DESIGN AND CONSTRUCTION OF WASTE WATER TREATMENT PLANTS (WWTP)

Within the hydraulic infrastructure business area, SICE provides engineering, construction, conservation, operation and maintenance services, as well as other highly qualified work resulting from its extensive knowledge of these systems. Its activity is based on the Integral Water Cycle, including collection, treatment, purification and reuse of water, before finally returning it to its natural environment.

In this area, SICE focuses on major infrastructures such as sanitation systems: sewers and outlets, WWTPs and tertiary treatment for effluent reuse.

SICE designs and constructs facilities for the complete treatment of all discharges, urban and industrial ones, to ensure the required level of treatment, complying at all times with the fixed regulation levels for discharges.

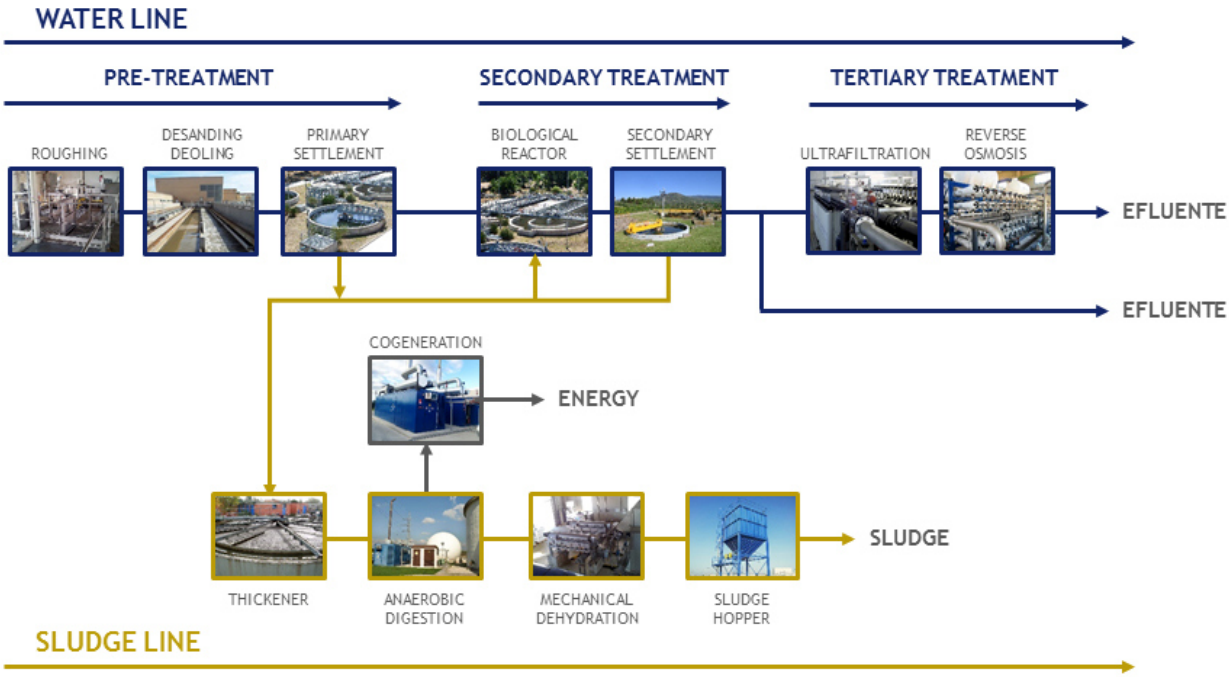
OBJECTIVES

The objectives that SICE complies with when designing and constructing this type of infrastructure are:

- Providing an ideal solution, taking into account the process used, measuring the plant units in a broad sense, so that they can deal with the variations in flow rate and pollutant load which could arise with the basic established parameters.
- Correctly distributing the various plant elements, dealing with:
    - Logical process sequence.
    - Topographical and geotechnical characteristics of the land.
    - Efficient operation with low maintenance costs.
- Providing sufficient flexibility at the facilities to ease operations.
- Designing each element of the treatment station so that it forms a well-balanced group.
- Architectural adjustments to buildings and green areas to reduce visual impact.
- Integrating the treatment process within the available land.
- Defining a project using measurements and evaluations, which allows the work to be carried out with as few variations or alterations as possible.

SICE offers **technical solutions** which result in **highly operational facilities**, as a result of its experience as **a company which operates and maintains** this kind of system.

Typical Block Diagram



General Design Criteria

SICE develops its construction projects based on the following criteria:

- Distribution of the plant elements, dealing with the logical process sequence, the topographical and geotechnical characteristics of the land and ease of operation.
- Flexibility in measuring elements to deal with changes to flow rate and pollutant load which could arise based on the original design.
- Ensuring the most economical operation and maintenance.
- Installing top brand and high-quality electromechanical equipment which reduces maintenance operations to a minimum and extends the service life of the facility.
- Selecting processes and elements which are sufficiently proven and approved.
- Reducing odour and atmospheric emissions as much as possible.
- Distribution of buildings in a well-balanced and logical manner to make it easier for operational staff to work and to reduce visual impact.
- Strict compliance with Workplace Health and Safety regulations.

Planning and Feedback

The scheduling of project tasks is based on SICE's comprehensive experience, ensuring that there is full compliance with all deadlines established by the client.

SICE pays close attention to the concept of "feedback" during the project design and construction process.

By using technical solutions derived from its experience as an operating company, SICE can make a difference between a correctly installed facility and a highly operational facility.

As a result, SICE's involvement in the construction drafting process ensures an understanding of the requirements and particular aspects of the project, and as a result it can contribute all of its experience and technical and human resources to achieve the desired objectives.