



Title: Mechanical Engineer

Education: Bachelor of Science ➤ Mechanical Engineering ➤ University of Nevada, Reno

Licenses: Professional Engineer, Nevada: #029646

Experience & Qualifications: Cruz has experience in HVAC, Plumbing, and Geothermal Exchange design, building energy modeling, and AutoCAD and Revit modeling.

CRUZ HAS OVER FIVE YEARS' EXPERIENCE IN HVAC, PLUMBING, AND GEOTHERMAL DESIGN, AND BUILDING ENERGY MODELING.

As a mechanical engineer, Cruz investigates and performs calculations necessary for mechanical and plumbing design tasks such as duct sizing, equipment selection, pipe sizing, and plumbing fixture selection. Mr. Kerver also uses energy analysis software to determine efficient systems suitable for buildings analyzed. He is also responsible for compiling the energy modeling results into reports to relay and make suggestions for the analyzed building based upon the results.

Cruz's education includes classes in the thermal sciences including thermodynamics, heat transfer, and fluid dynamics.

PROJECTS:

WESTERN NEVADA COLLEGE,
FALLEN PIÑON BUILDING HVAC
UPGRADES

WASHOE COUNTY SCHOOL
DISTRICT
O'BRIEN MIDDLE SCHOOL

CARSON CITY AIRPORT
SNOW REMOVAL EQUIPMENT
BUILDING

Cruz was the project manager for a heating, ventilation, and air conditioning upgrade for Piñon Building at Fallon Western Nevada College campus. This 7,600 square foot building consisted of removing the five existing old and antiquated gas/electric roof top HVAC units (RTUs), rezoning the building to better serve the existing spaces, using energy modeling software to calculate the heating loads within each zone, and installing seven new RTUs, selected using the results from the energy modeling software, to serve the new zones. Ainsworth Associates Mechanical Engineers was the prime consultant on this project, so Cruz also managed the coordination between the owner, the contractor, the sub-consultants.

Cruz was part of the design team for a replacement middle school located in Stead, Nevada. This 180,000 square foot building included general learning classrooms, various laboratories, and multiple support/collaboration spaces. The design also included a full warming kitchen, a 10,000 square foot gymnasium, and culinary and art elective classrooms. The mechanical system consisted of four 6-pipe water-to-water heat pumps that circulate heating hot water and chilled water to various fan coils as well as seven variable air volume systems with seven custom air handlers. The heat pumps accept/reject heat from/to a ground loop bore field with 140 holes at 420 feet deep. The building opened in the fall of 2022.

Cruz was the project manager for a snow removal equipment building at the Carson City Airport. The mechanical design for this 3,200 square foot building included a gas fired radiant heater sized to heat the vehicle storage space, a mini-split cassette sized to heat and cool an office space, and a wall mounted electric heater paired with a ceiling exhaust fan both sized to heat and ventilate a restroom space. The plumbing design consisted of domestic water, gas, and waste/vent systems. Designing these systems required sizing a point of use domestic water heater to serve the restroom and utility sink and routing and sizing the associated piping.