

The Royal Cosun sugar group takes care of thick juice storing and processing to complete the services of the Dinteloord sugar factory, which belongs to the Suiker Unie group. In this context, Suiker Unie is converting the B and C sugar melting plant from thin juice and condensate to thick juice. In addition, the sugar cooling plant has to be renewed to ensure that it produces sugar of the required quality.

From the start, BMA was involved in these two projects with engineering services, in order to find the best solution that takes into account alternative technical concepts as well as the required capital expenditure. After first consultation meetings, the available options regarding processes, equipment, installation and investment volumes were examined in the form of basic concepts.

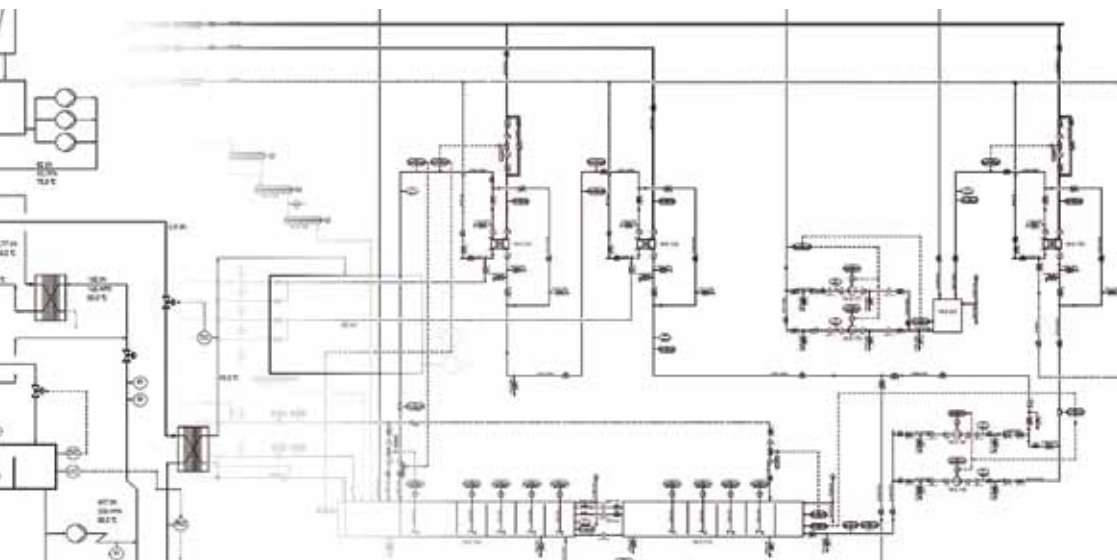
For an expansion of the sugar melting plant with downstream liquor filtration to 400 t/h liquor, the central issue was to achieve optimum melting and filtration in terms of process reliability, availability of melting volume, necessary heat exchanger areas for heating the liquor, and a suitable filtration method.

In the basic concept for the new sugar cooling plant, which is to handle 170 t/h white sugar, a total of 16 different plant configurations were analysed.

The space available in the factory allowed fluidised-bed coolers to be installed either horizontally or vertically. One single horizontal fluidised-bed sugar cooler with eight banks of cooling tubes, but without any special air conditioning or separate chiller, eventually turned out to be the most cost-effective solution considering both investment and operating costs. It was also the most space-saving option.

In the second phase of consulting by BMA, further details were provided for the preferred option of the basic concept. To be able to present accurate costs of the future installations, the basic-engineering concept was expanded into a preliminary detailed-engineering concept.

Such a concept consists of mass and energy balances that provide the basis for determining the necessary quality and quantity of process materials, such as steam, liquor, sugar, water and electrical power, in order to meet the customer's requirements. These qualities and quantities are then finally documented in an interface list. A preliminary piping and instrumentation diagram (PID) details the necessary equipment, all planned pipelines, the necessary control equipment, and all valves and fittings. Specifications for equipment and machinery, and field units and control equip-



ment, together with a proposed layout, define the different components.

On this basis it was possible to give a very accurate cost estimate for the complete project. To enable the customer to review the documentation for plausibility, a preliminary process description was also presented. With the documents prepared by BMA, the customer will also be able to invite suppliers other than those proposed by BMA to submit their bids for the necessary equipment.

One of Suiker Unie's particular concerns was to achieve transparency for their decision making process. The BMA team assisted during the discussions by providing large amounts of detailed information and comments on technical aspects. Since project meetings and interim results are always documented, all steps starting with the first idea up to their implementation can always be traced back.

The consulting and preliminary planning services provided by BMA have now been finalised to the project team's complete satisfaction. Suiker Unie themselves are going to take care of the next planning steps for implementation of the project.

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Benefits

- BMA assistance with the selection of technical concepts and alternatives
- Accompanying discussion and presentation of ideas
- Transparent decisions
- Documentation of decision making process
- Step-by-step approach with "exit" options