

Construction Management Team Delivers Fast Track Project at the University of Rochester

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Stephen Bills
Project Executive, Health Care
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Background

The University of Rochester in New York, with a student population of more than 7,000, strikes a balance between academic teaching and medical research. The University has developed a notable reputation for medical research, with the Strong Hospital and Medical School producing some significant discoveries. Much of this is credited to the institution's proactive search for research talent. Timely provision of laboratory facilities for researchers and adapting to their changing needs is an ongoing challenge. Recently, a new research team joined the staff at Rochester and a “state of the art, modern laboratory was needed to accommodate them”, according to Mr. Larry Decker, HVAC/R Systems Supervisor at the University.

A decision was made to renovate two wings of the existing medical research facility into modern laboratory space.

The Challenge

The main challenge was a critical completion schedule to perform the renovation design and construction of this 36,000 square foot space on a fast track schedule while keeping within the budget.

The completion schedule was critical - the project had to be designed, space demolished and new laboratories built in just eight months. Complicating the work was the fact that the space to be renovated was in the lower levels of an existing, seven floor facility. This space had to be completely gutted and the mechanical and electrical



University of Rochester Medical Research Laboratory Renovation

infrastructure located on the penthouse mechanical room needed a complete overhaul. In addition, occupants had to be relocated during the project.

The laboratory facility was a very complex mechanical undertaking. The user's operating and safety requirements included the addition of fume hoods, biosafety cabinets and they needed to address the ventilation requirements for laboratories. In addition, the ceiling height restrictions were limited to 11' 2" deck to deck. This left only about 16" of room for the ductwork and other mechanical and electrical installation work.

The Solution

The University team, led by Project Manager Mike Roszyk, decided to use LeChase Construction Services as they had the expertise in the design build process and had successfully completed other projects at the University. They were also capable of fast track execution. In fact while cost was very important, the timing was critical.

The team was assembled and the process started. The personnel relocation was completed in March 1997 and demolition began while the design progressed. Affiliated Engineering of Madison, Wisconsin did the mechanical and electrical design and LeChase contracted out and managed the various trades needed to execute the work.

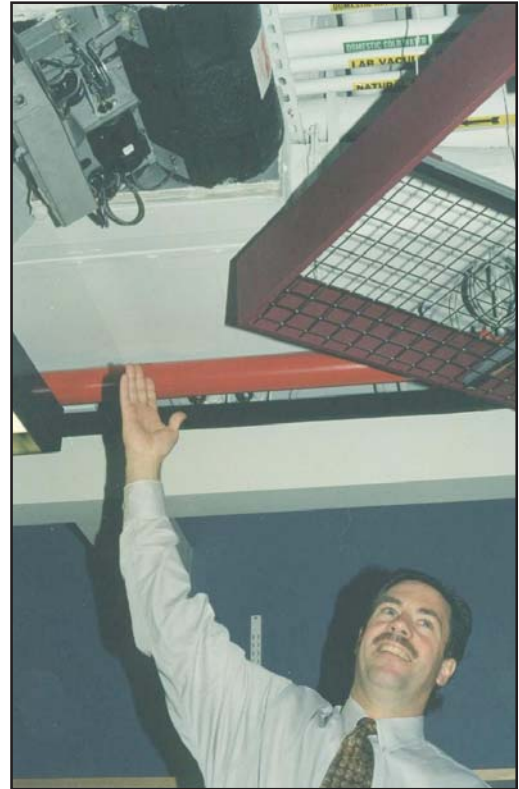
The mechanical system changes involved the conversion of the existing constant volume systems, with five air handlers to 120,000 CFM of variable air volume. This meant rebuilding all the air handling units including new fans, variable speed drives, cooling coils and other changes. Consideration of the system effects was a big factor to ensure the systems would work as intended.

Phoenix Controls' local representative, R.L Kistler became involved early in the project through discussions regarding the complicated laboratory ventilation system. The team needed a system that was proven and could be installed in a very tight ceiling space where straight ductwork was virtually impossible. The University's past experience with the Phoenix Controls laboratory ventilation control system was positive. Since the Phoenix system is insensitive to airflow inlet and exit conditions this would not affect proper operation. Other suppliers were considered, but eliminated because all required long, straight duct runs to operate effectively.

According to Larry, "There were critical parts of the project which could not be compromised ...the product was proven that it could be installed in a tight ceiling space without ductwork restrictions. Good local support was also important especially considering the time frame."

Mr. Stephen Bills of LeChase Construction said, "The Phoenix system is extremely forgiving, it would be a miracle if we could make it all fit and perform to our requirements and we had a level of comfort that the Phoenix system would work."

For device level control, constant volume air valves were installed on fume hoods and biosafety cabinets. Room level pressurization is achieved using variable volume tracking supply and exhaust air valves. Operating data, including alarm conditions at the fume hoods, is monitored through the central station. The laboratory controls on this project are integrated with a Landis & Staefa building automation system.



Larry Decker, University of Rochester indicating one of the very tight installation spaces for the Phoenix venturi valve.

The Result

The construction management process, preplanning and co-ordination paid off and the project was completed on time and on budget. The research team was able to move into the facility on July 1, 1997 as planned and everyone on the team breathed a collective sigh of relief. Based on the success with this project LeChase Construction was selected to build the newest medical research addition to the University. The Institute of Biomedical Sciences will provide an additional 225,000 square feet of research space on the medical center campus.