

The background of the image is a faded, high-angle photograph of an industrial plant. It features a complex network of blue pipes, yellow safety railings, and several large, rectangular metal grates or platforms. A tall, grey cylindrical tower is visible in the upper left. On the right side of the image, there is a solid red vertical bar that extends from the top to the bottom.

***DRAWCAD***

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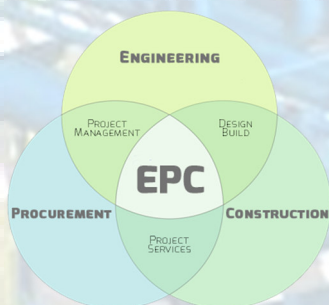
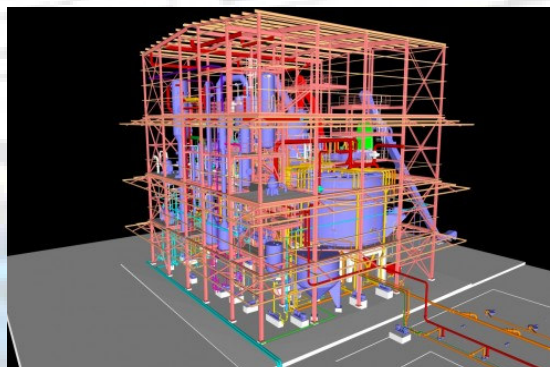
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**DRAWCAD** is a privately held company 100% Brazilian and was created with the context of forming a highly qualified team of professionals with extensive experience in large projects of industrial plants, working throughout the country, through office in São Paulo, with a force of work of numerous experts, distinguished by competence and qualification.

## ABOUT

**DRAWCAD** has experience in different types of projects such as offshore platforms; chemicals, mining, steel, food industry, petrochemicals; Pulp and Paper; manufacturing; pharmaceutical and cosmetic products.

We have the know-how development of conceptual engineering and Cost Estimate (ICT); Basic and detailed; Project engineering and EPC / EPCM.



## SERVICE

Project implementation of Integrated Solutions and EPC (Engineering, Procurement and Construction) contracts, providing efficient criteria for integrated planning and cost control, change management and full control for the full commitment to budget, schedule, quality, safety and care environmental

## PROJECTS

For 3D Modeling, advanced and state-of-the-art software are used 3D tools such as AutoCAD Plant 3D, REVIT, INVENTOR, SmartPlant 3D e Smart Marine, SOLIDWORKS, PDMS, CIPE, TEKLA STRUCTURES, they all already used and proven in previous projects.

Engineering is further supported by tools, HYSYS and PRO II processes simulators, Cesar II and TRIFLEX systems for flexibility analysis.

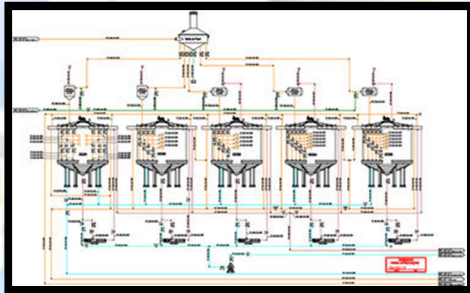


## OUR MISSION

To be a company recognized, solid and reliable, especially when using technology to achieve total quality and customer satisfaction.

Provide consulting engineering services with quality, using appropriate technology, targeting the right solution and customer satisfaction, contributing to the well being of our employees, respecting the society and the environment.

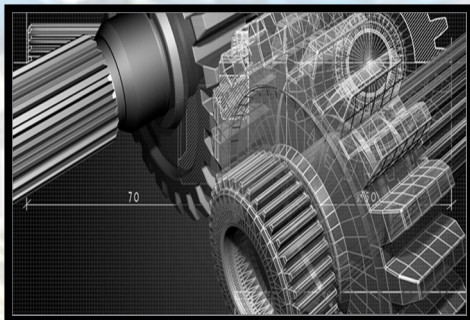


**PROCESS**

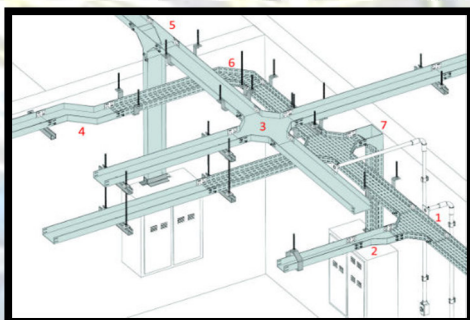
- » Concept and process simulation
- » Feasibility Reports Technical and Environmental
- » Process of Basic Engineering
- » Process Flow Chart
- » Utility Flowchart
- » Specification Materials
- » Mass Balance
- » Data Sheets Process Equipment
- » Instruments Process Data Sheets
- » Operation Manual

**PIPE**

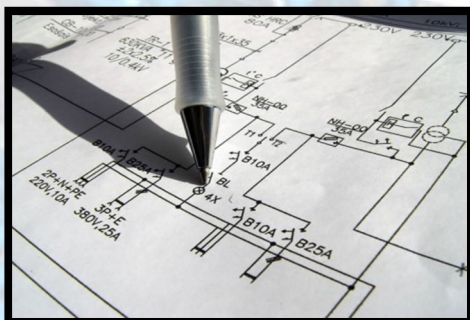
- » Specification Materials
- » Pipe Standardization
- » Facilities Projects
- » Request for Material Purchase
- » Technical Analysis
- » Flexibility Analysis
- » Detailing brackets
- » Installation Specification
- » Suppliers Drawings Verification (VDF)
- » Memorials Descriptive
- » Quantitative Spreadsheets

**MECHANICAL**

- » Technical specifications
- » Project Specification
- » Calculation Memorials
- » Standardization
- » Detailing Boiler
- » Requests Equipment
- » Technical Analysis
- » Manufacturers Drawings Verification (VDF)
- » Load Diagrams
- » Memorials Descriptive
- » Quantitative Spreadsheets

**INSTRUMENTATION, AUTOMATION AND CONTROL**

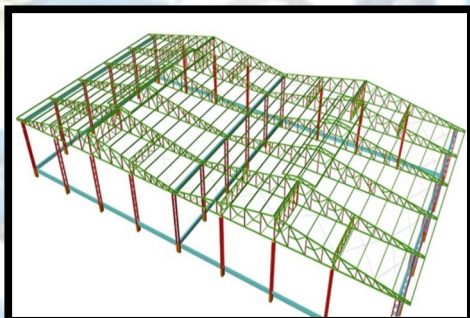
- » Standardization
- » Calculation Memorials
- » Flowcharts with Integrated Process
- » Installation Projects
- » Instrumentation Projects networks Foundation  
Fieldbus and Profibus
- » Knitting Projects and Control Panels

**ELETRIC**

- » Technical specifications Equipment
- » Standardization
- » Installation Projects: Power and Control,  
Grounding and Lighting
- » Communication and Telecommunication
- » Calculation Memorials
- » Technical Analysis
- » Suppliers Drawings Verification (VDF)
- » Request for Material Purchase
- » Memorials Descriptive
- » Quantitative Spreadsheets

**CIVIL**

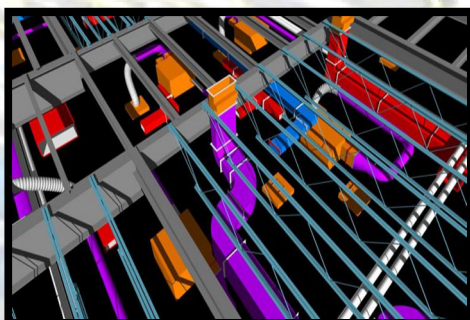
- » Architectural Design
- » Infrastructure: Polling rental, Project of Earth moving, Road System, Network Drainage (storm / sewer) and building foundations and Equipment
- » Superstructure
  - Reinforced Concrete
- » Documents
  - Calculation Memorials
  - Descriptive Memorials
  - Technical specifications
  - Quantitative Spreadsheets

**METAL STRUCTURE**

- » Basic Design
- » Executive Project Single Line
- » Calculation Memorials
- » Memorials Descriptive
- » Technical specifications / design
- » Suppliers Drawings Verification (VDF)
- » Quantitative Spreadsheets
- » Technical Opinion
- » Detail

**CFTV**

- » Technical Specifications Equipment
- » "Standardization
- » Installation Projects
- » Communication and Telecommunication
- » Calculation Memorials
- » Technical analysis
- » Suppliers drawings Verification (VDF)
- » Request for Material Purchase
- » Memorials Descriptive
- » Quantitative Spreadsheets

**HVAC**

- » Basic project
- » Executive Project Single Line
- » Calculation Memorials
- » Memorials Descriptive
- » Technical specifications / design
- » Suppliers drawings Verification (VDF)
- » Quantitative Spreadsheets
- » Technical advice
- » Detailing

**MANAGEMENT WORK**

- » Industrial construction contracting Notices
- » Negotiations and contracts
- » Pre-construction activities (construction, approval, etc.)
- » Plan and security program management
- » Coordination of contractors – time frame x cost
- » Inspection and Quality Control
- » Support from engineering to construction and assembly
- » Commissioning and starting





The new revision of the Regulatory Standard NR-13 (MTE Ordinance No. 594, dated April 28, 2014), states that it is mandatory legal requirement for owners Boilers, Pressure Vessels and Piping throughout the national territory, as respect to the installation, operation, maintenance and inspection of such equipment.

Since all the required scope of law NR-13 offer point solutions (for example, the provision of a simple plate), or even full management of the NR-13 system.

We work both in implementation and in the management of a Boiler Control System, Pressure Vessels and Piping - NR-13, assisting our customers in the specification and purchase of equipment, performing the inspections provided for in NR-13, developing and monitoring the implementation of change projects and repair, as well as conducting operator training, technical staff and managers. Are still monitored the time between inspections, scheduled and scheduled the necessary stops with the company's operational staff, aiming to improve the safety of operation with the maximization of operating time.

The Management Control System Boilers, Pressure Vessels and Piping - NR-13 can be deployed for small, medium and large enterprises, their needs and resources, with the implementation of both dedicated, dedicated teams for each client, as shared teams - Inspection, Testing and Consulting.

Services ratio related to meeting the requirements of Regulatory Standard NR-13:

- Reconstitution of medical records;
- Equipment Identification (ID Cards and Notes of TAG and Category);
- Safety valve calibration;
- Gauges calibration;
- Installation Project Equipment (New Units);
- Installation Design / Floor Plan (Units in Operation);
- Training Process Unit Operators;
- Change or Repair Project;
- Home Safety Inspection;
- Periodic Safety Inspection;
- Special Safety Inspection;
- Integrity Assessment boilers (25 years of operation);
- Hydrostatic Testing, Pneumatic and Leak;
- Advice on Inspections;
- Inspection and Test Plan.

Meeting the NR-13 Regulatory Standard applies to the following process equipment:

- Boiler: Watertube; flame tube; electric; mixed;
- Pressure Vessel;
  - Pool;
  - Heat Exchanger (condenser, evaporator, cooler, heater, etc.);
  - Heater Thermal fluid;
  - Paper Machine Drum (monolucid and dryer);
  - Column / Tower (absorption, distillation and fractionation);
  - Deaerator;
  - Digester (Batch and Continuous);
  - Evaporator;
  - Reactor.
- Pipes;
  - Networked boilers and pressure vessels containing fluids class A or B.



Given the current lack of **WATER** we are facing, the **DRAWCAD**, is presenting solutions for homes, condominiums, shopping centers and industries with water treatment plants and sewage to meet the need to recycle **WATER**.

**WATER** is our most important asset, where we are not dealing with their due respect.

The **DRAWCAD**, behind a message to all, to raise awareness that we must preserve the planet, with respect for life, caring for our natural resources.

So, to start a revolution in sanitation and sources of clean and sustainable energy, should from our efforts to sow we should care much where we live, without waiting government initiatives, which manifests itself only when the situation has not more solution.

This situation we face today, was predicted long ago. Environmental experts had warned the government about the drought affecting us, and did not take appropriate action, be prepared for what was coming. There are various ways of facing this situation without making our lives harder.

Therefore, it is our responsibility to review the concepts of how to live better. And the best is to think not in himself, but in all, it depends on coordinated actions of all.

Take care of the planet, just depends on each. For he is our home.





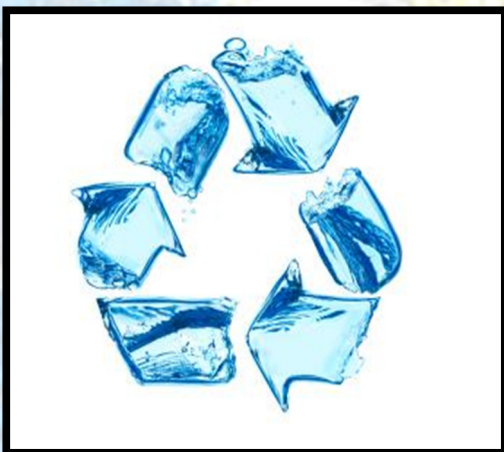
Water is of fundamental importance for the life of all species. Approximately 80% of our body is water. Much of researchers agree that the treated water intake is one of the most important factors for the preservation of health, the universal solvent is considered, helps in the prevention of diseases (kidney stones, urine infection, etc.) and protection of the body against aging.

However, there has been a big waste of this natural resource, and its use is intended primarily for economic activities. Currently, 69% of the drinking water is intended for agriculture, industry 22% to 9% and only used for human consumption.

Water pollution is another aggravating factor, the rivers are polluted by domestic sewage, industrial effluents, medical waste, pesticides, and other elements that alter the physical and chemical properties of water.

Brazil is a privileged country regarding the availability of water, holds 53% of the fresh water source available in South America and has the largest river in the world (Amazon River). The equatorial climates, tropical and subtropical acting on the territory, offering high rainfall. However, even with great availability of water resources, the country suffers from a shortage of drinking water in some places. Fresh water available in Brazil is unevenly distributed: approximately 72% of the water sources are present in the Amazon region, leaving 27% in the South Central region and only 1% in the Northeast region of the country.

Another aggravating factor is the lack of basic sanitation in homes of the population. Currently, 55% of the population does not have clean water or sanitation. Public policies should be developed to reverse this situation. Research indicates that for every \$ 1.00 invested in sanitation, the government fails to spend \$ 5.00 in health services, ie they are investments that provide quality of life for the population and economy to the public coffers in the short term.



Possible actions to reduce water waste:

- Take advantage of rainwater, storing them properly;
- Turn off the tap while brushing your teeth;
- Reuse the paper. This is very important as to produce paper spends up many liters of water;
- Ending the tap drip drip. A dripping tap, spend on average 46 liters of water per day;
- Reduce the domestic consumption of drinking water;
- Do not contaminate water courses;
- Act as conscious consumers and require companies to produce detergents and cleaning products that minimize environmental pollution (biodegradable);
- Avoid waste, taking care of water leaks, and do not wash the sidewalks using drinking water;
- When bathing, we turn off the shower to lather because a shower arrives to spend more than 16 liters of water per minute.



## WATER TREATMENT PLANT

The **DRAWCAD** considering the basic precepts of sustainable development is to you bearing solutions for homes, condominiums, shopping centers and industries in the development of water treatment units.

Customized solutions for the recycling of gray water (water sinks, tanks, showers), and use the capture and storage of rainwater for the treatment and reuse, leaving 100% safe for consumption.

For the implementation of the treatment plant, one must make a feasibility analysis on site where present proposal with less impact and more cost effective.



Water treatment plant is a place in which purifies the water collected from some source to make it fit for consumption and to use it to supply a given population.

The treatment process using physical and chemical processes for the water to get the desired properties that make them suitable for consumption.

This water treatment plant meets the established water consumption demand, from tanks, capturing the rain and sewage from homes.

The station is operated automatically without the necessity of constantly checking operator.

The executive project includes among others; basic design, detail, equipment, tools, materials, primary services, construction, assembly, control, conditioning, testing, support for pre-operation and assisted operation of the station, given the standard rules of quality requested by the customer. The control is automatic by PLC and HMI installed in the station.

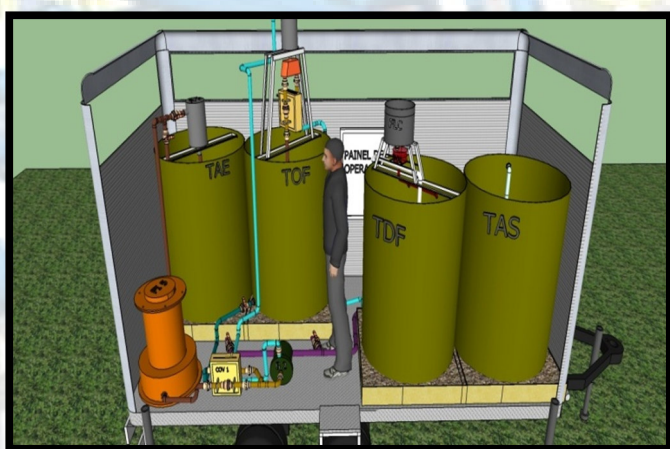


## WASTEWATER TREATMENT PLANT

The **DRAWCAD** considering the basic precepts of sustainable development is to you bearing solutions for homes, condominiums, shopping centers and industries in the development of wastewater treatment units.

Customized solutions for the treatment of effluents, meeting all environmental laws, returning them to the appropriate sources and respecting nature as a common good.

For the implementation of the treatment plant, one must make a feasibility analysis on site where present proposal with less impact and more cost effective.



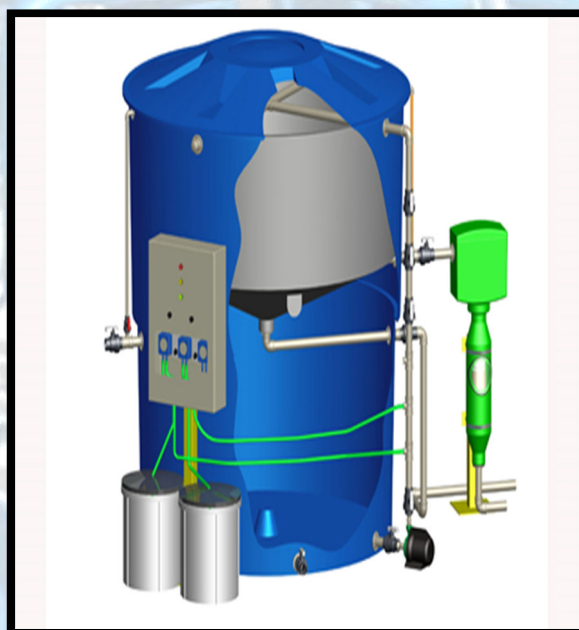
The water was used for various purposes, such as: bathing, washing dishes and clothes, brushing teeth, flush etc; and had changed its characteristics.

It is therefore very important that the sewage passes through a treatment process to be given back to nature a liquid that does not pollute or contaminate the environment or to be used for consumption or reuse.

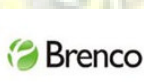
This wastewater treatment plant meets the 100% disposal of demand to be treated.

The station is operated automatically without the necessity of constantly checking operator.

The executive project includes among others; basic design, detail, equipment, tools, materials, primary services, construction, assembly, control, conditioning, testing, support for pre-operation and assisted operation of the station, given the standard rules of quality requested by the customer. The control is automatic by PLC and HMI installed in the station.





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DO BRASIL LTDA**zilor.**  
Energia e Alimentos

Phone: 11 2346-2140

[faleconosco@drawcad.com.br](mailto:faleconosco@drawcad.com.br)

[www.drawcad.com.br](http://www.drawcad.com.br)

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The information in this document contains  
general descriptions of the technical options  
available, they can not be applied in all cases.