slcworld

St. Lawrence Cement
Volume 3, No. 2
May 1999

Greenport

to rank among world's most technically advanced plants

SLC's proposed $300-million (U.S.) cement plant at Greenport, New York promises to be the largest single-line plant in North America and one of the most technologically advanced cement manufacturing operations in the world.

Assuming the successful completion of the permitting process, the state-of-the-art Greenport facility could be producing up to two million metric tonnes a year by 2002, becoming SLC's highest producing plant and increasing our overall capacity by 1.5 million metric tonnes.

Boosting domestic capacity and reducing the company's reliance on imported product are key components in SLC's strategy for long-term growth. And nowhere is that increased capacity more keenly awaited than in the Northeastern U.S.

The Northeast Metroplex which extends from Boston to Washington DC is home to 44 million people, or 17 per cent of the U.S. population. Demand for cement in this market has been steadily outstripping what SLC's Canadian and U.S. plants are able to supply, requiring the division to supplement with imported product. With strong economic growth forecast for years to come, the business case for investing in a new facility gained momentum. » continued, page 2

What does Greenport mean for Catskill?

If you look out over the Hudson River from the Greenport property, you can almost see the Catskill plant 20 kilometers (12 miles) in the distance. The Catskill plant is the only remaining SLC plant using the costly wet process* to manufacture cement. The plan is to shut the plant down, once the proposed Greenport plant is in full operation.

Catskill's 150 employees were not surprised by the plan. In fact, many have been expecting it for years.

Catskill's aging facilities and inefficient cement manufacturing process make it more difficult to retrofit than other SLC plants.

"Modernizing Catskill's wet process operation is less than an optimal solution," says Vice President, Cement Manufacturing & Engineering, Phillip Lochbrunner, "It would mean all but tearing down the plant and starting from scratch. We would be replacing about 80 per cent of the original plant and still not realizing all the advantages of a new construction."

And with the Greenport plant virtually next door, high quality, more environmentally friendly, lower cost cement will fill the regional demand at over three times the rate of Catskill.

Although the plant is slated for closure, the announcement comes at a positive point in Catskill's evolution. The plant is on a upswing. Employee teams have won the President's Award for Employee Involvement two years running. And after many years in the red, the plant has posted profits for the last three years.

"In recent years, there has been a marked turnaround on the part of both the company and the employees. The company has taken steps to improve the working environment and operational efficiency and employees have met us part way," observes U.S. Division Senior Vice President, Dennis Skidmore.

"There is an air of optimism at Catskill," reports Charlie Klotz, Manager, Human Resources at Catskill. "By several accounts, most employees are eager for a chance to learn the new skills required to operate one of the world's most modern cement plants."

* See article page 3

Greenport continued...

"We're building for the 21st century," says U.S. Division Senior Vice-president, Dennis Skidmore. "If we're going to remain market leaders and continue to cultivate long-term customer relationships, we must be able to secure a domestic source of modern, low-cost, high-volume production to meet future demand, grow our markets and solidify SLC's leadership position into the new millennium."

One of the most exciting aspects of the Greenport project is that it will be built from the ground up, taking full advantage of the latest innovations in equipment, processes and the newest manufacturing techniques in a way that refitted older plants cannot. This adds up to greater efficiency, more reliability and significantly more control over environmental factors.

"It's the latest in plant design," affirms Vice-president, Cement Manufacturing and Engineering, Phillip Lochbrunner. "The new plant will incorporate the best proven technology for this site and will be world class."

In anticipation of a favourable outcome of the permitting process in the year 2000, preliminary steps are being taken to prepare the division's network of terminals for the higher volumes.

"We're looking at substantial increases in production not only from Greenport but as well from our fly ash operations and our new GranCem® grinding facility at Camden. So we are investing now to increase barge capacity and expand our terminals to be able to handle the increased volume," says Dennis Skidmore.

Given the extensive investment in getting the Greenport project off the ground, how soon will we know if the project will go ahead?

"Obtaining these permits will be a challenge. Officially, the earliest we can get an answer is when the initial permitting process is completed sometime next summer," explains Dennis Skidmore. "I'm not a betting man, but we wouldn't be investing this much effort if we didn't think we had a good chance of success."

When can we expect the green light?

Building a cement plant on the eve of the second millennium, is a long, curving road from initial concept to operation. Long indeed. If everything unfolds according to plan, it will be at least 2002 before the proposed Greenport plant can begin producing cement. Construction of the plant itself would take at least 18 months, and the balance will be taken up with the permitting process.

In all, SLC must obtain 21 qualifying permits prior to applying for the all important 'permit to construct'. These permits, mostly environment-related, run the gamut from land use to visual impact and involve various state, federal and local agencies.

"It's not like applying for a driver's license," notes Project Manager, Dirk Cox who heads SLC's five-person project management team headquartered in Greenport. "New York State has some of the most stringent environmental regulations in North America. Our task is to demonstrate to the authorities that we have the equipment, the expertise and the desire to do things properly."

The permitting process is already underway. The project management team, which also includes Joan Buser, Johanna Murtha, Joe Selner and Denise Brubaker, must manage the various stages of the process and orchestrate the activities of consultants in communication, engineering and environmental law.

Environmental impact studies are a key part of the permitting criteria. SLC must provide studies on matters from archeology to flora and fauna to impact on local traffic levels. Two in particular – the visual impact study and the extensive computer modeling for air emissions – require high levels of technical detail. Air modeling alone can take up to eight months to develop fully.

By law, the environmental review process allows for a minimum of 130 working days (or six months) of public consultation - another fact which explains the lengthy wait. To provide the local citizens with answers to their questions about the proposed project and seek their input, the project team is actively engaging local stakeholders and interest groups in discussion and dialogue.

"We are sensitive to the needs of the local community and we are out there actively seeking feedback from them. We don't intend to make our decisions in a vacuum," confirms Dirk Cox.

The team is working hard to promote a favourable outcome and simplify the review process for all concerned.

"We have the technology needed to ensure environmental compliance," assures Dirk Cox. "But, time is of the essence. For the project to remain viable, we must be able to keep the process moving ahead in a timely manner."

Milestones on the road to building a new plant

SEPTEMBER 1998
- project announced

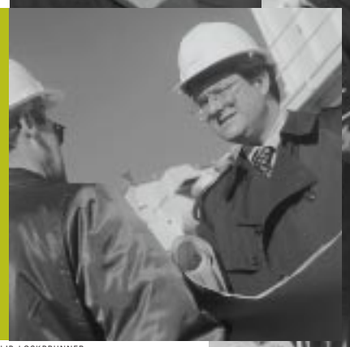
OCTOBER 1998
- qualifying permitting process begun

SEPTEMBER 1999
- feasibility study complete

SUMMER 2000
- qualifying permitting process complete
- permit to construct procured
- ground breaking begins 30 days later

YEAR 2002
- Greenport plant on line

CHARLIE KLOTZ, H.R. Manager, Catskill Plant



PHILLIP LOCKBRUNNER,
Vice President, Cement Manufacturing & Engineering

(left to right) JOE SELNER, Plant Engineer,
DIRK COX, Greenport Project Manager,
DENNIS SKIDMORE, U.S. Division Senior Vice President,
JOAN BUSER, Administrative Coordinator

Advanced technology in a nutshell

What makes Greenport so efficient?

The most sophisticated, environmentally sound cement manufacturing process available today comes with a fancy name. It's known as the dual strand, 5-stage flash calciner with staged combustion. And it's a force to be reckoned with. It requires less energy to produce a metric tonne of cement (see table page 2). Environmental benefits are increased and product quality is excellent.

Greenport's dry process operation output will be produced by a single kiln, 18' in diameter and a mere 250' long (the Catskill kiln, by comparison, is 500'). The pre-heating/precalcining tower, which stands 353' high, is where most of the action is and where most of the operational and environmental efficiency is derived.

To understand the benefits derived from the dual strand, 5-stage flash calciner process, it's important to grasp the five main stages in making cement. These are:

- drying out the raw material
- preheating the raw material
- calcining - a chemical process induced by 900° C heat where Calcium Carbonate (CaCo3) is broken down into carbon dioxide gas and lime (CaO)
- sintering
- cooling

In the *wet process*, such as the one at Catskill, the kiln feed (made up of crushed limestone, shale, sandstone, iron ore, mill scale or fly ash) is mixed with water to make it easier to blend. The resulting slurry is fed directly into the rotating kiln. This process requires a long kiln to accommodate the drying and preheating stages which take place inside the kiln. It also requires substantial energy consumption to evaporate the 30 per cent water and heat the larger area. Temperatures are gradually increased inside the kiln to promote calcination and eventually, at 1500° C (3000° F), the formation of clinker.

In the *dry process*, raw materials are mixed without adding water and are either introduced into the kiln directly or undergo the initial processing stages outside the kiln. The Greenport plant design, like that of Mississauga's plant, is based on the preheater, precalciner process. Here the drying, preheating and precalcinating stages occur in a series of steps inside the tower, prior to entering the kiln, thus reducing the amount of energy required inside the kiln. As well, the number of stages in the tower allow for more effective air pollution control devices and create fewer air, water vapour and dust emissions. With this method the material entering the kiln is mostly (90%) calcined and requires a shorter sintering time.

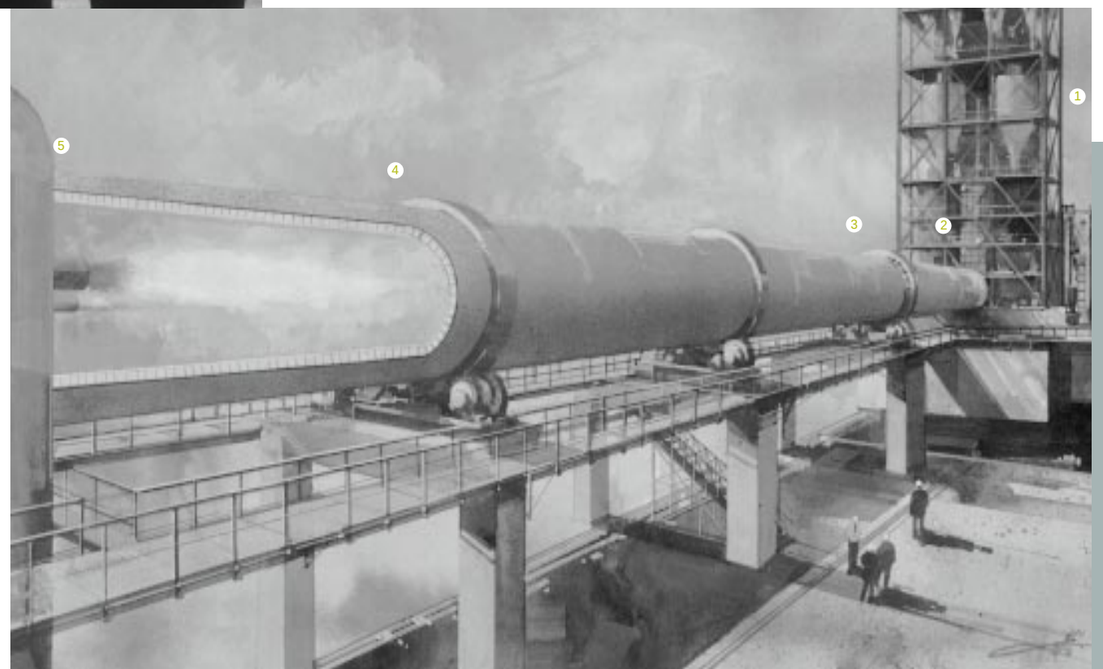
Although the preheater, precalciner process has been proven in the field for some 25 years, the Greenport facility will take advantage of the latest computer monitoring, control and optimization technologies, advanced electrical systems, refined maintenance capabilities and far greater equipment reliability.

"The project is very exciting. The industry has made more technological advances in the past 20 years than in the past 20 centuries," says Phillip Lochbrunner. "And while we've been steadily introducing these innovations in our plants, this new plant designed from the ground up lets us simplify greatly the way material moves through and that alone makes operations much more efficient."

SLC plants at a glance

Optimizing processes and lowering energy costs are important factors in producing high quality, low cost cement.

Plant	Process	Annual output (metric tonnes)	Fuel consumption per metric tonne (KJ/KG)	Power consumption per metric tonne (KWh/Mt)	Year built	Number of kilns
MISSISSAUGA	dry/preheater, precalciner	1.5 million	3.6	140	1968	1
JOLIETTE	dry/long kiln	1.1 million	4.4	166	1965-1973	4
HAGERSTOWN	dry/long kiln	525,000	4.8	154	1971	1
CATSKILL	wet	600,000	5.2	129	1964	1
GREENPORT	dry/preheater, precalciner	2 million	3.3	128	proposed 2002	1



The workings of a modern kiln

1 Raw meal is fed into the top of the preheater tower where it is heated by kiln exit gases as it passes through a series of vertical cyclone chambers on its way to the kiln.

2 The heated raw meal is fed into the precalciner located just before the kiln, where up to 90% of calcination - the removal of carbon dioxide - occurs.

3 The material enters the inclined rotating kiln, is progressively heated and undergoes chemical reactions as it flows along the length.

4 The material becomes partially molten as it nears the white-hot flame at lower end where the temperature reaches 1480° C (2700° F). Through intense heat, the material is transformed into clinker.

5 Pollution control devices remove the CKD generated in the process from the exit gases before they are released into the atmosphere. Much of the CKD collected is reintroduced to the kiln as part of the raw feed or responsibly managed or sold.

Environmental responsibility includes open dialogues

DENISE BRUBAKER
Environmental Manager,
Greenport Project

Cement making has long been part of life in the heart of lush Hudson River Valley. Since manufacturers first uncovered huge limestone deposits in the area, it has been an important source of livelihood and a major contributor to the regional economy.

At the same time, the fond memories of jobs and prosperity are sometimes accompanied with those of the fine dust that settled on cars or heavy 18-wheelers passing through town. The fact is that cement manufacturing has come a long way since those earlier days. Today, proven technology makes it possible for SLC to eliminate any off-site dust and comply fully with stringent environmental regulations.

Environmental stewardship is an important component of all SLC's endeavors and ranks as a key corporate objective of the Holderbank Group. Striking the optimum balance between environmental preservation and economic prosperity is a governing factor in the Greenport project.

"We are committed to building the most technologically advanced cement manufacturing facility in North America, from both an operations and environmental perspective," explains Greenport Project Manager, Dirk Cox. "We are confident of not only meeting all the necessary New York State and U.S. Environmental Protection Agency regulations, but, in some cases, exceeding them."

This means the proposed Greenport facility is being designed to take advantage of the most advanced control technology for maximum environmental protection. For the local community, this translates as:

- a commitment to lowest achievable emission rates
- no off-site dust
- 80% of shipping will be by water and rail
- no water to be drawn from the river
- a commitment to enhance dock and riverfront views

The items on this list, coupled with a commitment to advanced technology, go a long way towards minimizing the environmental impact of the proposed plant. Still, environmental responsibility is also a matter of open dialogue and exchange with local citizens and community groups.

Over and above the formal public consultations that accompany the permit review, SLC's project management team has been actively seeking the input of members of the local community through public forums, information sessions, direct mailings and media contacts. The company is also consulting the community on its plans to upgrade the riverfront barge slip.

"We are building our project to have a positive impact on the community," states Denise Brubaker, Environmental Manager, Greenport Project. "We understand that many important issues can arise during the planning and application phases of the project and we are determined to address every concern."

SLC's 5-point Community Environmental Commitment

To underscore SLC's dedication to environmental stewardship on the Greenport project, a formal 5-point Community Environmental Statement Commitment has been developed.

1. *Commitment to the highest industry standards for environmental performance* through the use of top quality environmental technologies available today and strict adherence to state and federal regulations which contribute to both the design and operation of the facility.

2. *Commitment to investigate the establishment of a not-for-profit environmental education center* dedicated to the Hudson River Valley ecology and the environmental education of Columbia County students.

3. *Commitment to provide a positive environmental impact* through energy efficiency and the responsible stewardship of natural resources and by replacing the inefficient wet process at the Catskill plant with an advanced dry process operation at Greenport.

4. *Commitment to work with our community and special interest groups.* We share the legitimate environmental concerns of our community and welcome their scrutiny as we pledge to work together to develop the most effective solutions to environmental protection issues.

5. *Commitment to preserve the maximum land area at our Greenport site in its natural state* and develop opportunities for public access and community use.

Fast facts about the Greenport property

SITE DESCRIPTION
The proposed plant will be located on a 225-hectar (550-acre) parcel of the 720-hectar (1,783-acre) site owned by SLC. The plant will be set about 1.6 km (one mile) back from the river bank.

QUARRYING
On site quarry (445 hectars/1,100 acres) has a 100-year reserve supply of limestone.

SHIPPING
Cement will be shipped by water, rail and truck to SLC's U.S. distribution terminals.

LOCATION
1.6 km (one mile) south of Hudson, New York. 180 km (110 miles) north of New York City. 65 km (40 miles) south of Albany on the navigable Hudson River.

SITE HISTORY
Cement making has been an established part of the region since large deposits of limestone were first discovered around the turn of the century. After it had changed hands several times, SLC purchased the property in 1976, when its owner Universal-Atlas Cement ceased operations.

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