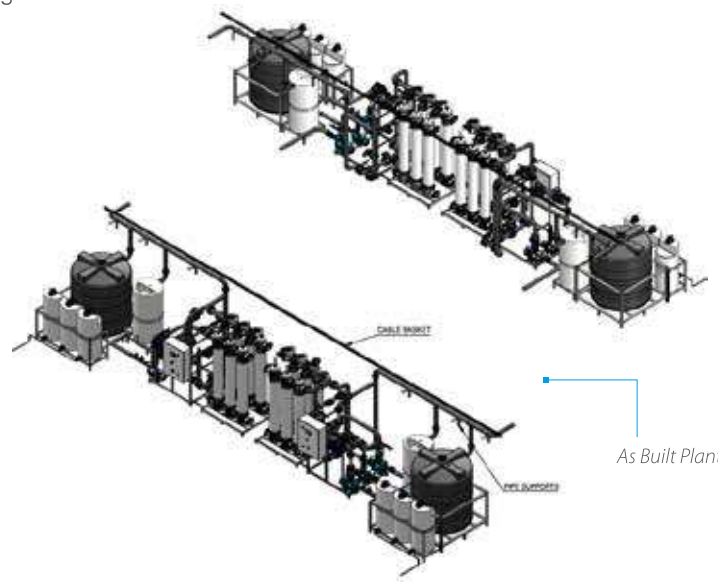
5.3 Containerized WTP for a Hospital in Lusaka

The hospital located in Lusaka, Zambia, required a packaged water treatment solution to treat the water fed into the hospital from the municipal line as well as provide pre-treatment of their borehole water to suitable levels for feeding into a reverse osmosis plant.

D&S Engineering was engaged to design two water treatment plants each of similar capacity, 40m^3/hr, which included;

- Multicyclone centrifuge filters for the removal of larger suspended particles of 40 – 80 micron to increase the filtration cycle of the Ultrafiltration plant
- Ultrafiltration treatment system c/w robust UF modules with a recovery of 97.7% For ease of transportation and handling the plant was designed using 12No IP-51 modules achieving a flux of 70LMH and all the equipment fitted into a 20ft container

The Ultrafiltration system is based on size exclusion and is effective in the removal of all suspended material to the size of 0.02mic. The system comes complete with post-chlorine disinfection to provide for residual disinfection of the treated water and the hospital now has a consistent source of clean potable water that meets WHO and local drinking standards.



As Built Plant drawing

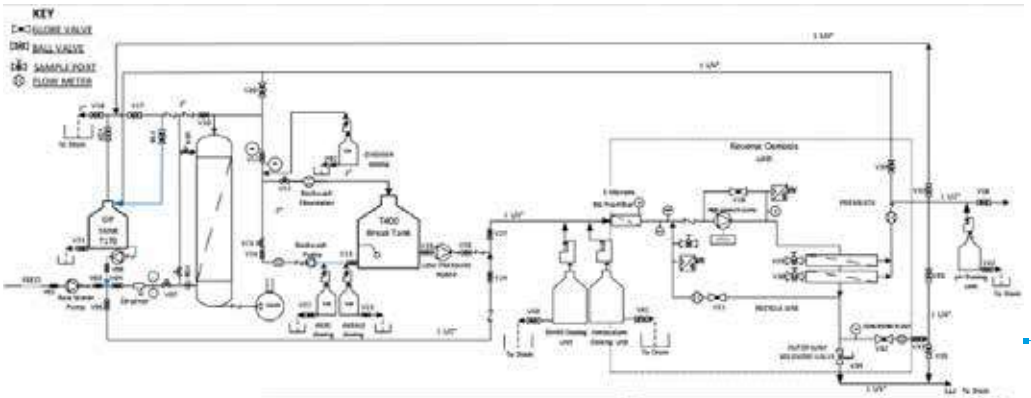
Plant Pictures

PROJECT CASE STUDY

5.4 Containerized WTP for an NGO in Somali

The plant included a 10m³/hr Dayliff Ultrafiltration Plant upstream of the 6m³/hr Dayliff Reverse Osmosis plant. The Dayliff Ultrafiltration acted as a pretreament to the Dayliff Reverse Osmosis plant and included smart PLC based Control Panel that controlled the operation of the electric actuated ball valves and pressure transducers that controlled the different Ultrafiltration plant processes for the smooth operation of the plant.

Pre-treated water from the Ultrafiltration plant was then transferred to the 600l break tank (T600) where the Dayliff Reverse Osmosis Plant low pressure pump would draw the water and transfer the water to the High Pressure pump of the Dayliff Reverse Osmosis plant for treatment before finally being transferred to the clean water storage tank. The break tank included several float switches controlled from both the Ultrafiltration and reverse osmosis control panels to ensure smooth operation of two plants within the container.



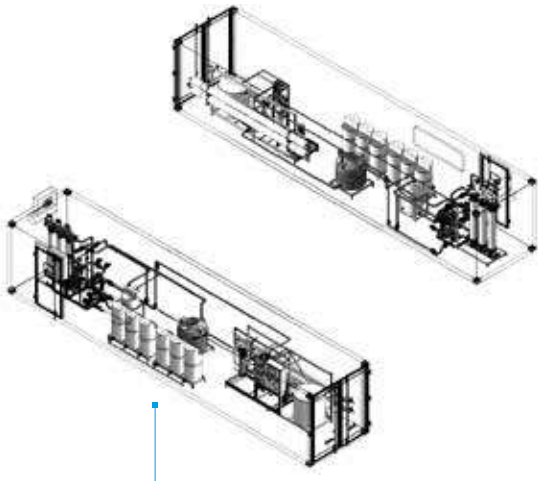
DUF FILTRATION & BACKWASH	
Open/Close	SET MANUAL VALVE AS PER BELOW
Open	V01,V03,V04,V11,V13,V14,V17,V18
Close	V06,V05,V20,V16,V19,V21,V22,V23,V02
FILTRATION & BACKWASH OPERATION	

RO OPERATION	
Open/Close	SET MANUAL VALVE AS PER BELOW
Open	V25,V26,V27,V28*,V31*,V32*,V33,V35,V38
Close	V24,V29,V30,V40,V41,V36,V39,V37,V42
REVERSE OSMOSIS	

DUF CIP	
Open/Close	SET MANUAL VALVE AS PER BELOW
Open	V06,V10
Close	V01,V03,V17,V18
DUF CLEANING IN PLACE (DUF CIP)	

RO CIP	
Open/Close	SET MANUAL VALVE AS PER BELOW
Open	V06,V05,V24,V36,V37,V19
Close	V01,V03,V04,V26,V35,V38,V18,V17,V21
RO CLEANING IN PLACE (RO CIP)	

Design P&ID



As built Plant Drawing

Completed assembly of the water treatment plant

PROJECT CASE STUDY

5.5 Engineered Solutions for an Industrial Estate

5.2.1 2500m³/h Water Treatment Plant

A Water Treatment System designed for a development client to treat dam water at a specified volume of 2,500m³/day with provisions for future expansion to 5,000m³/day. The Plant is a self-contained unit, with five water treatment stages and is ideal for large scale water supplies. The stages in sequential order are Flocculation, Aeration which serves to aerate the raw water, Settlement of the raw water sediments, Filtration, and Chlorination.

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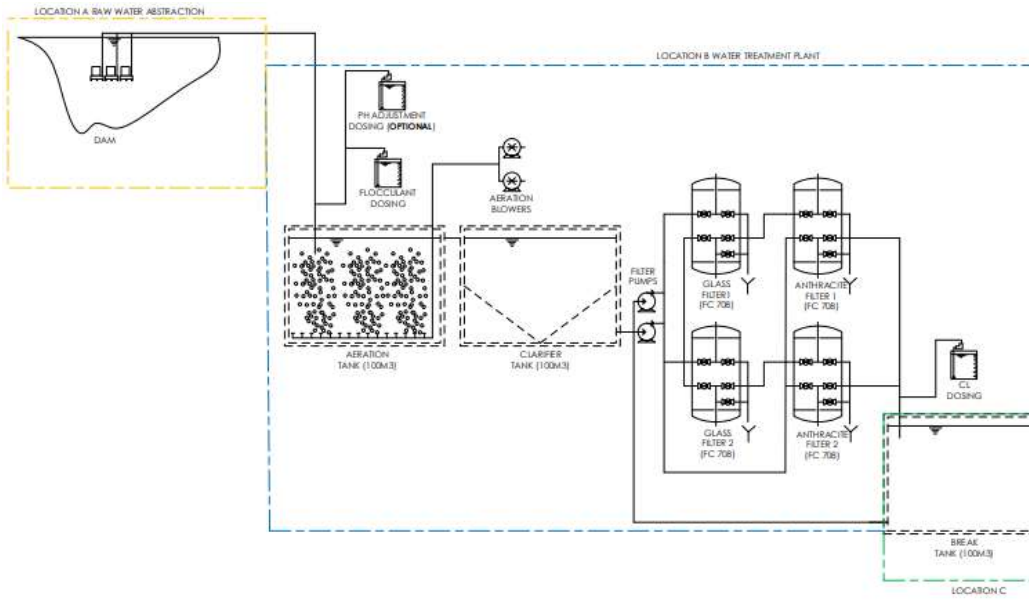


Plant Schematic Diagram

Site Pictures

PROJECT CASE STUDY

5.5 Engineered Solutions for an Industrial Estate (cont'd)

5.2.2 Pontoon and Power generator

In the same site, D&S Engineering was also tasked to design, fabricate and install a floating pontoon to anchor the raw water abstraction pumps deep and towards the center of the dam.

The pontoon eventually served as a floating bridge which improved the aesthetic appeal of the dam.

To provide back up power for the treatment plant, Davis and Shirtliff also supplied and installed a standby 30kVA prime rated power generator which is capable to power the whole plant in case of mains power blackout.

The Pontoon as installed on site

Installed generator

DAYLIFF

Dependable Quality

WATER TREATMENT

SOLUTIONS

The Brand of

D&S DAVIS & SHIRTLIFF

know H_2Ow through experience

PURE WATER. SMART SOLUTIONS, ADVANCED REVERSE OSMOSIS SYSTEMS, TREATMENT CHEMICALS FOR DOMESTIC, COMMERCIAL AND INDUSTRIAL USE

DavisandShirtliff.Com

6 Pools & Water Features


DavisandShirtliff.Com

PROJECT CASE STUDY

6.1 Swimming Pool for High-end Apartments, Nairobi

An ultra-luxury pool design was developed or high-end apartments located in Nairobi, at the top of a 19-storey central building. The developer contracted D&S Engineering to design and install swimming pool and water features on the top of the building and at the reception area.

The scope included design and installation of equipment for;

- 3No infinity swimming pools
- Jacuzzis (4 indoor and outdoor)
- Steam and Sauna

Bar Swimming Pool & Ground water feature under construction

Bar pool and 19th floor fountain

Main Pool and reception fountain

PROJECT CASE STUDY

6.2 Water Feature for a Mall in Nairobi

D&S Engineering developed an artificial river with water filtration system and waterfall features at a leading leisure mall in Nairobi. The projected scope included filters, pumps and controllers for the dancing fountains installed on a 500m artificial river and holding 3,000,000l of water including a 20m wide waterfall.

D&S Engineering designed and assembled the BMS control panels to control all the 23No pumps supplying the river and waterfall for the mall.

Site Pictures

6.3 Water Play Park for a Mall in Nairobi

The Water Play Park consists of activators and controllers that sequence the flow of water to various water features creating an interactive play environment for children. D&S Engineering was contracted by the mall developer to equip and install water play park with sustainability in mind.

Key project features included;

- Installation of water feature components (water jets, cascade water features and soft flooring at water play area)
- Installation of water filtration system for the water spray park.
- Installation, testing and commissioning of the pumping units and interactive water spray park

Water play area under construction

Water play area on completion

6.3 | Water Play Park for a Mall in Nairobi (cont'd)

Site Pictures

7 Irrigation


DavisandShirtliff.Com

PROJECT CASE STUDY

7.1 Konza Technopolis Irrigation Works

Konza Technopolis is a flagship project of the Government of Kenya, developing as a Science Park and area of Innovation within largest smart city project in East and central Africa. Impresa Construzioni Maltauro (ICM), who are the project managers, required a smart irrigation system that will use treated water from their Water Reclamation Facility (WRF) to irrigate the Parks, Auto-boulevard, streetscape, Green Transport Corridor (GTC) and the stadia. There was a need of irrigation controls to be integrated with the city's Building Management Systems (BMS) to allow for centralized control and monitoring of irrigation leading to water conservation and operational efficiency.

The salient features of the installation include;

- Hunter ACC2 controller with multi-flow monitoring and management capabilities made it best choice for this kind of complexity. We had 2No. ACC2 Controllers commanding a total of 180 2" ICV Valves. The controllers were complete with A2C LAN and Field Server for BMS system integration.
- HDPE reticulation network made up of DN63, DN50 and DN16 PN8 totalling to 100,000M.
- A combination of rotors and sprays. Hunter I-25 Rotors for the stadium, Hunter PGP rotors for the parks and Hunter PS Ultra sprays for the streetscape and Auto-boulevard. A total number of 4000 sprinklers were used.
- 21,000M of 4mm2 Shielded twisted pair irrigation communication cable.
- Around 40,000 number button drippers to deliver water directly to tree pits along the streetscape as well as some sections of the Green Transport Corridor.

Site Pictures

PROJECT CASE STUDY

7.2 Play Fields for a College in Nairobi

This Academy is a state of the art, co-educational and residential High School. To nurture learners who are principled, reflective and open-minded in line with their mission, the Academy approached Davis and Shirtliff for an automated state of the art irrigation system to irrigate their six soccer fields some of which are artificial turf. The system was designed to improve water management and maintenance by use of timers and sensors to trigger automated watering cycles to ensure consistent turf health.

The controllers used were Hunter HC controllers with WIFI capabilities with remote control features as well as access to cloud based Hydrawise for predictive watering.

The salient features of the installation include;

- Hunter I-25 rotors which are reliable, durable and versatile with an expansive nozzle selection that makes it perfect choice for large turf applications. They are adjustable from 50° to 360° 1" inlet, plastic riser, check valve and five nozzles included.
- Hunter HC 12-Station irrigation controller which is a Wi-Fi enabled device that utilizes Hydrawise technology for remote control and advanced features. This controller allows users to manage their irrigation system from anywhere using a smart device or web browser, optimizing water usage based on local weather conditions.
- Rain-Clik sensor which prevents water waste with a built-in Quick response technology that instantly shuts down irrigation as soon as it stats raining.
- The pump used was Grundfos CR 32-4 to deliver 25m^3/hr at 7 Bar pressure. Grundfos CR is a vertical multistage centrifugal pump designed for wide range of applications including irrigation. They are known for their energy efficiency and robust commercial and industrial settings.

Site Pictures

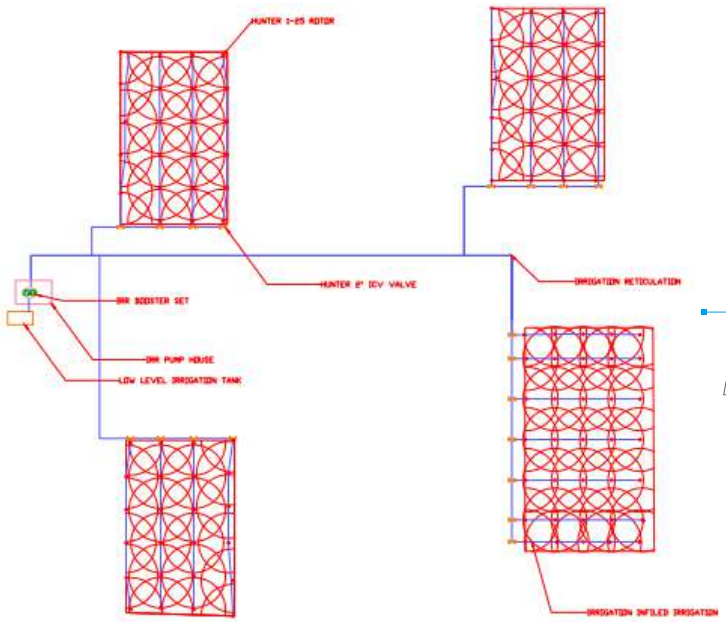
PROJECT CASE STUDY

7.3 National Sports Ground

D&S Engineering designed, installed and commissioned a fully automated irrigation system for a sporting compled which included 3No football pitches and 1No rugby pitch.

The complete irrigation system included;

- Pumping station with a capacity of 30m^3/h at 5.5bar pressure set for duty standby operation
- Hunter controller per field
- Hunter pop up sprinklers
- Rain/moisture sensor for automatic system shut off when there is rainfall



Design Drawing

Site Pictures

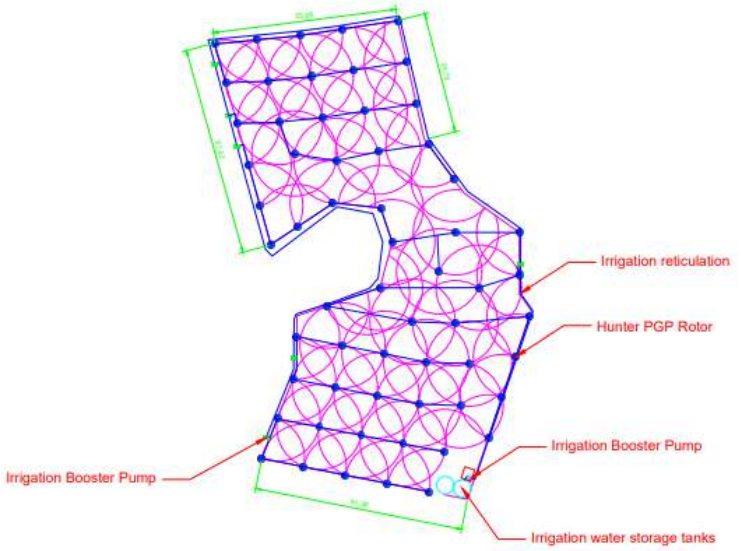
PROJECT CASE STUDY

7.4 University VC Residence Lawn Irrigation

D&S Engineering was contracted to design, supply and install a lawn irrigation system for an official residence in Nairobi.

Dividing the area into 6No sections, a design was developed for an automated pop up sprinkler irrigation system which included;

- Hunter PGP Rotor sprinklers
- Hunter ICV 1.5" solenoid valve
- Hunter 8-station controller
- Rain/moisture sensor for automatic system shut off when there is rainfall
- Pumping station with a capacity of 30m^3/h at 5.5bar pressure set for duty/standby operation



Design Drawing

Site Picture

PROJECT CASE STUDY

7.5 A Learning Institution

D&S Engineering installed a fully automated Irrigation system on all playing fields for an Academy in Thika, Kenya. The school has a student population of approximately 600 and will has a total of 7 grassed Football, Rugby & Cricket fields irrigated using Hunter equipment. Scope included design, supply, installation and user training to enable sustainable operation of state of the art facilities suitable for sporting events all year round.

The installation included Hunter I-25 lawn (pop-up) sprinklers, WiFi enabled irrigation Controllers, Electric Control valves and a complete pumping station.

Site Pictures

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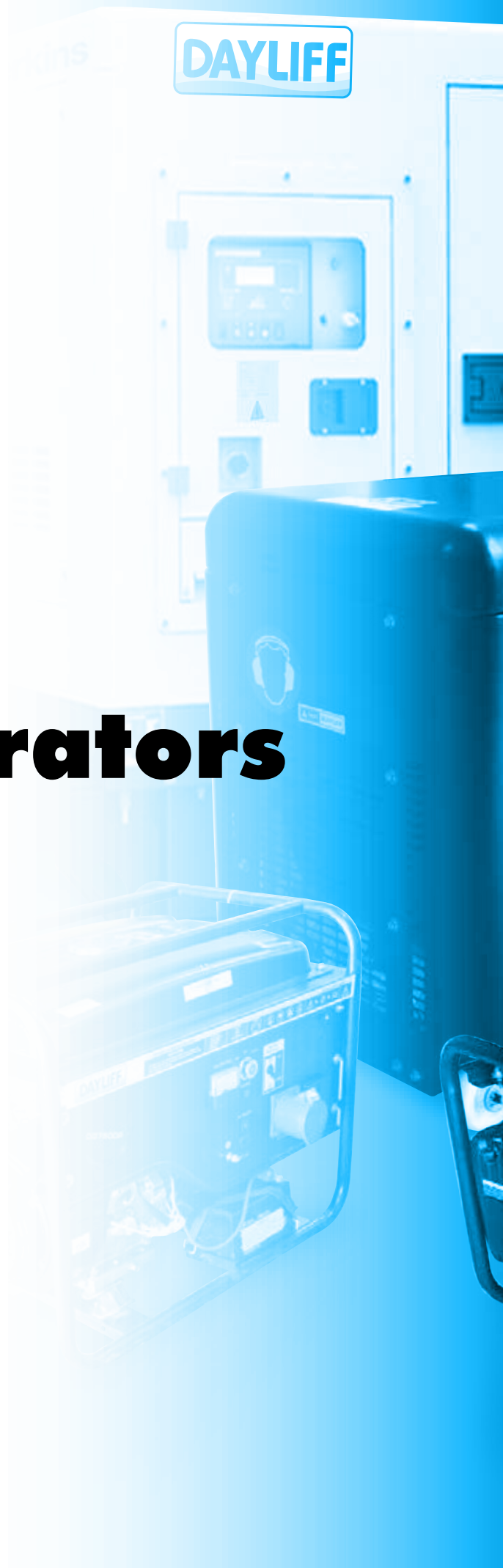


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PROJECT CASE STUDY

8.1 700kVA Generator for a Government Parastatal

The recently completed state of the art mall at the heart of Nairobi's Westlands district houses several leading outlets including an international supply chain supermarket and high end restaurants among others. The mall provides back up power to all its tenants via generators.

D & S through the partnership with a leading consulting engineering firm, supplied and installed two 250kVA generator sets powered by Cummins. The generators are equipped with built-in synchronization, enabling them to share loads efficiently during peak demand and also can operate independently, dropping one unit during lower loads to ensure full redundancy and optimal performance

Site Pictures

PROJECT CASE STUDY

8.2 400kVA Genset for Luxury Hotel Development

A leading MEP consulting partner selected D&S to supply and install a 400kVA standby power system for a luxury hotel development in Nairobi's Westlands district. The project involved delivering a robust and reliable back up power solution tailored for high end hospitality needs.

The key features of the equipment included;

- 1 No. 400kVA Perkins generator set with Stamford alternator
- Inbuilt synchronization features to accommodate an additional generator in the future
- 5000L auxiliary fuel tank with an automatic re-filling system to the belly tank
- Hot air ducting system and insulated & cladded exhaust

Site Pictures

PROJECT CASE STUDY

8.3 700kVA Generator for a Government Parastatal

D&S Engineering was selected as the best qualified supplier to undertake the provision of an emergency power requirement in the Oil and Gas sector.

The project scope included supply, installation and commissioning of a 700kVA Prime Rated Cummins engine generator for reliable back up power provision.

Site Pictures

PROJECT CASE STUDY

8.4 Synchronised Genset for a Hospital in Parklands, Nairobi

A large Hospital Group headquartered in Nairobi, with several clinics in key towns in the country required emergency backup power for a ultra-modern 7 storey 140 bed capacity facility.

D&S Engineering successfully supplied, installed and commissioned 2No 350kVA Prime Rated Cummins engine synchronized generators to meet the power requirements and provide standby power availability when one generator is being serviced.

Site Picture

8.5 313kVA Genset for a Fruit Processing Plant

D&S Engineering successfully supplied, installed and commissioned a 313kVA Prime Rated Cummins generator with a 300kVA Automatic Voltage Regulator (AVR) to protect Plant equipment against utility power voltage surges.

In addition the iDayliff remote monitoring and control solution was provided to enable both Factory Engineers as well as Davis & Shirtliff Field Service Teams to be able to monitor the operation of the equipment and provide pre-emptive maintenance.

Site Pictures

Water Pumps

Boreholes

Pools

Water Treatment

Generators

Solar

Irrigation

Chemicals

Digital Engineering

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