

DCS system Integrators,
and SCADA solutions.

“Ability is what we are capable of
doing. Motivation determines
what we do. Attitude determines
how well we do it..”



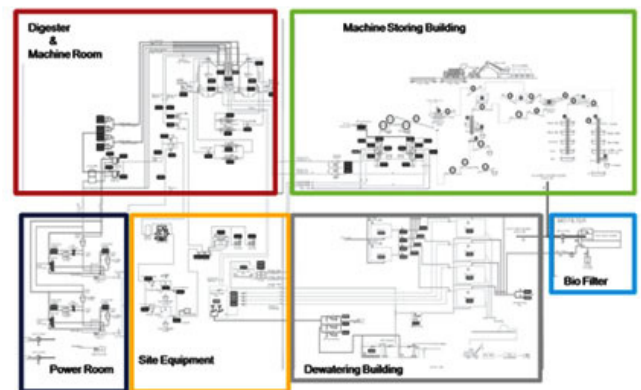
Municipal Solid Waste Treatment Plant, Saida – Lebanon



Since waste treatment is the major part of an environmental solid waste management, this plant's intended design was to come up with, and install, a suitable, widely available process technique in order to maximize the valuable outputs as well as the minimization of environmental impacts.

Within the first step, the so-called mechanical pre-treatment, the fractions, which are not biodegradable and can be reutilised as raw material respectively, e.g. metal and plastics, are separated from the organic waste fraction by means of crushing, splitting and separation. Within the second step, the so-called biological treatment, the organic rich fraction is treated anaerobically. During this digestion process the organic substance is decomposed by means of microorganisms and opposed to an aerobic process biogas is produced, which can be used for the generation of heat and electricity. Therefore no external energy will be necessary for the operation of the entire plant. The output of the digestion process is a compost-like material which contains organic carbon as well as nutrients like nitrogen and phosphate.

Additionally, a comprehensive management of waste water and waste air is provided in order to reduce emissions from the plant as far as possible. Therefore the water consumption is optimized in such a manner that the water needed for the process is reused in an internal cycle

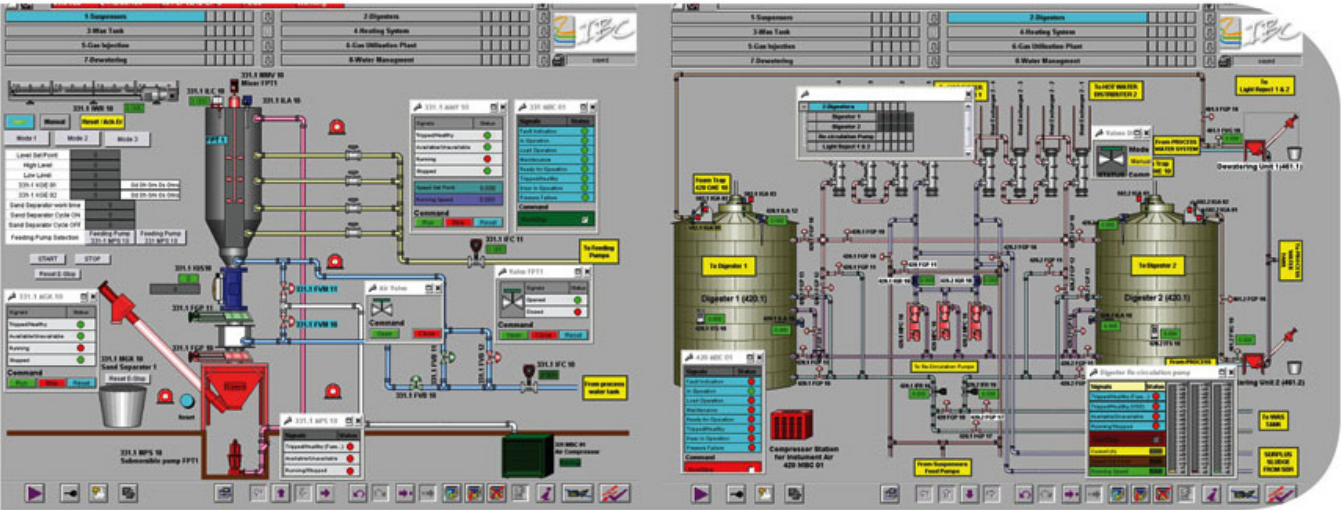


as much as possible. Surplus liquor should be used as nutrient rich irrigation water in agriculture. Air emissions are exhausted and the waste air is purified by means of a biological and a chemical scrubber system. Odorous substances will be removed and the odor of waste will not be noticeable after purification.



ITEC used SIEMENS A&D products and solution to successfully deliver the job

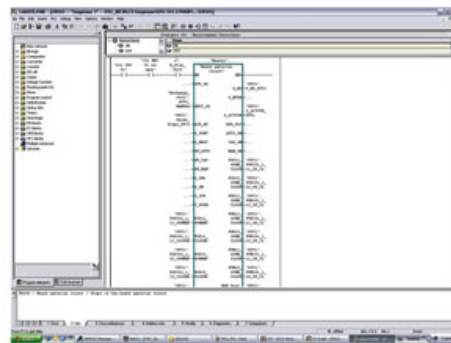
Standardized on the Siemens S7-300 automation systems, Siemens PROFIBUS and Industrial networks, the automation platform controls everything from the flow of electricity to the amount of reclaimed water being safely discharged from the plant. ITEC used WinCC that includes all the most important communication channels for linking to the SIMATIC S7 315-2 PN/DP controllers via the S7 Protocol Suite, as well as non-proprietary channels like PROFIBUS-DP/FMS, DDE (Dynamic Data Exchange) and OPC (OLE for Process Control); you can get other communication channels as Add-ons. Since all controller manufacturers provide appropriate OPC servers for their hardware, there are virtually no limits to what you can connect to WinCC.



The Runtime application of the WinCC basic software [client or server] offers all essential functions of a powerful Supervisory Control and Data Acquisition (SCADA) system

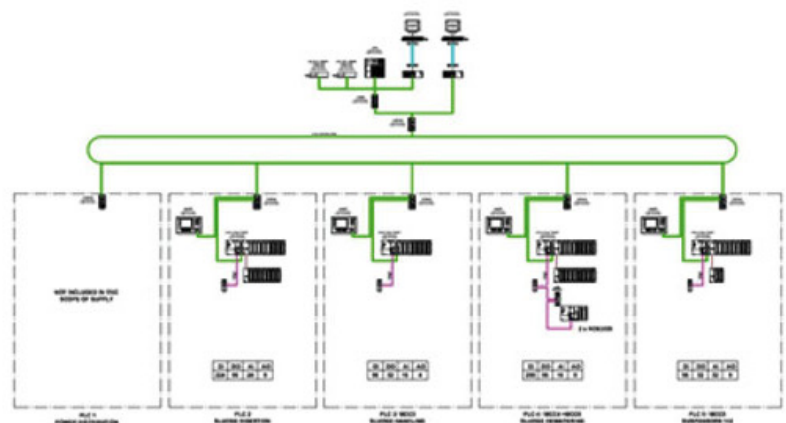
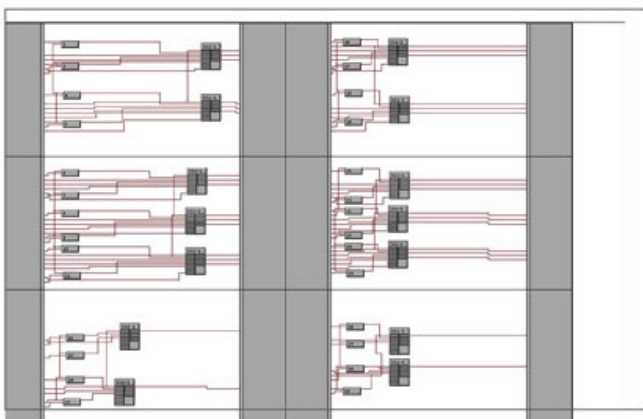
- User Management
- User Interface
- Message System
- Archiving System
- Reporting and logging system
- Control technology functions

Using STEP 7 to provide a comprehensive development and configuration environment for creating a Totally Integrated Automation solution while improving engineering productivity and reducing implementation times. Its extensive scope of functionality addresses all phases of an automation project ranging from programming and configuring to testing through on-going maintenance. The STEP 7 project manager (SIMATIC Manager) uses a true project or system-wide scope, encompassing multiple S7 CPUs, the associated distributed peripherals, all system networking using IMAP.



For Programming we have used a combination of three PLC languages CFC, LAD and S7 Graph, and many other techniques to integrate the whole plant in one system.

Using Distributed I/O's (ET200S and ET200M) also helped to control different parts of the plant efficiently.





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