

REDESIGNED TECHNICAL CENTER SPEEDS DEVELOPMENT OF SPECIALTY PRODUCTS

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CAN A NEW FLOOR PLAN FOR THE OFFICE AFFECT PERFORMANCE ON THE PRODUCTION FLOOR?

THE OTIS SPECIALTY PAPERS, INC., MILL IN JAY, ME, has seen its share of changes during a century of paper production. The specialty-papers field is volatile by nature because it serves niche markets. But today's environment is especially challenging. More than ever, survival depends on innovation and quick response to the moving target of customer demands.

"We believe that our challenge going into the 21st century is to position Otis as a market-driven, service-oriented company," says Bruce Dimick, technical director for Otis. "Technology is certainly a key factor, but we also feel a need to support a corporate culture that supports this philosophy—a culture that views success as a natural outgrowth of the team approach."

Dimick, an avid follower of management theory, is familiar with the concepts put forth by Thomas J. Allen, professor of organizational psychology and management at MIT's Sloan School of Management. In his book, *Managing the Flow of Technology*, Allen addresses the critical issue of communications and draws a clear cause-and-effect line between the layout of the physical plant and the effectiveness of communications among individuals within a manufacturing environment. Allen makes the point that physical space—the distance between departments—impedes the flow of technology.

Several industries (such as pharmaceuticals, biotechnology, chemicals) and university research labs have tried Allen's approach, and they are beginning to reap the benefits of his work. The concept may be new to the paper industry, but the issues are not. "Too often in the paper industry—as in other industries—the research process takes place in an almost cloistered environment, in a place far removed from the realities of a mill environ-

ment. It is often quite difficult to translate research findings into finished products, and it is really a communications issue more than anything else," says Dimick.

When workplace functions are located at different ends of a building and closed off from each other, bringing people together to work on a common goal is a difficult task. People tend to display territorial feelings, protecting their departments and functions from "outsiders." This is especially true when workers in different departments perceive their missions in different terms. For example, compare the culture in the manufacturing process with the culture of the research-and-development end of the business. Manufacturing tends to have a very practical emphasis, with a focus on the day-to-day issues involved in getting a job done. Research and development, on the other hand, has the luxury of looking beyond the practicalities of what can be done today to what could be done under ideal circumstances.

"Communication is important in any business, but in the specialty-paper business—where each project presents new challenges—competing successfully means responding quickly to customers' needs and working with them to develop the best possible product," says Dimick. "When all of the people involved in a project come together and work closely to meet everyday challenges, we all benefit. We wanted to bring all the players in early in the process and keep them together, with the ultimate goal of a better product with a quicker response time."

To reach this goal, management focused on structural changes in the physical plant of the mill. They conceptualized a technical center that would be centrally located in the manufacturing area. This center would house all manufacturing and technical departments. The result, it



Charlie Miller, Governor Angus King, and Mike Luciano (right), human resources manager at Otis, inspect the laboratory at the new facility.

was hoped, would be better communications, a smoother flow of technology, and the development of new and better products.

A VISION BECOMES A REALITY

It was not an easy sell! The tech center was an expensive project, and the results far from certain. "If we had allowed people to vote on this concept initially, I believe it would have been voted down," says Dimick.

But Dimick championed the tech center, presenting it to every level of personnel at Otis. He chose as a designer-builder of the center Steve Perry, who had experience designing laboratories for the paper industry, including the Chemical Engineering Department at the University of Maine in Orono.

While Perry began work on preliminary designs, Dimick shepherded the project from the mill floor to the parent company in Europe. The process of designing and justifying the project took almost a year. Finally, Perry received the go-ahead in January 1994.

THE DESIGNER-BUILDER'S PERSPECTIVE

The first step for Perry was to gain a better understanding of the culture at Otis and of how the groups interacted with each other. He spent weeks interviewing the staff at Otis—from hourly employees to managers and top-level executives—attempting to understand their goals.

The Otis facility was uniquely suited to this kind of design, according to Perry. The real estate for the proposed technical center was located in the middle of the mill, in a site occupied by an abandoned bleach plant. "It would have been cheaper to build this facility on a nearby hill," says Perry, "but that would not have accomplished the goal."

There were, of course, several challenges, not the least of which was designing a facility in the middle of a work-



Dean Ouellette, president of Fireman and Oilers Local 247, cuts the ribbon at the opening of the Hugh J. Chisholm Innovation Center. Looking on are (L to R) Otis President Charlie Miller; Governor Angus King of Maine; Duane Lake, former president of UPIU Local 11; and Bruce Dimick, technical director at Otis.

ing paper mill. The technical center had to be quiet enough for people to work and communicate. Sound-absorbing materials were used in all cubicle walls, in the ceiling, and in the outside walls. Lighting and air handling were also critical elements to the ultimate success of the facility. The amount of space available for this project, approximately 5000 ft², left little room for underutilized real estate.

THE DESIGN

The design revolves around an "open concept." All departments—including research and development, process engineering, quality control, the ISO 9002 function, and manufacturing—are located within easy reach of each other. The product-development lab and coating-prep process-control lab are at one side of the facility, with the conference room and library at the other end. Most of the people work in the middle area between these locations. Each person has a cubicle equipped with a computer, filing space, bookcases, individual lighting, and a fully adjustable office chair. The modular design of the cubicles makes the office setup adaptable to change. All computers are on a common network with e-mail links to all of the businesses within Rexam (Otis Specialty Papers' parent company).

The layout is based on a series of overlapping spheres to accommodate "the way people orbit and move," according to Perry. Cubicles (there is only one office with walls) are arranged in clusters, grouping people who need to work together on a daily basis. However, the

groupings are arranged so that people's "orbits" overlap with those in other departments.

While the center does have a conference room, the ideal is to allow co-workers the space they need to meet informally, on an as-needed basis. Toward this end, there are two common areas equipped with tables, chairs, and computer terminals. "It's easy to call quick, impromptu meetings without the usual notices," explains Perry. This encourages communications that otherwise might never take place. These common areas are also available for use by visiting sales and marketing employees, customers, and suppliers. This contributes to better communications among sales, marketing, technical, and manufacturing groups. Customers and suppliers have a place to work comfortably, drawing them into the process. Moreover, suppliers have access to the laboratory, where they can work with Otis product-development people to refine new products.

The facility also includes a small kitchen. This allows people to "break bread," always an effective way to get people together.

MOVING IN

Construction began the first week of December 1994. Perry, using one of the spare offices, spent the following six months on-site, living with the construction crew and watching their vision take shape. People began to set up shop in mid-March 1995.

The grand opening of the Hugh J. Chisholm Innovation Center took place on June 16, 1995. Maine's governor, Angus King, attended the dedication and gave a well-received speech on the importance of investing in Maine's future as exemplified by this new technical center. Employees from the mill, local union representatives, and citizens from the surrounding communities came to the dedication.

MEASURING SUCCESS

While quantitative results are difficult to measure, Dimick has no doubts that the new center has dramatically increased Otis's ability to get new products to market in a timely basis. The introduction of several new grades in the first half of 1996 alone is testament to that. But there's more.

"There is no doubt that the atmosphere of cooperation encouraged by the center has made it possible to produce more paper, more efficiently. The environment

encourages new ideas, even risk-taking. People interact, with each person bringing something new to the table," says Dimick. "We have recently received compliments from two of our largest customers in the pressure-sensitive industry. They remarked on how quickly our organization can respond to their needs. We have this ability because of our new central facility and the spirit of cooperation that it has fostered."

It may be hard to accept that a physical location can make such a dramatic difference, but Perry notes that the "open concept" has been proven time and time again. At Otis, he says, it is clear that people are working cooperatively and more efficiently than before the opening of the center. "There have always been barriers between the techies and the product guys," says Perry. With the elimination of physical barriers, however, the psychological barriers have given way. **TJ**

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