



Price Fan Coil Sets New Sound Standard For Audiology Department At Children's Hospital Boston at Waltham Boston, Massachusetts

Project Summary

Project Type: Retrofit

Location: Audiologists Office at Waltham Campus

Year Completed: 2011

Price Products Used: Custom Fan Coil with Integrated Silencer

Acoustical Consultant: Lawrence Copley

Price Representative: Buckley Associates

Almost 3 out of every 1,000 children born in the U.S. have some kind of hearing impairment. The Audiology department at Children's Hospital Boston at Waltham is instrumental in providing the gift of hearing to many of these children, through detailed assessment and the application of hearing aids. A quiet environment is essential in order for an audiologist to accurately assess patients' needs and progress.

After several years dealing with high noise levels emanating from a fan coil unit located above his office, the head of Audiology at Children's challenged his facilities team to fix the problem. The issue had become increasingly pronounced as consultations in the space became more frequent, and a dramatic improvement in performance and noise reduction was required.

The Director of Hospital Engineering for Children's Hospital Boston at Waltham set an aggressive noise reduction goal, which was to achieve close to NC-30 for the space. The path to a solution would require close collaboration, product innovation and thorough performance testing. An acoustical consultant, Lawrence Copley, represented the hospital's interests, engaging Price Industries and local Representative Buckley Associates to deliver a solution.

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Head Of Audiology Department Demands Silence

Because hearing aids can be more sensitive than the human ear, background noise in the examination room can interfere with the Audiologists ability to assess the patients' needs and progress. In the office of the Head of Audiology at Children's Hospital Boston at Waltham campus, the room fan coil unit was positioned directly above the consultation area. The consultation process requires very low background noise, and the industry standard fan coil unit in place was not performing to the standard desired. Several months of adjustments to the unit, ventilation and duct work did not net a significant improvement.

At the beginning of the project, Lawrence Copley, the acoustical consultant representing the hospital recognized how challenging this project would be: "Good luck – but if anyone can do it, Price can."

At the beginning of the project, the acoustical consultant measured NC-51 at 365 cfm in the space. Acoustically lined duct was being used with the existing unit. The diffuser was located directly above the Doctor's head when seated at his desk, making opportunities for sound attenuation extremely limited. The significant space restrictions would make NC-30 a challenging goal. A replacement unit would need to be accommodated in a space no larger than 4 ceiling tiles. Further adding to the



Performance of the unit was verified in the NAVLAP accredited acoustics laboratory at Price Research Center North.

acoustic challenge was the requirement that no exposed fiberglass liner was allowed on the project.

Price's expertise in delivering custom solutions and their in-house laboratory testing capabilities presented them as an obvious candidate for delivering a possible solution.

Price Custom Fan Coil Sets New Noise Control Standard

A custom designed solution from Price contributed to a significant noise reduction in the space. The Price unit achieved an estimated 15 dB noise reduction at the original 365 cfm and with only a 20% reduction in air flow to 290 cfm, the target NC 30 performance level was achieved. Jim Bove, the Director of Hospital Engineering, knew a sound reduction resulting in change from NC-51 to NC-30 was an aggressive target but was extremely satisfied with both the outcome, and the path taken to the solution - "We set a very high expectation for the project, and all of the people involved were incredibly cooperative and delivered a solution that met our goals."

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