CASE STUDY

NEW YORK SCHOOL DISTRICT SETS NEW STANDARD WITH ROBOTIC FLOOR CLEANER

Churchville-Chili Central School District near Rochester, New York

BACKGROUND

Many schools have stressed the importance of STEM topics like robotics. But in one K-12 school near Rochester, New York, robotics has been elevated from theoretical to reality. To help students build interest and skills in science, technology and engineering, the Churchville-Chili Central School District has a noteworthy robotics program that incorporates FIRST® Robotics Concepts into classroom learning.

In 2019, enthusiasm for robotics spilled over to the operations and maintenance side of the district that tested two self-driving robotic lawn mowers on the high school's grassy courtyards to increase productivity and efficiency and free up time for more hands-on work. The drive toward robotics continued inside the schools as the building and grounds team explored autonomous floor scrubbers to clean the school's floors.

CHALLENGE

Churchville-Chili Central School District has approximately 4,000 public school students and 900 staff learning and working throughout six K-12 buildings. Three of the six schools in the Churchville-Chili Central School District are connected, spanning nearly a half-mile of contiguous hallway. The Assistant Director of Buildings and Grounds, Jim Ryan, oversees a staff of 27 who clean the hallway and classroom floors every night to ensure they are sanitary and safe for the start of the next school day.

To accomplish their nightly cleaning mission, they had two 28-inch ride-on floor cleaning machines. Manning the floor cleaning machines was repetitive and time-consuming — taking time away from other more detailed work such as cleaning high-touch areas like bathrooms, countertops and door handles, as well as tidying classrooms.

Since full-time staff can be difficult to find, the building and grounds department routinely relied on substitute cleaners to provide additional cleaning capacity. But as subs tend to come and go, the time required to train each temporary worker provided low return on investment.

SOLUTION

Ryan had attended a few trade shows to learn about new solutions that could make floor cleaning faster and easier for his time-strapped cleaning crew. He learned about the new Tennant T7AMR robotic floor scrubber powered by BrainOS® advanced vision-based artificial intelligence (AI) system.

Tennant's flagship autonomous scrubber, the T7AMR is designed to work safely and efficiently alongside employees while they attend to other tasks. The robotic floor scrubber requires minimal training and has easy-to-understand controls, which helps operators get up to speed quickly.

"We chose Tennant's robotic machine because they have been a well-known brand name in the market for years," said Ryan. "It's also very simple to use and train on."

A local distributor for Tennant offered to let Ryan use the T7AMR on a trial basis before fully committing to robotic floor cleaning. Seeing success in using robotics to tend to the outside of the school, Ryan was hopeful that autonomous cleaning could be incorporated into his team's daily indoor routine.

It didn't take long for the benefits to be clear. After programming routes, the T7AMR made passes up and down the hallways on its own after initial set-up by Ryan. It effectively cleaned dirty floors, just like they'd experienced with their manual ride-on machines. If the robotic floor cleaner came across a person or obstacle in its path, it tried to navigate around the obstacle before stopping. In addition, the simple controls eliminated the need for in-depth training — so any cleaning staff, permanent or temporary, were able to run the machine after a quick demonstration.

After seeing how the T7AMR robotic scrubber could alleviate time-consuming, repetitive tasks and help improve productivity, the school district purchased the machine. The cleaning crew still uses the ride-on machines in some instances, but the robotic scrubber is carrying a substantial part of the floor cleaning load at Churchville-Chili Central School District's connected middle school and high school buildings.

"Robotics doesn't replace people, but it's a good complement to help our cleaners focus on doing more detailed work that has to be done by a person," said Ryan. "It saves a lot of man hours by not having to ride on the scrubber."

RESULTS

Since implementing the Tennant T7AMR robotic floor scrubber, Ryan says his department saves hours of repetitive labor per week. The robotic scrubber can typically make two passes up and down the length of the long hallway before it needs to be refilled. During the course of one night's cleaning, the crew typically fills the robotic scrubber four times.

As an innovator in robotic technology for the Rochester area, Churchville-Chili Central School District continues to set the pace for other schools. Students interested in robotics are motivated by seeing these technologies in action inside and outside their buildings. In turn, grounds keeping and floor cleaning has become faster, more productive and efficient — making the workplace a more rewarding environment.

"Very few places in Rochester are using self-driving robots yet like these," said Ryan. "Our district is ahead of the curve."