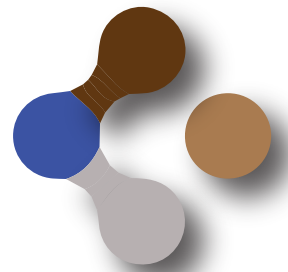


BLUE FOUR

Project Consultants



LET'S
BUILD YOUR
DREAM PLAN

Architectural, engineering, quantity surveying and
project management professional services

BLUE FOUR PROJECT CONSULTANTS

COMPANY PROFILE

ABOUT US

Blue Four Project Engineers is a multi-disciplinary Engineering, Design, Manufacturing and Management Consulting firm specialising in Engineering and Project Management services. The company is owned and managed by a South African entrepreneur emanating from an engineering / construction background. The company separates itself from others with its professionalism and versatile qualified team to undertake projects in residential, commercial, industrial, agricultural and mining industries within Africa.

OUR MISSION

We strive to be a company of choice in the provision of architectural, engineering, quantity surveying and project management professional services by continuously influencing the industry positively. Our vision is exceeding the clients' expectations, by actively ensuring inclusion of stakeholders in decision making, building trust and confidence during the project execution phase. The key to the success achieved in all projects executed is our project management approach which is client centred.

OUR VISION

- * Capacitate the company with professional competent staff
- * Maintain a high level of professionalism
- * Add significant value to our clients
- * Advocate for efficiency in all we do to optimise productivity at minimal cost
- * Ensure sound governance in all our projects through Our Core Values

PROFESSIONAL SERVICES



ENGINEERING Service

1. Mechanical Engineering
2. Electrical Engineering
3. Civil and Structural Engineering



PROJECT & PROGRAMME Management

1. Project Risk Management
2. Procurement Management and Expediting
3. Commercial and Contract Management
4. Scoping, Concept, Pre-feasibility, and Feasibility Studies
5. Financial Models to determine project viability



ALTERNATIVE ENERGY Solutions

1. Solar
2. Battery Storage Installations
3. Ground-Mount Structures
4. Shaded Parking Structures



PROFESSIONAL SERVICES



AGRICULTURAL ENGINEERING Solutions

1. Cannabis Agricultural Services
2. Cannabis Process Equipment and Indoor Growing Tunnels
3. Feasibility Study
4. Food Production Security (Total agricultural development including meat, fruit & vegetables)
5. Renewable water / Biosewage solutions.
6. Hydroponics / Aquaponics solutions



OTHER Services

1. Architectural Services
2. Quantity Surveying
3. Land Surveying
4. Site Security evaluation & Masterplan development



BATTERY ENERGY Storage System

1. System architecture and layout design
2. Safety and regulatory compliance
3. Container selection and structural modifications
4. Transportation and deployment

BLUE FOUR SERVICES

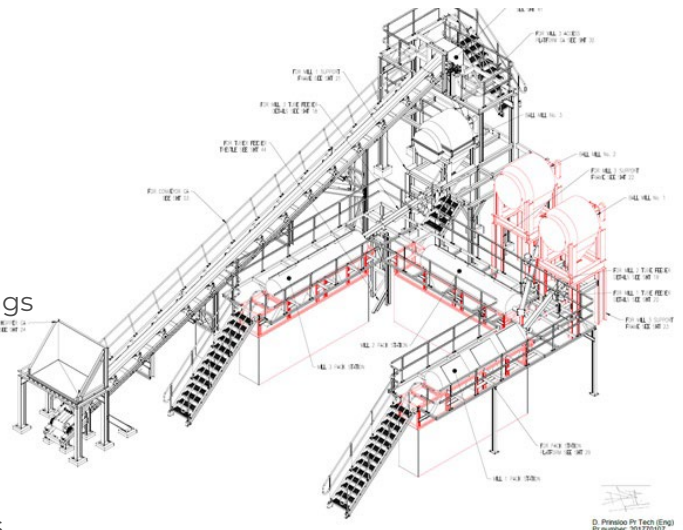
We offer full engineering solutions tailor-made to suit each customer. These include the entire project life-cycle, starting from project development, scoping, pre-feasibility, and feasibility studies, detailed design, tendering and procurement, contract management, project and construction management, quality management, contract management as well as commissioning and hand-over.



1 DRAFTING SERVICES

Our company has a fully functioning drafting office that can provide any drawings including but not limited to Architectural, Structural, Civil, Process to Mechanical. We take pride in our high-quality drawings and supply our client with engineering drawings in accordance with the latest drawing standards.

In addition to our drafting services Blue Four can provide 3D rendered images that can be utilized for conceptual design purposes. These images can be created from our 3D models or clients can provide us with their own 2D or 3D file.



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ARCHITECTURAL SOLUTIONS

Blue Four Architectural team provides professional architectural services for all building classifications.

The heart of any project starts of as a thought or idea. In order to bring these thoughts and ideas to life we require visuals. At Blue Four we assist in creating these visuals by providing the following services:

- » Concept design
- » Coordination planning
- » 3d Visualisation (Still renderings and walkthroughs)
- » Working drawings (Construction drawings)
- » Council submission and council approval.



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MECHANICAL ENGINEERING

Mechanical engineering gives life to structures and civil designs. Our mechanical team has good experience on the following areas in their field:

- » Piping Designs (Pressurised and non-pressurised)
- » Pipe Flexibility Analysis
- » Incompressible Hydraulic Analysis
- » Process/System Design
- » HAZOP and HAZID Studies
- » Heat Transfer
- » Machine Design
- » Building Services (feasibility, design, procurement, installation supervision, and close-out)
- » Heating, Ventilation and Air-conditioning, Refrigeration, Hot Water Generation (Boilers, Calorifiers etc.) and steam reticulation systems, Central Heating Systems, Fire Prevention and Fire Fighting, Industrial Laundry & Kitchen equipment, Medical Gas, Other Mechanical services
- » Process Plants and Material Handling (generating requisitions of mechanical packages, sizing equipment, procurement, project management, contract administration and installation supervision), Process equipment, lining of equipment and the like.

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CIVIL & STRUCTURAL ENGINEERING

CIVIL SERVICES offered include feasibility studies, master planning, design and supervision of the following and more:

- » Water Reticulation
- » Sewer Reticulation
- » Outfall Sewers
- » Roads - Urban and Rural
- » Stormwater Systems
- » Tender Documentation
- » Tender Reports
- » Services Reports
- » Design Reports
- » Master Plans for Sewer and Stormwater

STRUCTURAL SERVICES include the design and construction supervision of the following:

We have expertise in reinforced concrete, structural steel, reinforced brickwork and structural timber design. Our project capabilities and combined engineering experience range from small residential refurbishments all the way to commercial high-rise structures. Assessing of and reporting on the structural integrity of existing structures also forms a large part of our portfolio (Structural Assessment).

Our main aim is to design cost effective, safe structures that can withstand the elements encountered in its intended location.

The design process for each project is thoroughly considered from a longevity, safety and economic perspective. Our engineering team applies careful thought to each element of a proposed structure and calculates each factor meticulously to provide clients with peace of mind on a structurally sound structure.



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ALTERNATIVE ENERGY SOLUTIONS

We provide turnkey sustainable energy and storage solutions for the residential, commercial, industrial and public sectors. We don't merely sell the products you need; we provide expert assessments, design appropriate solutions, supply and install everything needed, per project, maintain and offer technical support. As a South African based solar system integrator, we believe that proper engineering and design is the fundamental key for providing a tailor-made solution to our customers that provides the best return for your investment.

Body Corporate Solar Solutions

We have credible contacts with which to connect our Body Corporate clients for funding purposes.

Solar For Business

There are various routes to take, in terms of sustainable energy solutions for business. Depending on what your company's objectives are, we can offer grid-tied solutions which would save on operating costs; or battery storage solutions which help reduce reliance on the grid. On the bright side, this switch will not only make good business sense; these green energy alternatives reduce your carbon footprint, which is also a huge 'plus' for your corporate image.

Key components are planet-friendly Solar Photovoltaics (PV), which has a life span of around 20 to 25 years, and Battery Energy Storage, which offers scalable energy security. The secret of 'going green' is a fit-for-purpose, engineered, tailor-made solution for your business, which would provide you with a strategy divided into phases, enabling you to 'grow' your green energy as your business grows, if needs be.

Solar For Utility Projects

It is anticipated that utility-scale PV could well dominate decentralised electricity generation because of its favourable economies of scale. These solar plants provide the benefit of fixed-priced electricity during peak demand periods when electricity from fossil fuels is the most expensive. They can also be paired with energy storage to manage evening energy emergencies, provide backup power.

OUR SERVICES

SOLAR PANEL INSTALLATIONS

Invest in Grid Tied Solar PV solutions to mitigate the impact and uncertainty of increasing electricity costs.

BATTERY STORAGE INSTALLATIONS

Reduce your reliance on the grid to ensure your business can operate at full capacity without interruptions due to load shedding.

GROUND MOUNT STRUCTURES

For large scale solar plants or where there is not sufficient roof space available, ground mount structures provide a cost-effective solution.

SHADED PARKING STRUCTURES

Optimise the use of your premises while providing shaded parking to your employees and customers.

CONTAINERISED SOLUTIONS

Custom designed battery storage solutions that can be transported to remote locations or projects with a limited time frame.

MAINTENANCE

Ensure the maximum return on your energy investment over its expected life. Wade Walker Solar can monitor and maintain your energy system after installation.

INSPECTIONS AND ASSESSMENTS

Obligation-free assessments, providing innovative energy solutions for new installations or advice to optimise already installed energy solutions.

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BATTERY STORAGE CONTAINERS

The Battery Energy Storage System (BESS) container design sequence is a series of steps that outline the design and development of a containerized energy storage system. This system is typically used for large-scale energy storage applications like renewable energy integration, grid stabilization, or backup power. Here's an overview of the design sequence:

Requirements and specifications:

- Determine the specific use case for the BESS container.
- Define the desired energy capacity (in kWh) and power output (in kW) based on the application.
- Establish the required operational temperature range, efficiency, and system lifespan.

Battery technology selection:

- Choose the appropriate battery technology (e.g., lithium-ion, flow batteries, or advanced lead-acid) based on the requirements, cost, efficiency, and availability.

System architecture and layout design:

- Develop a high-level system architecture, including battery modules, inverters, transformers, power distribution units, and control systems.
- Design the container layout, considering factors like thermal management, accessibility, and maintenance.



Safety and regulatory compliance:

- Ensure compliance with local and international safety standards, such as UL, IEC, and IEEE.
- Implement necessary safety measures, including fire suppression systems, alarms, and emergency shutdown procedures.

Container selection and structural modifications:

- Select an appropriate container size based on the system layout and required capacity.
- Make necessary structural modifications to the container, such as ventilation openings, cable entry points, and door reinforcements.

System integration and assembly:

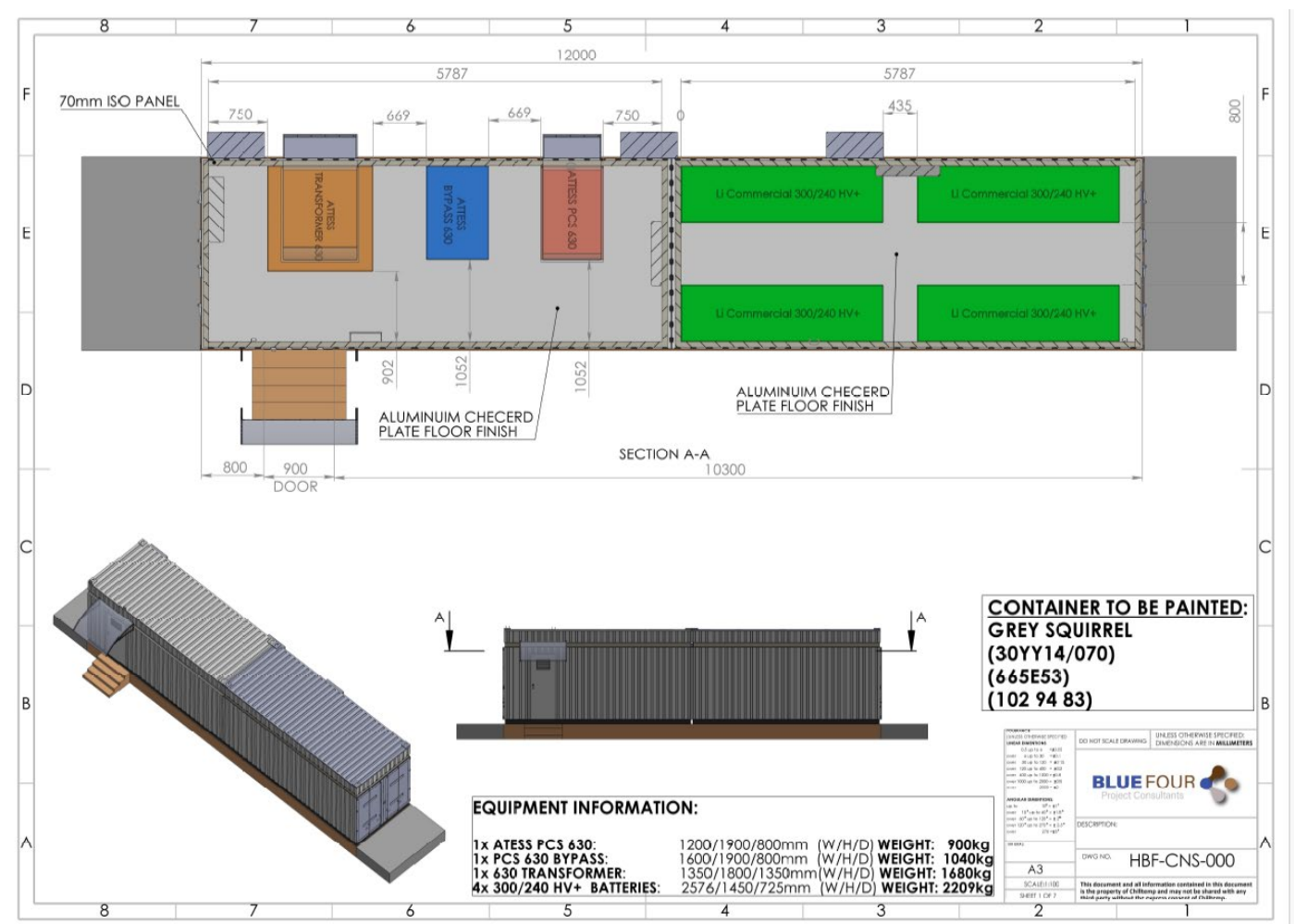
- Assemble the BESS components within the container, following the designed layout.
- Install and connect the electrical and control systems.

Testing and commissioning:

- Perform thorough testing of the BESS container, including functional, performance, and safety tests.
- Commission the system and verify that it meets the specified requirements and operates as intended.

Transportation and deployment:

- Transport the container to the installation site and deploy the BESS system.
- Connect the BESS container to the grid or other intended energy sources and loads.



PROJECT AND PROGRAMME MANAGEMENT

Our philosophy regarding managing and executing projects follows an integrated and conclusive approach where the client is at the centre of the project management team.

Before undertaking any project and programme we seek to partner with our clients in identifying the real business problem so that our solutions create value. We offer a full range of solutions during and after the project life cycle and some of these are highlighted below:

PROJECT INITIATION

- Scoping and Feasibility studies
- Project assessments and implementation strategies
- Stakeholder analysis and management

PLANNING AND DESIGN DEVELOPMENT

- Concept design of the proposed solutions
- High level WBS, Cost (+30%-25% accuracy) and Schedule estimates
- Detailed design, WBS, project Budget ($\pm 10\%$ accuracy), and execution Schedule

CONSULTING ENGINEERS & PROJECT MANAGERS

- Conduct a risk profile of the project (risk register)
- Affect a project change management system

PROJECT EXECUTION

- Execution supervision
- Contract management and administration
- Quality planning, assurance and control
- Manage budget and schedule control
- Evaluate and certify payment certificates
- Manage the risk register
- Chair and manage technical and project progress meetings

PROJECT CLOSURE

- Generation of final account
- Documenting lessons learnt
- Issue close-out report

GEOTECHNICAL ENGINEERING

The cost effectiveness of any project starts in the ground. In order to ensure that a project is feasible a geotechnical study should be carried out to determine the capabilities of the soil.

At Blue Four we can provide the following geotechnical services:

- » Design Solutions
- » Site Reports
- » Geotechnical Evaluations (Geotechnical Integrity)
- » Geotechnical Investigations
- » Reinforced Concrete Pile Foundation and Cap Design

QUANTITY SURVEYING

Our quantity surveying department assists the clients with all cost reports and financial services required to have the project run smoothly. This includes the following:

- » Financial Feasibility Studies
- » Bill of Quantities (BOQ)
- » Cost Reports
- » Payment Certificates and Constructions Claims



SURVEYING

With the latest technology at hand our surveyors can assist with a wide range of surveying services. We believe that in order to have a cost-effective design at feasibility stage the existing information should be as accurate as possible. Our services include:

- » GPR Surveys
- » Engineering Surveys
- » 3D Modelling
- » Drone Surveys

CANNABIS AGRICULTURAL SERVICES

Blue Four consist of a highly experienced Cannabis Infrastructure Consulting team. Currently Blue Four is involved in major medicinal cannabis farm developments all over Southern Africa. Currently our main development project is in the Barea Heights Mountains of Lesotho.

We can assist with the following services ranging from feasibility assessment all the way through to construction implementation and final completion:

- » Infrastructure development
- » Security solutions and security infrastructure flow
- » Roads, stormwater and sewer design and implementation
- » Electrical demand calculations and supply
- » Alternative electrical supply design
- » Water reticulation design
- » Cannabis process building internal layout designs for maximum product quality and quantity control



CANNABIS PROCESS EQUIPMENT AND TUNNELS

Stoic Steel Manufacturers along with Blue Four are currently designing and building prototype Cannabis processing machinery and cultivation green houses for the African market. Our machinery and tunnels consist of the following:

- » Automated greenhouse structures with a fully operational PLC system and weather station. These structures are designed in order to ensure the plants are growing in the most natural environment leading to a maximum harvest.
- » Header and de-stemmer machines. By incorporating technology into the processing of the cannabis flowers Blue Four strives in assisting the client in order to avoid loss of product due to over trimming.
- » Cylinder type freeze dryer that freeze dries 500kg of cannabis for transportation and exportation purposes.

The benefit of Blue Four's range of products are as follows:

- » On-site mechanical assistance
- » All parts and spares are available locally



GET IN TOUCH

LEON DU PLESSIS

+27 83 286 3833

leon@bluefour.co.za

258 Sprite street, Faerie Glen, Pretoria

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