

A tannery in the making

BY JOHN AVERY

Taking the first steps: a new BLC service helping to plan, design & specify new tanneries

Leather manufacture is a complex process and it takes concentrated planning to turn an initial concept into a modern tannery. A wide range of skills and experience are required for projects of this type and BLC can undertake all or part of the project as required in conjunction with the client and selected project partners. Preliminary planning ensures: cost savings, reduced time, elimination of costly mistakes and process optimisation.

THE FOLLOWING CASE STUDY ILLUSTRATES HOW BLC'S PROJECT MANAGEMENT PROTOCOL HELPS TO BRING THE CONCEPT TO LIFE FOR A MAJOR CLIENT IN THE MIDDLE EAST.

With an indigenous meat industry, the opportunity was identified in the United Arab Emirates to work a "waste" material into a highly valued product. Camels, cattle, sheep and goats are bred for consumption and the potential to produce a national leather product, from what has been treated as just the "wrapper for the meat", was turning from a vision to a reality.

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The BLC project management can be broadly broken down into four main stages:

1. Feasibility study
2. Conceptual design
3. Defining the shape of the factory
4. Detailed design

Clients can spend time at BLC working on design, engineering and technical aspects which enables them to take away a concept, complete with engineering drawings and costings, ready to select contractors and architects.



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The first stage was to commission a feasibility study to determine whether the potential still existed for the re-establishment of a commercial scale tannery. The study exposed the hide availability, quality and cost issues and worked them into a prospective company profile that allowed projection of financial scenarios. These indicated that there would be a suitable return on the clients' investment costs.

A primary objective in the development of the project has been to incorporate the best of modern techniques and state-of-the-art manufacturing principles to ensure quality and consistency of productive output.

The same high ideal reinforces the approach to effluent and waste treatment issues, using good practice within the factory to reduce environmental loadings at source. This is of paramount importance for the long-term stability and sustainability of the company.

On the strength of the feasibility study, the Al Khazna Tannery Project was born. BLC Leather Technology Centre, was selected to be the main process consultant. Using the in-house industrial experience at BLC, the critical aspects of the feasibility study were combined with the needs of the client to make the first or "conceptual" design. Subsequently architects and engineers were engaged to work along with the BLC Process Project Manager to produce a detailed design for the new tannery. At each stage BLC ensured, through an established project management protocol, that process-related issues were observed by all the other project partners.

BLC has provided supervision and advice on all aspects of the process, machines, methods and products. This responsibility extends to systems, processes and training of key personnel to enable the factory to run. During the first year of factory operation, BLC consultants will take the leading role on-site working with the team to develop the plans, deliver the results, fine tune the processes and products to meet local, national and export demands.

With the internal design details of the tannery completed, machinery has been sourced from a range of well known international supply companies, ready for the installation and commissioning of the plant. The land allocation and site preparation were undertaken in April 2003 and around the same time all operational licenses were granted, supply of services was guaranteed and access roads were laid.

The tannery design incorporates all that is necessary to convert raw hides and skins to finished leather and will be equipped with the best of process control methods and automation to save labour and ensure consistency and quality of product. To provide optimum conditions for both the product and the people involved in making it, the owner has specified a fully air-conditioned facility. Recruitment of key personnel is now at the top of the agenda, and the expectations are high in terms of the calibre of applicants. Building is at an advanced stage with a target start-up date of



Artist's impression of the completed factory at Al Khazna, UAE, due to start-up in early 2005. This 5.5 million ft² yr⁻¹ facility is designed for best practice manufacturing of a wide range of products from 4 different raw materials. Tannery site courtesy of Gibb (Middle East) Ltd.

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October 2004 (see photo and artist's impression below left). Supply of raw material has been assured by locating the factory at Al Khaznah, between Abu Dhabi and Al Ain, where an existing abattoir will be the main hide supplier. A collection network, using refrigerated transport has also been planned to bring additional raw material from other slaughterhouses in far-flung districts.

Process development has been undertaken at BLC and a range of shoe and leather goods products will be offered to both local and export markets. Al Khaznah Tannery is designed to work a mix of camel and bovine hides as well as the available indigenous small skins. There will be four distinct product lines: camel, bovine, goat and sheep, totalling a daily input of 500 hides and 1500 skins.

Dr Abbas Elansari, Project Manager, explained "There are many challenges to face in a complex project of this nature, but I am sure with the spirit of teamwork and the calibre of the partners that we have brought together, nothing will be insoluble.

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Dr Abbas continued "The tannery will be a showcase facility, an example to the region of how to use up-to-date technology to make the best products possible. Internally, there are many integrated systems and control packages. The tannery is to be equipped to the highest of current standards and automation of the wet departments will help to ensure that our customers get consistent quality, time after time".

installed that will be reliable and repeatable. Mike Parsons, Managing Director of BLC, added; "This is a very exciting project for us, it allows all areas of our business to contribute to the end result. We are proud to be involved. It is particularly rewarding for our team members to see this project all the way from the initial concept, helping the project to grow into the full-scale business that is the ultimate aim."

Thanks to the vision of the client, by the end of 2004 the United Arab Emirates will be a centre for leather manufacture to the highest standard.

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Looking down the 185m factory length from what will be the wet end towards the finishing department. Excavations in the foreground are for segregated drainage for different process outflows and the reinforcing (centre) is the start of the mezzanine floor for drum processing.