

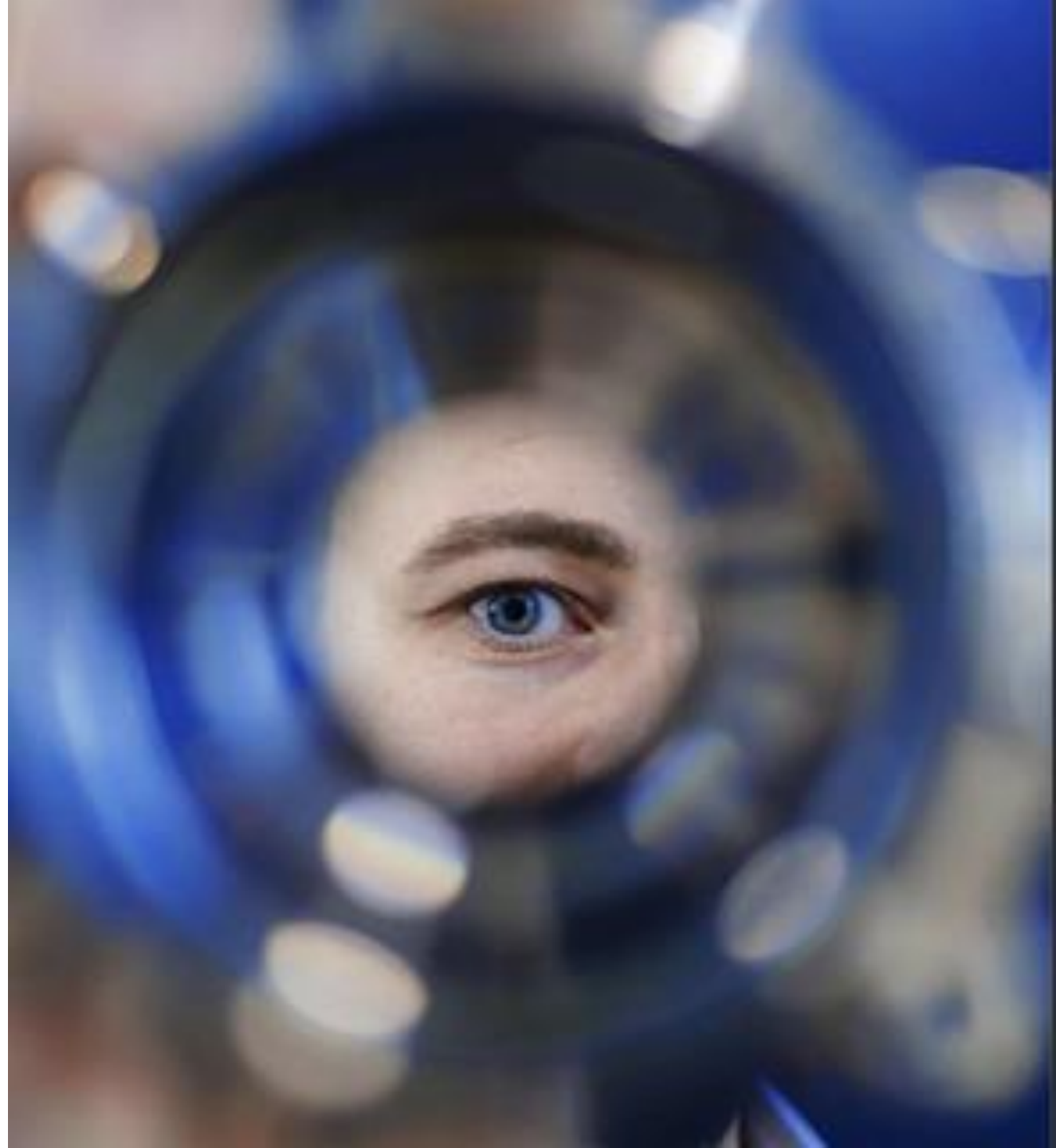
EBL ENGINEERING

Innovating Solutions, Engineering Excellence

COMPANY BROCHURE

Our Purpose

Innovating
Solutions,
Engineering
Excellence for a
better world



Our Vision

**Safeguarding the
Future through
Sustainable
Engineering
Services.**



Our Strategy

Purpose

Innovating Solutions, Engineering Excellence for a better world

Visions

Safeguarding the Future through Sustainable Engineering Services.

Design and Startup Excellence

DESIGN RIGHT

We Incorporate Sustainability and reliability into all Process Engineering & Design from the pre-conceptual stage through to detailed design, Operations support and due diligent services for our clients

Install and Run RIGHT

We Provide Excellence Process Equipment Services from sustainable OEM with strong sustainability policy, Innovations & Digitization's, less emission and pollutions and sustainable use of resources

TROUBLESHOOT RIGHT

Advance Process Simulation Services for optimum sustainable design and Operations

EXCELLENCE IN OPERATIONS

End to end Operations, Supply Chain and Idea to Value support, fully integrating Process, Human, DigiTech and Sustainability dynamics:

- Production and Operational Excellence
- Supply Chain Excellence
 - Idea to Value (I2V)
 - Specialized Services

HSSE Policy at EBL Engineering Ltd, we are committed to maintaining the highest standards of Health, Safety, Security, and Environment (HSSE) in all our operations. We prioritize the well-being of our employees, clients, contractors, and the communities we interact with, while striving to protect the environment. Our HSSE policy reflects our dedication to creating a safe, secure, and sustainable work environment.

Health	Safety	Security	Environmental
<p>a) We prioritize the health and well-being of our employees and stakeholders. We provide a safe and healthy work environment, ensuring compliance with health regulations, standards, and best practices.</p> <p>b) We promote a culture of well-being by providing resources, training, and support to raise awareness about health-related issues and encourage healthy lifestyles.</p> <p>c) We proactively identify and manage health risks associated with our operations, products, and services to minimize adverse impacts on individuals and the environment.</p>	<p>a) We are committed to providing a safe and secure workplace for our employees, clients, and contractors. We adhere to relevant safety regulations, guidelines, and industry best practices.</p> <p>b) We continually assess and improve our safety procedures, training programs, and emergency response plans to prevent accidents, injuries, and occupational health risks.</p> <p>c) We foster a safety culture that promotes active participation, open communication, and the reporting of safety concerns. Everyone has a responsibility to prioritize safety and contribute to a safe working environment.</p>	<p>a) We maintain a comprehensive security management system to safeguard our employees, clients, assets, and information.</p> <p>b) We implement appropriate security measures to prevent unauthorized access, protect sensitive data, and ensure the continuity of our operations.</p> <p>c) We foster a culture of security awareness, providing training and resources to our employees to mitigate security risks and respond effectively to potential threats.</p>	<p>a) We are committed to minimizing our environmental footprint and promoting sustainable practices across our operations.</p> <p>b) We comply with environmental regulations, standards, and best practices, aiming to prevent pollution, conserve resources, and reduce waste generation.</p> <p>c) We integrate environmental considerations into our decision-making processes, promote energy efficiency, utilize environmentally friendly materials, and support initiatives for biodiversity conservation and climate action.</p>

Our HSSE Objective is to continuously improve HSSE (Health, Safety, Security, and Environment) performance, the organization sets objectives, reviews progress, and takes corrective actions. Ongoing training is provided to employees to enhance HSSE awareness. A proactive reporting culture is fostered to promptly address incidents and concerns. Regular audits and inspections are conducted to identify areas for improvement and ensure compliance. Stakeholders are engaged to promote collaboration and shared responsibility. Key performance indicators are monitored to drive continuous improvement and demonstrate commitment to HSSE. HSSE considerations are integrated into product, service, and project development.

Our values



Excellence

We stand for excellence in everything we do



Passion

We work with passion without obsession



Integrity

We walk our talk



Responsibility

We feel responsible for our actions



Sustainability

We ensure sustainability in all we do



EBL values provide the foundation for all our business activities. They are an important red thread connecting our workforce across geography and cultures.

EBL Service

We offer end-to-end services to our clients, supporting them throughout their operations life cycles.



1.Process Design Services

We provide comprehensive end to end process engineering, advance process simulation and an integrated training/supports services for all process industries

1.1. PROCESS DESIGN

- Conceptual / preliminary process design studies (Front End Loading FEL-0 / FEL-1)
- Feasibility studies
- Technology screening / selection support
- Capacity evaluations / revamp studies
- Independent 3rd party process design evaluation
- Utility evaluations
- Detailed process design; FEL-2 / FEL-3
- Basic Engineering Design packages
 - Design basis development
 - Process alternatives technical & economic evaluations
 - Heat and Material Balance (HMB) development
 - Process Flow Diagram (PFD) development
 - Piping & Instrumentation Diagram (P&ID) development
 - Process controls description / functional controls specifications
- Preliminary equipment plot plans
- Equipment duty specifications
- Preliminary cost estimates (CAPEX and OPEX)
- Relief Device valve sizing / flare studies
- Detailed engineering design and process engineering support
 - Process building ventilation design support



EBL ENGINEERING

1.2. OPERATIONS SUPPORT

- Process troubleshooting and evaluation
- Process improvement and optimization
- Unit revamps and debottlenecking
- Control systems process support
- On-site process engineering staff augmentation
- Pressure / Vacuum relief device evaluations
- Flare system evaluations
- Process ventilation evaluations
- Commissioning and startup support
- Operating procedure development
- Operator and engineering staff training
- P&ID walkdown and update for 'As-built' drawing development
- Dust hazards engineering reviews



1.3. OIL AND GAS / REFINERY SERVICES

- Operator and engineering staff training
- P&ID walkdown and update for 'As-built' drawing development
- Dust hazards engineering reviews
- Unit Revamps
- Turnaround Support
- Renewable Fuels Conversions
- Flare Minimization / Utility Optimization
- Crude Unit Optimization
- Flare and Relief Sizing Studies
- Process Safety Audits
- Technical and process safety staff augmentation
- Heat Integration



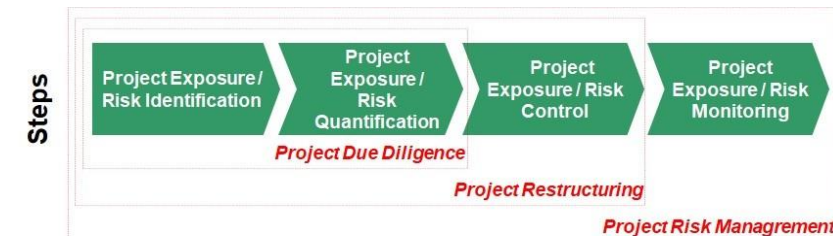
1.4. PROCESS SAFETY MANAGEMENT



- HAZOP / facilitation / participation
- Process Safety Management Audits
- Resolving / implementing PHA / HAZOP recommendations
- Process safety information development
- Process safety training courses
- Dust Hazards Analysis (DHA)
- Pressure / Vacuum relief device evaluations and program management
- Electrical area classifications (Class I, Div II; etc.)
- SIS / LOPA / SIL Services

1.5. ADDITIONAL CAPABILITIES

- Plant investment technical due diligence evaluation
- Bid package preparation
- Vendor and EPC bid package support, evaluations, and recommendations
- Owner's process engineer and project guidance services
- Process equipment evaluations
- Acceptance testing witness / approval
- Facility decommissioning plans
- Systems requirements definition and systems engineering support
- Technology package comparison, ranking and recommendation
- Independent Consulting Engineer (ICE) services for investors
- Process engineering construction checks



2.1. Process Engineering Services

Conceptual / Pre-FEED Studies

- Process Debottlenecking
- Flare Header Sizing
- Relief Valve Sizing
- Pinch Analysis
- Heat Exchanger Design

2.2. Dynamic Simulation

EBL specializes in performing dynamic simulation studies for:

- Validation of process performance
- Control strategy design and validation
- Process optimization
- Operational troubleshooting

Specialist Analyses:

- Centrifugal Compressor Surge
- Liquid Slug Management and Control
- Instrumented Pressure Protection and HIPPS
- Heat Exchanger Tube Rupture
- Liquid Surge and Water Hammer
- Multiphase Pipeline Flow Assurance
- Integrated Multiphase Pipeline and Facilities Modelling
- Production Monitoring

2.3. Steady State Simulation

- Conceptual Design, FEED and Detailed Design Studies
- Revamp and Debottlenecking
- Process Performance Monitoring and Optimization

2.4. Lifecycle Solutions

The Project Lifecycle

Most projects in the oil and gas industry follow a set lifecycle; with specific services required in each step to ensure smooth delivery. East 101 is committed to aiding you throughout your company's project lifecycle by providing, you with technical solutions tailored to your needs.

Operational Assistance

We provide:

- Energy Optimization, Utility Optimization
- Operator Training Simulator (eOTS) solutions, backed by dynamic models
- Process Analytics - Performance monitoring applications
- Custom software development for novel processes
- Corrosion Solutions: Testing, Modeling, Consulting, Engineering Services

FEED Support Solutions

- Rapid deployment of small FEED projects

Production Asset Management

- Digital Oilfield Solution - Field Wide Production Forecasting



2.5. Dynamic and Steady State Engineering Studies cont.

- Modeling for LP vector generation / production planning, troubleshooting, debottlenecking, operation optimization, performance monitoring.
- Refinery:
 - Crude Distillation Unit (CDU)
 - Saturated Gas Plant (SGP)
 - Atmospheric Residue Desulphurization (ARDS)
 - Diesel Hydrotreating Unit (DHT)
 - Kerosene Hydrotreating Unit (KHT)
 - Residue Fluid Catalytic Cracking Unit (RFCC)
 - LPG Treating Unit (LTU)
 - Propylene Recovery Unit (PRU)
 - Cracked Naphtha Hydrotreating Unit (CNHT)
 - Naphtha Hydrotreating Unit (NHT)
 - Continuous Catalytic Reformer (CCR)
 - Amine Regeneration Unit (ARU)
 - Sour Water Stripping Unit (SWS)
 - Sulphur Recovery Unit (SRU)
- Isomerization Unit
- Steam Cracker:
 - Steam Cracker Unit (SCU)
 - Pygas Hydrogenation Unit (PGH)
 - Benzene Extraction Unit (BZU)
 - Butadiene Extraction Unit (BDU)
 - Methyl Tertiary Butyl Ethyl (MTBE)
 - Natural Gas Processing Gas Treatment and Separations. Separation improvement, debottlenecking.
- LNG. Cryogenic Exchangers, Mixed Component Refrigeration Systems
- Heat Exchanger Network Modeling and Heat Integration
- Complex Distillation
 - Reactive, Azeotropic
 - Performance Monitoring & Optimisation
- Unit operations design
- Hydraulic evaluation / studies
- Flare and relief system design / evaluation
- Computational Fluid Dynamics (CFD)
- Plume dispersion modeling

2.6. Steady State Simulation

- Polymers and Petrochemicals
- Linear Low-Density Polyethylene (LLDPE)
- High Density Polyethylene (HDPE)
- Ethylene Oxide & Ethylene Glycol
- Polypropylene
- Iso-Nonanol



3. Equipment Services

From a single piece of equipment through to complete turnkey project, EBL together with our OEM's partners provide equipment design, procurement and installation for the following industrial segments:



Beverage



Chemical



Dairy



Dairy farming



Environment



Food



Heating & refrigeration



Home & personal care



Marine



New food



Oil & gas and energy



Pharma & healthcare

3. Equipment Service – For your continued success

After helping you selecting the right equipment EBL will be with you throughout the equipment(s) life cycle



4. Operation Strategy and Performance Improvement

We offer **end-to end Operations, Supply Chain** and **Idea to Value** support, fully integrating Process, Human, DigiTech and Sustainability dynamics

4.1. Production and Operational Excellence



Core Service Offerings

- Operations Strategy
- Industrial Footprint
- Design for Operational Excellence
- Future Factory/ Smart Factory
- Industrial Sustainability
- Op. Performance Improvement
- Op. Excellence (site/ company level)
- Process Kaizen Engineers (PKE)

4.2. Supply Chain Excellence



- Supply Chain Strategy
- Cost-to-Serve Reduction
- Asset Productivity Improvement
- Inventory, Cash, Service Optimization
- Change Management and Digital Transformation
- Talent & Organization Development

4.3. Idea to Value (I2V)



- Smart Product Development
- Design to Value
- Value Engineering
- CAPEX Optimization
- Specialized Integrated Procurement
- R&D Optimization
- PLM

4.4. Specialized Services



- Labs Excellence
- Sales & Service Excellence
- Deep Organizational transformation

Integrated PHDS Transversal Capabilities

Process dynamics: Flows (processes, activities) streamlining and lifecycle optimization

Human dynamics: Leadership - Engagement & competence -Systemic change and collaboration - Accelerated learning

Digital transformation: Industry 4.0 - Advanced analytics - Infra architecture design - Software applications

Sustainability: Sustainability assessment - Sustainable Operations - Sustainability strategy and roadmap

4. Operation Strategy and Performance Improvement

We help you becoming future-proof in reality

“Make it Happen” DNA

We stand for **real, tangible and sustainable impact** (not just concepts, estimates and slides), leveraging

- A combination of deep expertise and practical know-how “what works in reality”
- A systemic approach, combining all dimensions that make the difference in the short and the long term
- Authentic collaboration, augmenting the motivation, insight and capability of all contributors

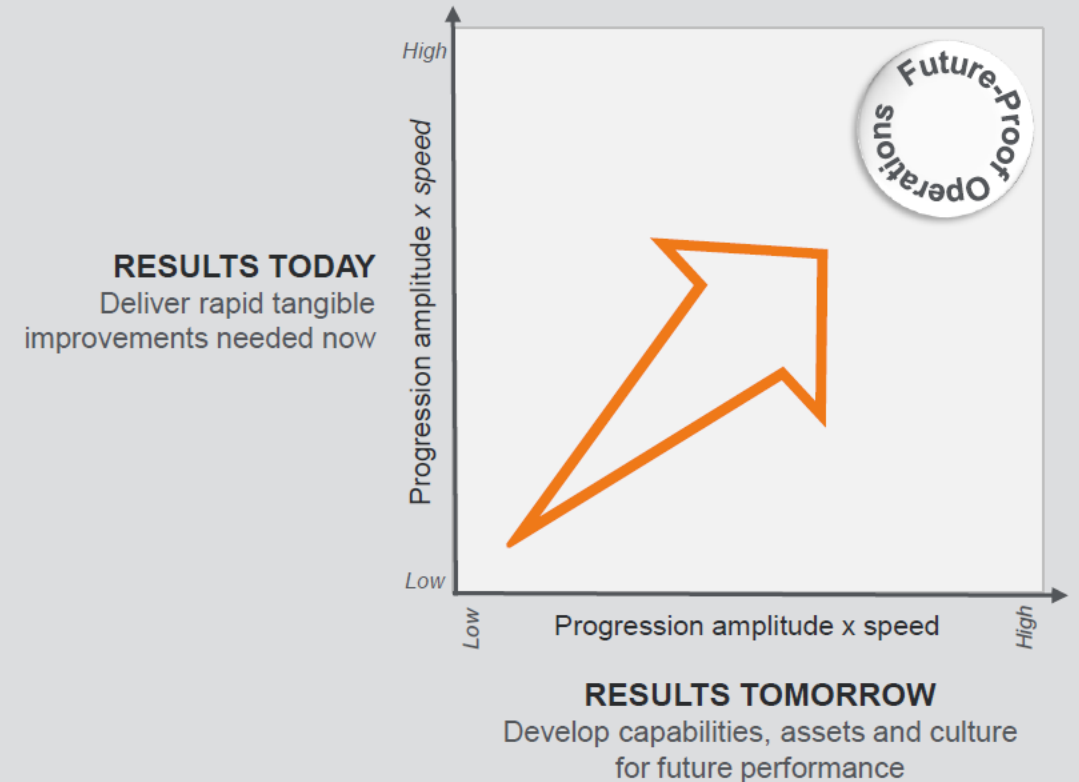
The “make it happen” DNA that differentiates us from most competitors, is **deeply entrenched in our people**

- A higher average age, field experience and maturity level
- A culture thriving on tangible results and collaboration, with as much respect for all the communities who make the difference (from shopfloor to board level)



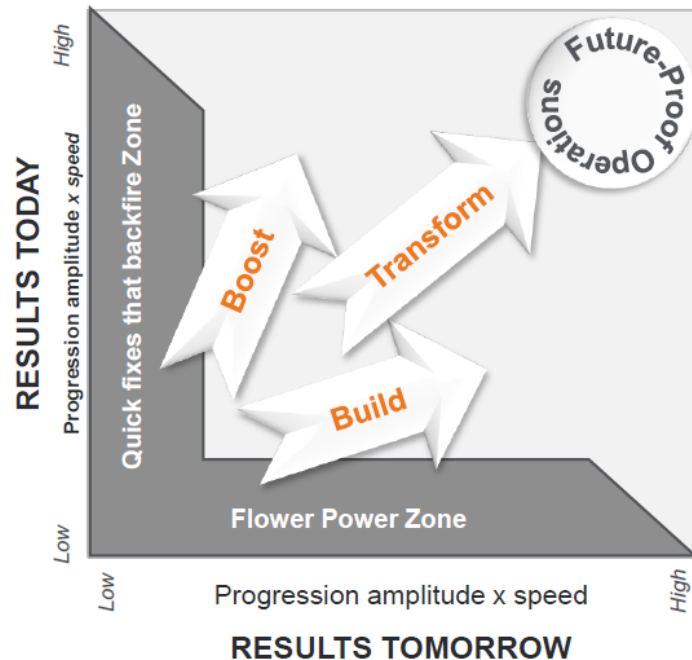
Future-Proof Operations

We help clients accelerate to become and/or remain Future Proof, balancing Results Today and Tomorrow



4. Operation Strategy and Performance Improvement

We co-design and accelerate **progression** journeys applying the most adequate improvement mode to balance return and risk



TRANSFORM Mode

changing significantly & rapidly the operational framework and/or logic

Examples

- Operations Strategy (incl. functional strategies e.g. production, maintenance, logistics, etc)
- Smart Factory, Advanced Manufacturing, Digital Transformation
- Footprint/ Supply Chain / Network redesign / Make or Buy
- Complexity reduction
- Mergers, Restructuring/Reorganization
- Product Portfolio / CAPEX redesign

BOOST Mode

progression within a given operational framework, with higher urgency given to short term results without compromising the future

Examples

- Productivity boost (throughput, waste reduction, ...)
- Break through systemic performance hurdles (predictive maintenance, ...)
- Process stabilization & Quality Improvement
- Cost Compression, Net Working Capital Reduction

BUILD Mode

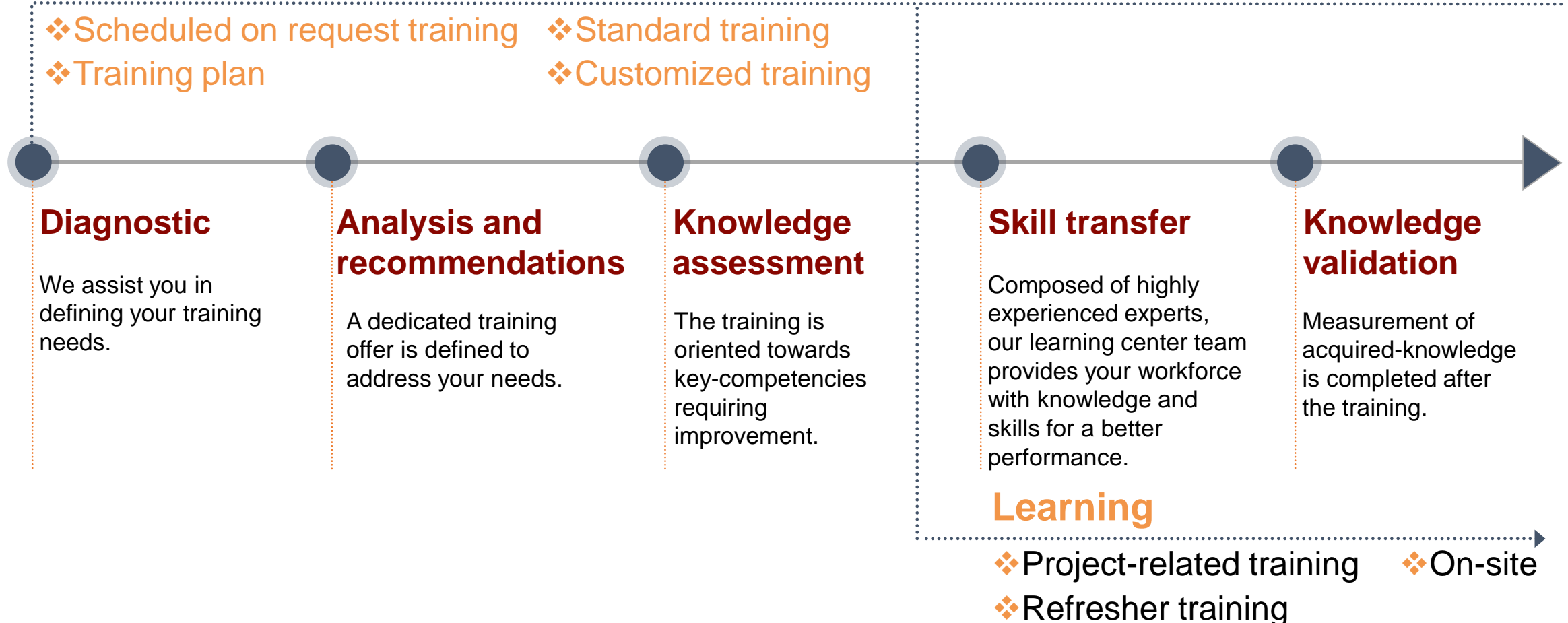
progression within a given operational framework, focused on building internal capabilities, assets & culture for recurring long term results

Examples

- Operations Excellence System development, upgrading and anchoring
- Lean Thinking & Management
- Process standardization & harmonization
- Lean/Agile production, Shop floor management (including digital)
- Product and systems lifecycle management

We offer comprehensive training for all our key competencies, process engineering related trainings, equipment related training, advance process simulation training, Operations strategy and performance management related trainings

Our training our offered in the following forms



Our Best In Class Partners

EBL ENGINEERING

Innovating Solutions, Engineering Excellence

PROCESS
ENGINEERING INTERNATIONAL, LLC
Excellence in Applied Chemical Engineering

Process offers process engineering services for a variety of clients around the globe. Process specializes in providing worldwide process engineering solutions that enhance production processes, optimize operations, and strengthen our customers' bottom line within all industries that require chemical engineering talent. Process operate under the parent company, Process Engineering Associates, LLC, USA

GEA Engineering for a better world.

GEA is one of the world's largest suppliers of systems and components to the industries. The international technology group, founded in 1881, focuses on machinery and plants, as well as advanced process technology, components and comprehensive services.

EFESO
MANAGEMENT CONSULTANTS

EFESO is a global consulting group specialized in operations strategy and performance improvement. EFESO have been operating in the industrial environment over the last 40 years, working side-by-side with our clients to accelerate their transformation towards future-proof operations. EFESO deliver over 1,000 projects for clients across 35 offices around the world, helping them achieve outstanding business outcomes, and sustainable change

East 101
— WE KNOW —

EAST 101, is one of the leading advanced process simulation services and training providers in the world. East101 helps clients design and operate safe, environmentally friendly, sustainable, maintainable and profitable oil, gas and petrochemical production and processing facilities. East101 have over 50 YEARS OF ACCUMULATED KNOWLEDGE in DESIGNING oil and gas production facilities, pipelines, gas plants, refineries and petrochemical plants. East 101 USE and CREATE cutting edge technology computer-based design tools that provide INSIGHT, enabling us to provide OPTIMIZED facilities design and operating strategies.

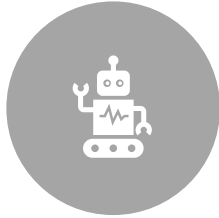
COMPETITIVE ADVANTAGES

EBL ENGINEERING

Innovating Solutions, Engineering Excellence



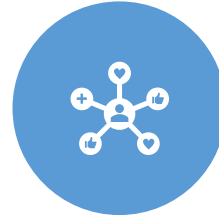
**BEST IN CLASS
PARTNERS /
UNBIASED**



**HIGHLY SKILLED
SENIOR LEVEL
PROCESS
ENGINEERS
WITH REAL
WORLD, HANDS-
ON EXPERIENCE**



**STATE OF THE
ART PROCESS
ENGINEERING
TOOLS**



**EXTREMELY
RESPONSIVE TO
CLIENT'S NEEDS**



**MOBILIZE
QUICKLY ON
SMALL AND
LARGE
PROJECTS**



**AVAILABLE FOR
PROJECTS
WORLDWIDE**

THANK YOU

Office Number: + 233 20064259

Visit: www.eblprocesseng.com Email: info@eblprocesseng.com

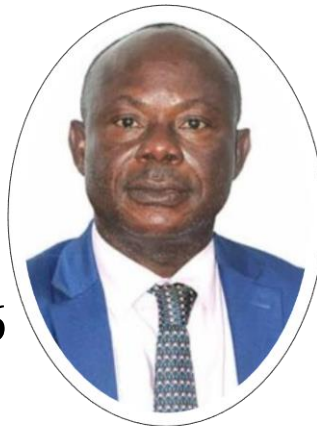
Ing. Prof. Nana Osei-Wusu Achaw

Managing Director

EBL ENGINEERING LTD

Mobile/**WhatsApp**: + 233 202473696

Email: owach@eblprocesseng.com



Mr. Ebenezer Blay

Operations Manager

EBL ENGINEERING LTD

Mobile/**WhatsApp**: + 233 249857038

Email: ebenezer.blay@eblprocesseng.com

