

**EXPERTISE IN SUGARCANE ENGINEERING**  
*ON THE AFRICAN SCALE*



**FORGES TARDIEU**  
*INNOVATIVE ENGINEERING*



CORNER STONE OF THE MAURITIAN AND AFRICAN SUGAR INDUSTRIES, BORN FROM THE MERGER OF *FORGES & FONDERIE DE MAURICE* (1850) AND *TARDIEU & CIE* (1880), **FORGES TARDIEU** PROPOSES A WIDE RANGE OF PRODUCTS AND SERVICES TO THE SUGARCANE INDUSTRY.

DRIVEN BY OUR KNOW-HOW AND LOCAL & CONTINENTAL EXPERIENCE, WE ARE A RELIABLE AND RECOGNISED PARTNER OF THE SUGAR INDUSTRY.

Our major fields of expertise in the sugarcane industry are the following:

- CONSULTANCY SERVICES
- PROJECT MANAGEMENT
- SUGAR FACTORY MANAGEMENT
- EQUIPMENT DESIGN AND MANUFACTURE
- ASSEMBLY OF SUGAR MILLS
- SUPPLY OF LABORATORY EQUIPMENT
- DISTILLERY AND ETHANOL PLANTS
- COGENERATION AND ENERGY PRODUCTION
- AUTOMATION AND INSTRUMENTATION

Our mechanical workshop, the largest of the region, enables us to manufacture equipment designed by our design office or to refurbish equipment from existing sugar mills.

Over the past decades, we have been exporting our know-how to Sierra Leone, Zambia, Nigeria, Tanzania, Mozambique, Kenya, Rwanda, Philippines, Guadeloupe, New Caledonia and Reunion Island, to name but a few.



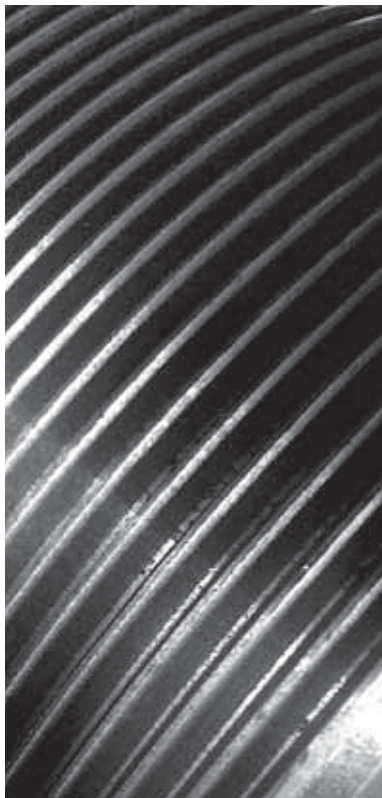
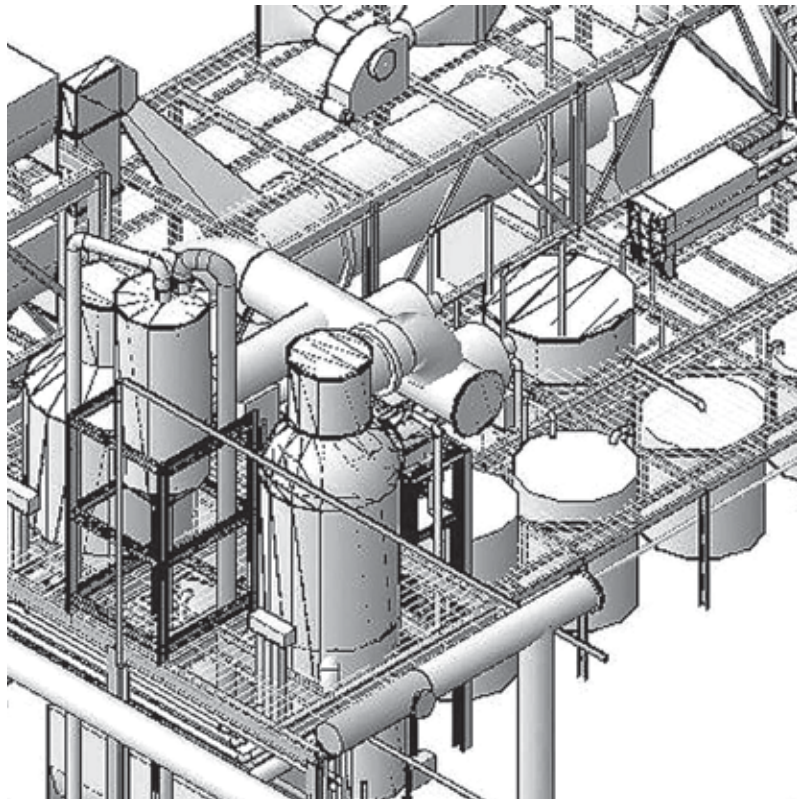
## CONSULTANCY SERVICES



Thanks to several decades of experience acquired in terms of design, repair and maintenance of necessary equipment for sugarcane production, we have shaped our group into an engineering consultancy platform of excellence. Today we export our equipment and services all over the African continent. We make use of the latest design technologies, namely the laser technology, which facilitates the conception of up-to-scale 3D designs.

Beyond our design services offer, we propose consultancy services linked to the sugarcane industry with regards to the implantation and construction of industrial sites. These services extend to the different players of the industry such as cogeneration units, refineries, distilleries and ethanol plants.

*“We make use of the latest design technologies, namely the laser technology, which facilitates the conception of up-to-scale 3D designs.”*

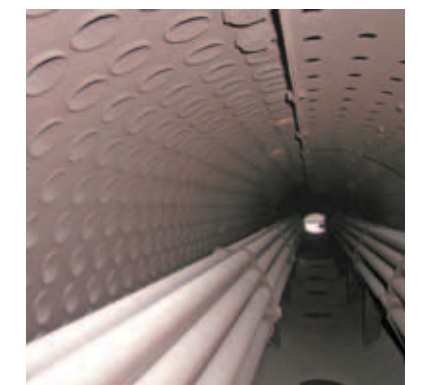


Our proven expertise regarding the development, planning, execution and control of a wide range of projects places us as a preferred partner for the project management of mechanical engineering developments. We are proud of our capacity to propose sharp, high quality and tailor-made services which allow us to reply individually to each of our clients' needs and expectations. We propose the following services:

- SCOPE AND DEFINITION PLANNING AND BUDGET DEVELOPMENT
- TECHNICAL INSPECTIONS AND VALIDATION OF QUALITY ASSURANCE
- START-UP AND COMMISSIONNING



## PROJECT MANAGEMENT



## SUGAR FACTORY MANAGEMENT

*“We have been managing sugar factories in various African countries”.*

Over the past decades, we have been managing sugar factories in various African countries such as Madagascar, Tanzania and Uganda. Sugar factory management contracts usually take place over 2 to 4-year periods, renewable as per the client's needs.

Our sugar factory management proposal covers the following aspects:

- PLANT
- SUGARCANE FIELDS
- GARAGE
- ACCOUNTS AND ADMINISTRATION



## EQUIPMENT DESIGN AND MANUFACTURE

Our workshops, with the support of our in-house foundry, can manufacture most pieces of equipment involved in the sugar manufacturing process, based on the designs and drawings produced by our team of engineers and designers.

As per the size and complexity of the ordered equipment, it will either be completely produced and assembled in our workshop or prefabricated therein, then packed in kit forms in containers and shipped to the various sites of assembly. Our service includes the maintenance and refurbishing of equipment on site or in our workshops.



The sugar mill equipment is manufactured by our workshops then shipped to the different sites of assembly. The assembling, welding, connection and installation processes of such equipment are fully taken in charge of on site by our teams, assisted by the local workforce. Final testing, commissioning and training of proper staff will then be performed by us. We also undertake the expansion, dismantling and re-erection of sugar manufacturing plants.

## ASSEMBLY OF SUGAR MILLS



Through the deployment of integrated solutions, tremendous improvement can be achieved with regards to the efficiency and productivity of a sugar plant. Such improvements have been at the heart of our activity since 1992.

Thanks to the achievements of our engineers, designers and project managers, we propose the integration of various services and systems as well as the coordination of human and technical resources for a smooth, efficient and seamless completion of automation projects. Reduction in manpower (and therefore decrease in human mistakes), energy savings due to a lessening steam consumption, enhanced reliability in plant operation and increased safety, are among the main advantages abided by, following the integration of the different processes and systems.

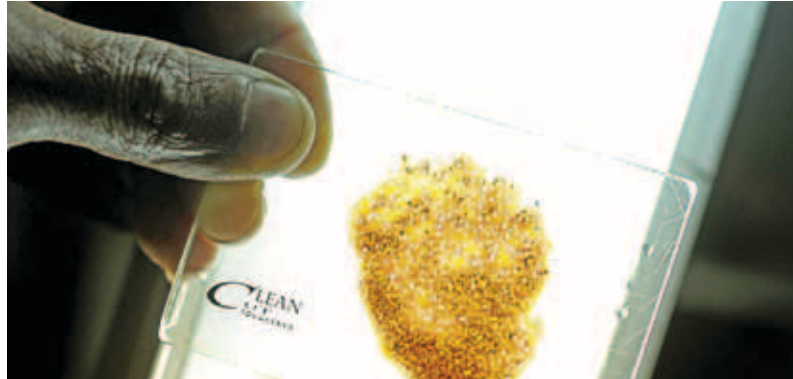
## AUTOMATION AND INSTRUMENTATION



## SUPPLY OF LABORATORY EQUIPMENT

For more than 50 years, we have been a leader in terms of supply, installation and maintenance of sugar testing equipment such as polarimeters and refractometers.

We propose laboratory equipment used to test: sugar purity, viscosity of the sugar juice, colour of the sugar juice and crystals, ash content and moisture content. We also supply NIR (Near Infrared System) systems, which enable the analysis of several parameters throughout the sugar manufacturing process, ranging from sugar cane inspection to final product release.



## DISTILLERY AND ETHANOL PLANTS



Bio fuel refers to any solid, liquid or gas fuel that has been derived from biomass. Bio fuels can offer environmental benefits as they are biodegradable and have lower carbon emissions than traditional fuels. We have the technical know-how and necessary skills to offer a complete turnkey solution including the design, the manufacture and the commissioning of all the required equipment to generate alcohol and ethanol.

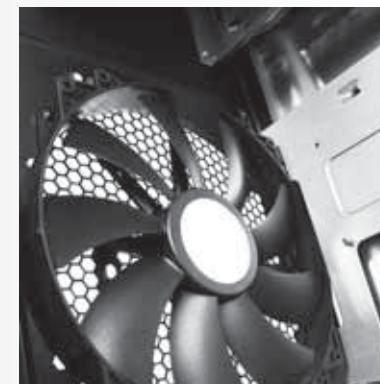
Cogeneration is the principle of simultaneous production of two different energies in one single process.

A number of countries, in particular those devoid of any fossil fuel, have implemented energy conservation and have used necessary measures to minimise cogenerated energy (steam and electricity).

In 1990, cogeneration programmes were launched with the diversification process of the Mauritian sugar sector. FORGES TARDIEU played a major role in this programme through the supply and installation of boilers fuelled by bagasse, coal or diesel. We have also supplied ID fans, scrubbers, electrostatic precipitators, turbo alternators and cooling towers.

## COGENERATION AND ENERGY PRODUCTION

*“The success achieved in the field of bagasse energy cogeneration in Mauritius can be replicated in almost all the sugar producing countries of Africa”.*



# PRODUCTS INDEX

## CANE PREPARATION EQUIPMENT

- WEIGHBRIDGES
- SHREDDERS
- FEEDER TABLES
- BAGASSE CONVEYING SYSTEMS
- CORE SAMPLERS

## JUICE EXTRACTION

- DIFFUSERS
- MILL ROLLERS
- DONNELLY CHUTES
- INTERCARRIERS

## CLARIFICATION

- JUICE HEATERS
- JUICE CLARIFIERS
- FLASH TANKS

## JUICE EVAPORATION

- KESTNER AND ROBERT TYPE EVAPORATORS

## PAN AND CRYSTALLIZATION

- VACUUM PANS
- CONDENSERS
- MELTER TANKS
- CRYSTALLIZERS

## SUGAR DRYING AND STORAGE

- SUGAR BINS
- CENTRIFUGAL STATIONS
- DRYERS
- SUGAR SILOS

## WHITE SUGAR PROCESS AND REFINERY

- SYRUP AERATORS & CLARIFIERS
- PHOSPHORIC ACID DOSAGE TANKS

## SUGAR TESTING LABORATORY EQUIPMENT

- NEAR INFRARED SYSTEMS (NIR) ANALYSIS
- POLARIMETERS
- REFRACTOMETERS
- ELECTRONIC AND INDUSTRIAL BALANCES
- ONLINE REFRACTOMETERS
- HANDHELD REFRACTOMETERS
- BOILERS AND WASTE WATER TESTING KITS

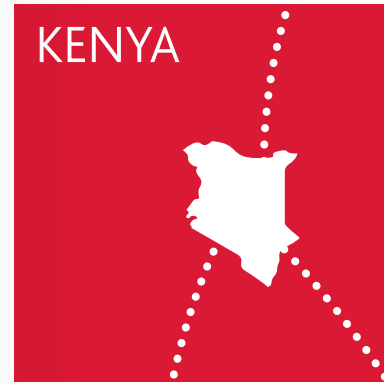
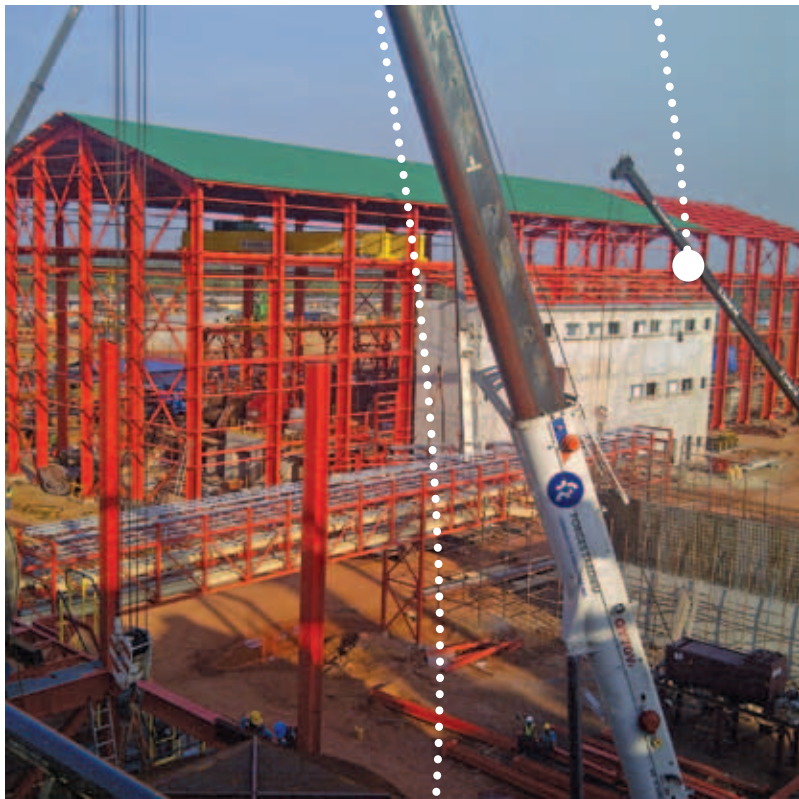
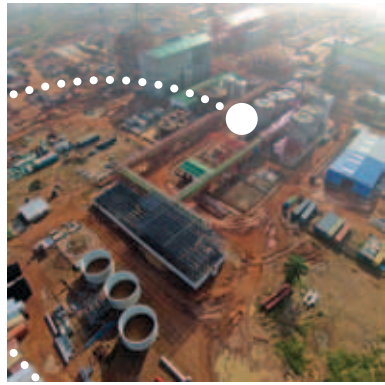
## INDUSTRIAL SUPPLIES

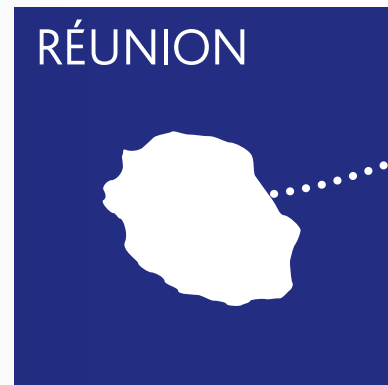
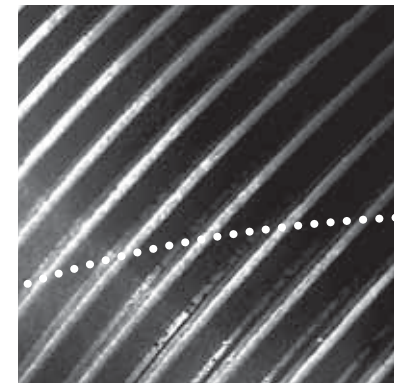
- FORKLIFTS
- CRANES
- BOILERS
- ONLINE MEASUREMENT TEMPERATURE, PRESSURE & HUMIDITY INSTRUMENTS
- BURNERS
- STEAM & CONDENSATION EQUIPMENT
- AIR COMPRESSORS
- CENTRIFUGALS
- OIL, GREASE & LUBRICANTS
- BEARINGS
- CONVEYOR BELTS & ACCESSORIES
- JOINTS
- PRESSURE PUMPS



## PRESENCE OF FORGES TARDIEU IN AFRICA

- BURKINA FASSO
- BURUNDI
- CAMEROUN
- CONGO BRAZZAVILLE
- CHAD
- DEMOCRATIC REPUBLIC OF CONGO
- ETHIOPIA
- GABON
- IVORY COAST
- KENYA
- MADAGASCAR
- MALAWI
- MAURITIUS
- MOZAMBIQUE
- NIGERIA
- PHILIPINES
- RÉUNION ISLAND
- RWANDA
- SENEGAL
- SIERRA LEONE
- SWAZILAND
- TANZANIA
- UGANDA
- ZAMBIA









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