RELOCATING AND ENLARGING NILS OSCAR FROM STOCKHOLM TO NYKÖPING

UWE LEIBFACHER, LEIBFACHER CBB CONSULTING AB, E-MAIL: LEIBFACHER.UWE@TELIA.COM

New brewery location at Fruängskällan

THE BACKGROUND

The Nils Oscar Company is probably unique in Scandinavia and perhaps in the whole world: they can boast that they actually control the entire production chain – from the grain fields to the bottle.

On the fields around Tärnö Manor Farm, located one hour from Stockholm, the raw material crops are cultivated for the entire Nils Oscar product range, including ten kinds of beer and four distilled products.
The barley, wheat, rye, and oats are harvested and malted in Nils Oscar's own malthouse at Tärnö Manor Farm.

The malt becomes a key component in Nils Oscar's beer and spirit production process. One single company is responsible for cultivation, malting, brewing, and distilling all under one roof - and under one brand.

Nils Oscar Sundberg, who is depicted in the well-known brand icon, is the genuine article. He was the grandfather as well as the childhood idol of Karl-David Sundberg, the current owner of the Nils Oscar Company, and had been working as a farmer both in the US and in Sweden. Nils Oscar personifies the genuine values that Nils Oscar products stand for in every aspect.

In 2006, ten years after the beginning, the demand for brewed and distilled beverages from Nils Oscar had increased to such a degree that the brewery in particular became unable to supply the growing customer base. In the beginning of that year the distillery moved from Nyköping to Tärnö Manor Farm. At the same time the planning process began, envisaging a move of the brewery from Stockholm to Nyköping and a subsequent expansion of its capacity.

In February 2006 a project group consisting of Patrick Holmqvist (brewmaster in the Nils Oscar Company), Jonas Kandefelt (CEO, the Nils Oscar Company), and Uwe Leibfacher (Leibfacher CBB Consulting AB) began to define the equipment needs and the adaptation of the former

distillery and storage buildings at Fruängskällan in Nyköping to brewery use. In November 2006 the entire project was finished. The old location at Kungsholmen in Stockholm was now abandoned and empty and the new location in Nyköping was completely up and running.

THE PLANNING PHASE

Nils Oscar's capacity goal was to enlarge the brewery from 5.000 hl per year to 20.000 hl per year. The purchase of further fermentation and bright beer tanks were to be made in 2006, followed by a second step of investments two or three years later.

Five major tasks had to be planned at a detailed level:

1) Defining equipment and technologies for the new location at Fruängskällan, resulting in a concrete layout
2) Purchase of additional equipment, new as well as second hand
3) Adaptation of Fruängskällan to brewery use in accordance with the defined layout
4) Moving of production and equipment from Kungsholmen in Stockholm to Fruängskällan and emptying the old location
5) Installation and start-up of the brewery at Fruängskällan

Leibfacher CBB Consulting AB became responsible for the tasks 1, 2, and 5 and for a general time schedule covering all activities. That schedule had to be updated continually, as did the project budget. The Nils Oscar Company had to take care of the tasks 3 and 4.

Defining equipment and technologies is the foundation of the whole project. Inspecting the old location and deciding what to move and what not to move. Inspecting the new location and deciding what has to be done, before being able to install. Reviewing the technologies at the old location, and deciding what to keep and what to change. Discussing with possible suppliers and deciding whom to work with.
The most important decisions were:

- purchase of new cooling equipment adapted to the final capacity of 20.000 hl to Fruängskällan
- purchase of a new wort cooler to Fruängskällan
- installation of a stainless steel piping system with one panel per two tanks instead of hoses
- a flexible piping system that allows for the combination of several processes at the same time (filtration and bottling, wort cooling and tank cleaning, filtration with all other processes, etc.)

Delivery of CCT from Kungsholmen to Fruängskällan

Delivery of new wortcooler module from Maseco to Fruängskällan

- installation of two central CIP stations
- purchase of three new cylinderconical tanks (CCT) with 3 bar working pressure for flexible use - both as fermenting and as bright beer tanks - to Fruängskällan
- purchase of two bigger second hand CCT to Fruängskällan
- purchase of a second hand storage tank for yeast to Fruängskällan
- adaptation of two existing stainless steel tanks at Fruängskällan for use as cold water buffer tanks
- changes in the layout of the bottling line
- time schedule for installation and start-up at Fruängskällan divided into several steps
- choice of main suppliers with Velo S.p.A. (new CCT), York Refrigeration AB (cooling equipment), Maseco AB (wort cooler, CIP, yeast tank, pumps, and stainless steel piping system) and Högbergs Maskinservice AB (modification and reinstallation of bottling-line)

After four months of intense planning and preparing the brewery installation in Nyköping could begin in June 2006.

THE EXECUTING PHASE

The presence of a coordinator during the installation is absolutely neccessary. Leibfacher CBB Consulting AB had this function, continually reporting to Nils Oscar what was going on at Fruängskällan. This was very important, as it saved a lot of time for Nils Oscar. Only one contact covered all the different suppliers. ➜

After the delivery of the purchased additional CCT in June, these were installed in July along with the piping system, including CIP and cooling equipment. Even two CCT from Kungsholmen were moved to Fruängskällan, as these had to be placed there together with the additional CCT.
The first start-up step consisted of the bulk delivery of wort brewed at Kungsholmen for fermenting and storage at Fruängskällan.

After all the remaining beer at Kungsholmen had been filled, filtration, keg cleaning and filling equipment, and the bottling-line were moved to Fruängskällan.
The remaining 8 CCT from Kungsholmen followed, as well as the bright beer tank.
Finally the hot water tank and the brewhouse left Kungsholmen.

The second start-up step involved the filtration and the filling of bottles and kegs.

The third step was to begin the brewing process at Fruängskällan in October and the last step the start-up of the 8 CCT from Kungsholmen in November 2006.

The buildings at Fruängskällan can mainly be devided into three parts:

1) The brewhouse, which contains one CIP station, the yeast tank, and 8 fermenting and storage tanks.
2) The bottling hall containing filtration equipment, a keg-cleaning and filling station, and the other CIP.
3) The tankhouse containing 4 bright beer tanks (three of these can even be used as fermenting and storage tanks) and 4 fermenting and storage tanks with space for three further tanks.

EXPERIENCES

Smaller companies like Nils Oscar usually do not have their own personnel resources that enable them to run bigger projects such as a relocation without external help. Who would employ an engineer, if he were needed only once or twice a year? Small companies usually don't have experience with bigger projects. As a consequence expert help from outside is an important option. The choice of the external expert is a key factor for the technological as well as the economical success of the project. The expert's task is easy – he or she has to make the project both better and cheaper.

CCT installation at Fruängskällan in Nyköping

Pipeless CCT installation at the old location at Kungsholmen

The planning phase is the most important one in a successful project. Key factors in order to avoid problems later on are:

- A clear definition of who is responsible for what
- An update of the time schedule at least once a week
- An update of the budget at least once a month
- Defined routines for the communication within the project group

The more the brewery staff is involved in defining new routines, the greater their interest would be. Especially cleaning routines and facilities like water hoses should be established from the beginning in order to keep the new equipment looking new.

A brewery needs another type of fire warning system than a distillery. As the existing system from the distillery was maintained, the local fire brigade were the first visitors in the start-up phase. Actually, Nils Oscar's brewers were only cleaning kegs and not burning down the brewery.

It is not a good idea to wait with the installation of high level sensors until after the start-up - unless you want to overfill your water tanks and create swimming facilities in the cellar.

Even smaller breweries of around 3.000 – 5.000 hl per year need a CO_2 supply that allows for parallel use, for instance during bottling and filtration. This requires a tank installation instead of bottle batteries.

Generally speaking, utility supply in the right dimensions is important in order to make a brewery function and avoid trouble. With regard to Nils Oscar, the new wort cooler and the new cooling equipment even helped to improve the product quality through defined possibilities for temperature control.

SUMMARY

In the beginning Nils Oscar did not know exactly what the relocated brewery at Fruängskällan should look like, and what the project might cost. On the other hand, they knew very well that there was not much time, as the rental agreement for the Stockholm location at Kungsholmen ended by 30 September 2006.

The close cooperation with Leibfacher CBB Consulting AB, provided the missing pieces of the relocation puzzle and they were soon in place. The defined time schedule was continually revised, and the project could be realized within the established frameworks of time and economy.

Nils Oscar's expectations with regard to lower production costs and a higher product quality at Fruängskällan were fulfilled.

Backside of a two tank panel in the tankhouse at Fruängskällan

Outside installation of York cooling equipment at Fruängskällan

New brewery location at Fruängskällan in Nykoöping