



AIRSIDE / APPLIED / CONTROLS / SERVICE / SPECIAL SOLUTION / TOTAL SYSTEM / UNITARY

## Case Study – Uniroyal Chemical

EDUCATION / HEALTH CARE / LODGING / MANUFACTURING / OFFICE BUILDING / RETAIL / SPECIAL



### Strategic Partnership Approach Solves Building Problems and Cuts Operating Costs

#### Project Objectives

Industry leader Uniroyal Chemical needed to upgrade its Technical Sales and Service Center. Outdated cooling equipment, air distribution and controls were compromising the quality of critical testing operations. Precision controls and HVAC performance monitoring were needed to ensure consistent temperature and humidity levels in sensitive laboratory areas. In addition, the building was periodically unable to operate when the compressed air system failed, shutting down support systems. Uniroyal was looking for an expert partner to collaborate with on infrastructure improvements and cost saving opportunities.

#### Solution

Carrier's Commercial Service, through its Strategic Partnerships Group, provided the systems expertise and team approach Uniroyal was seeking. Uniroyal management and facilities experts, and the Carrier project team jointly developed a total solution, looking at overall building operations, and proposing improvements that would quickly pay for themselves with efficiency and reliability gains. Uniroyal netted \$229,000 in annual energy and operational cost savings, along with state-of-the-art controls, real-time performance tracking and 24-hour remote monitoring. In addition, Carrier designed a closed loop water process system for scientists conducting sensitive weatherometer testing.

Carrier Improvements

Annual Savings:  
\$229,000



*The Carrier Strategic Partnerships Group helped Uniroyal develop a total building solution that substantially reduced operating costs.*



## Case Study – Uniroyal Chemical *continued*

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*“The project was exceptionally well done. A number of suppliers drop the ball between the sale and the implementation. You spend lots of time with the development staff and then never see them again once the job goes to a project manager. Carrier had a project manager and their engineering team stayed involved – that provided excellent continuity.”*

Fred Sells,  
director of operations,  
finance and project  
management,  
Uniroyal Chemical

### Project Synopsis

Aging building systems at Uniroyal Chemical's Naugatuck, CT, Technical Sales and Service Center were not providing the precisely controlled environment needed for the facility's sensitive functions. Inadequate equipment and controls were causing heat and humidity fluctuations that not only made occupants uncomfortable, but compromised the quality of Uniroyal's critical testing program. An unreliable compressed air system, used for building support systems, periodically failed, causing the entire building to be shut down.

Managers turned to Carrier for a partnership approach, a total building systems solution, and expert guidance to create a state-of-the-art facility commensurate with their position as an industry-leading chemical manufacturer.

“Uniroyal facilities personnel were doing an admirable job, getting the best performance possible from equipment that was past its useful life,” said Ward Strosser, manager, Carrier Strategic Partnerships Group. “But upgrades were clearly needed. Their director of finance agreed it was time to take a holistic view of the building. Our strategic partnership team helped Uniroyal identify infrastructure upgrades that would go hand in hand with operational savings.”

The project resulted in improvements that cut annual operating costs by an impressive \$229,000 – by saving energy and gaining other operational efficiencies. Two new screw chillers, state-of-the-art air distribution and sophisticated Carrier controls precisely and reliably regulated temperature and humidity. The Carrier Comfort Network® (CCN) with ComfortWORKS® allowed real-time tracking of system performance, as well as round-the-clock remote monitoring that linked the building to Carrier's National Response Center. A back-up compressed air system provided assurance that support systems would continue to function and the building remain operational.

In addition, the Carrier team designed a closed loop water process system used for the weatherometers that are an essential part of Uniroyal's testing program. Electrical upgrades, all-new piping and variable speed drives (VFDs) on the ventilating fans all contributed to operational efficiency gains and cost savings.

“This project was a true collaboration, a partnership that transcended the traditional supplier-customer relationship and stripped away typical owner-vendor attitudes,” said Adam Mihulka, Carrier Strategic Partnerships Group. Strosser concurs. “From the first conversation to the final item on the ‘punch list,’ there was never a break in communication.”

### Project Summary

**Location:** Naugatuck, CT

**Building Age:** 40 years

**Project Type:** Building/energy retrofit

**Building Type/Size:** Concrete block and brick; two stories; 80,000 sq. ft.

**Total Cooling (tons):** 280

**Building Usage:**

Research and development testing labs; offices

**Objectives:** Precise climate control; recoup investment with operational cost savings; performance monitoring

**Major Decision Drivers:**

Investment payback; total system solution; partnership

**Design Considerations:**

Lab environment required tight control of humidity, temperature and pressurization; seasonal flexibility/year-round cooling; real-time monitoring

**HVAC Equipment:** Two model 30HXC screw chillers; eight model 39T air handlers; CCN with ComfortWORKS; VFDs on ventilating fans; water side economizer

**Unique Features:** Financial approach and total building solution beyond traditional HVAC; closed loop water process system; back-up compressed air; electrical upgrades

**Project Cost Range:** \$1 million to \$5 million

**Installation Date:** March, 2000

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