THE WORLD LEADER IN CLEAN AIR SOLUTIONS

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CASE STUDY

PROJECT LOCATION:
Auburn, Washington

SECTOR:
Woodworking & Metalworking

EQUIPMENT DESCRIPTION:
5RC80 OptiFlo® Cartridge Collector (Welding Smoke) & ArrestAll® AR4-15 (Woodworking)

Project Summary

Starting in 2012, Green River Community College and the State of Washington initiated a plan to build a new, state of the art community college focused on training skilled metalworking welders and new woodworking professionals. Air Associates LLC, the local AAF factory representative consulted with the mechanical design team during the early planning stages to select the proper system, assuring code compliance and determining the equipment sizing. Design considerations for the woodworking classroom included the requirement to comply with NFPA664 (The Standard for the Prevention of Fires and Explosions in Wood Processing and Woodworking Facilities), a collection system that did not require compressed air usage, and could meet a sound limitation of 65 dBA. Of critical importance for the welding classroom was the need to reduce Metal Fabrication Hazardous Air Pollutants like manganese and hexavalent chromium, listed in the EPA regulations for nine metal fabrication and finishing source categories (40 CFR Part63 Subpart XXXXXX (6X) http://www3.epa.gov/airtoxics/6x/6xpg.html.

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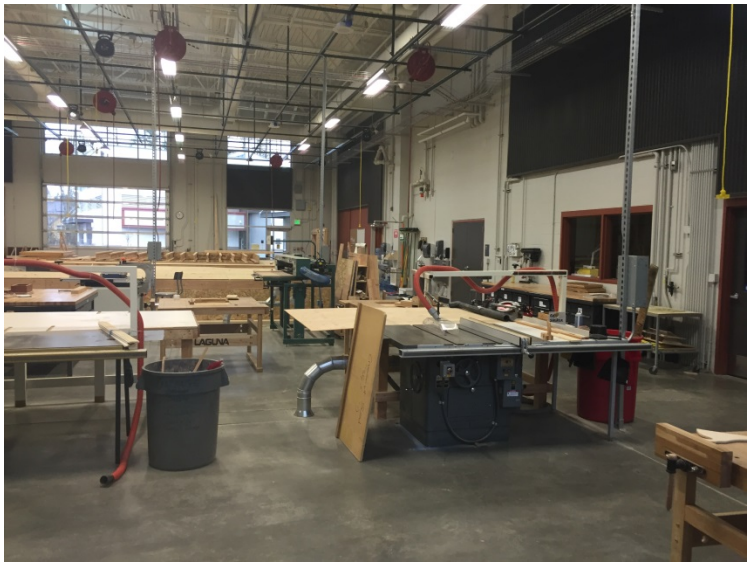
RF
REDFiltration™
Reliable Efficient Durable™

ArrestAll AR 4-15 filtering wood dust



View of woodworking classroom

View of welding classroom

OptiFlo 5RC80 filtering Weld Fume

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Outcome

Woodworking Classroom – with AAF's ArrestAll shaker collector and integral after filter, the industrial fan never contacts dust laden air, meeting the NFPA 664 guidelines. Consequently, if the primary filters fail, the secondary safety filters capture bypassed particulate. This **keeps students safe** while also preventing combustible dust from contacting the fan. AAF's AR4-15 came complete with factory installed photohelic filter gauge to monitor pressure drop across the safety filter that is able to shut off the dust collector if normal dust free safety filters load with dust. Secondly, AAF's integral Varicel® after filter systems are **95% efficient on 0.3 micron** particles, and meet the 99.99% efficiency on 10 micron requirement as specified in NFPA 664. Integral spark detection and spray nozzles in the ductwork along with high speed abort gates add additional layers of protection to prevent any deflagration from occurring. Utilizing a 90 degree sound trap on the return air also reduces noise below **65 dBA**, meeting Washington State's noise requirements.

Metalworking Classroom – with AAF's Optiflo cartridge collector utilizing REDClean® media, **return air is 99.99+%** efficient on 0.5 micron (**MERV15**). AAF's REDClean media's low pressure drop (typically below 0.5" on initial startup) filters and variable frequency drive control system were also key factors in the selection process and allows gradual fan ramp-up and adjustment to assure optimal capture and conveying velocity, acoustics and low energy consumption.

Art Project composed of welded spoons by students

For further information about AAF dust collection capabilities, contact your local AAF Representative.

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