

Siddharth Premkumar

P.E., HFDP, HBDP, LEED Green Associate

ASHRAE Puget Sound Chapter Past President (Jul. 2024- Jun. 2025), Research Promotions Chair (Jul. 2025-Jun. 2026)

Address: Bothell, WA 98011

Mobile: 315-439-7122

email: premkumarsiddharth@gmail.com

Professional Summary

An analytical and results-oriented engineer with 15 years of experience in the construction industry with a drive to lead and be part of a collaborative team that aims to develop healthier and sustainable building systems.

Work Experience

Arup May 2022-Present

1191 2nd Avenue, Suite 400, Seattle, WA 98101

Senior Mechanical Engineer

- Led a team of 10 engineers designing all aspects of the mechanical systems serving a new hospital building in Sunnyside, OR from concept to permit under an accelerated delivery schedule.
- Collaborated across a multidisciplinary team of architects, contractors, and engineers on the development of a new 15-story hospital building in the San Francisco Bay Area. Led the design efforts for displacement ventilation system, lab design, isolation exhaust duct requirements, fan selections, and riser locations, louver sizing, and locations, etc.
- Engineered mechanical ventilation system for an upgrade at a flagship observation tower in Seattle.
- Engineered and re-designed the mechanical system for a downtown central public market facility under challenging budget, time and space constraints.
- Developed schematic design concept for the mechanical systems for a performing arts theatre in Olympia, WA.
- Led the mechanical engineering design effort to develop a design concept and narrative after careful due diligence around feasibility for a new research and development facility for a global footwear manufacturing company in Boston, MA.

DLR Group Mar. 2020-Apr. 2022

51 University St Ste 600, Seattle, WA 98101

Mechanical Engineer

- Collaborated across disciplines to develop construction documents for a district-wide RTU and PTAC replacement (885 RTUs and 425 PTACs) project with MERV-13 filters and controls update across multiple school campuses in California. Quality of work on this project enabled winning (4) more projects with similar scope in the California region.
- Designed complete mechanical and plumbing system for a horizontal-slinky ground loop heat pump hot water system for a net-zero energy youth building in Chehalis, WA.
- Designed plumbing systems for a social media company campus building including a commercial kitchen in Redmond, WA. Project achieved LEED Gold Certification.
- Designed plumbing systems for a K-12 school addition in Keizer, OR.

Gilbert Mechanical Contractors Sept. 2014-Mar. 2020

5251 W 74th Street, Edina, MN 55439

Project Engineer

- Performed building load calculations and energy modeling for various types of healthcare facilities (MOBs, ASC, pathology labs, MRI/ X-ray, CT scan suites), offices, manufacturing, and service facilities.

- Experience with sizing and selection of air-side components including rooftop equipment, fans, fan-powered and variable air volume units, etc.
- Designed water-side equipment for hydronic systems and sized and selected pumps and appurtenances.
- Designed and selected equipment for plumbing systems including sanitary systems, domestic water, medical gas systems and sterilizing equipment systems.
- Developed designs from schematics to construction documents to meet or exceed various codes as required.
- Developed spreadsheets for calculating duct static pressure loss, airflow requirements for ambulatory surgery suites, humidifier selections, exhaust-intake separation distances, pipe friction loss calculations.
- Determined duct and pipe routing with sizing, fittings, insulation, etc. and coordinated 3D models.
- Performed site visits and worked with field superintendents to adapt designs to field conditions.
- Validated system selections for compliance with ASHRAE Standard 90.1 or IECC using COMcheck™.
- Prepared commissioning documents and compiled commissioning report as required.
- Experience with application of LEED concepts and documentation process.
- Compiled material, labor and anticipated project requirements for potential projects in future.

CAD Technology Center (CTC)

Jan. 2011 - Aug. 2014

8101 34th Ave S #300, Bloomington, MN 55425

Applications Engineer

- Trained various customers with diverse backgrounds in the MEP industry in the use of Autodesk® Revit, AutoCAD® MEP, Autodesk® Navisworks, etc. considering customer pain-points to address specific requirements. Training formats included project-based training, content creation and phased project and software implementations.
- Provided technical support on various Autodesk software applications related to the AEC industry. Resolved unique support issues and developed best practices and workarounds to address challenging issues.

Target Corporation

Dec. 2010 - Dec. 2011

1000 Nicollet Mall, Minneapolis, MN 55403

Consultant (from CTC)-Refrigeration

- Collaborated in a team of 5 engineers to extract various temperatures and dew points for 3 test stores and used regression analysis to develop equations to predict zone behavior for different conditions. Developed strategy to minimize overall (refrigeration and air conditioning) energy consumption using these equations.
- Developed 3D BIM model for distribution center using Autodesk Revit which included equipment modeling, layout, P&ID development, and clash detection.

CAD Technology Center

Oct. 2010 – Dec. 2010

8101 34th Ave S #300, Bloomington, MN 55425

Applications Engineer

- Used a simple 9 room single story building model to compare heating and cooling load calculation techniques and results from 3 software applications including Autodesk® Revit, Autodesk® Ecotect Analysis and Trane® Trace 700.

Codes

Familiarity with industry-standard codes listed below:

IECC, ASHRAE Standard 90.1, 62.1, 55 and 170, FGI, Title 24, WA State Codes, Minnesota B3, IBC, Life Safety Code, NFPA, IPC, UPC, WA State Codes, IMC

Publications & Certifications

- **Data Science Specialization from John Hopkins University on Coursera** Jul. 2018 – Jul. 2019
Completed a 10 course specialization that covered various aspects of working with data that include cleaning data, creating predictive models and building apps to present the data.
- **Using Autodesk® CFD and Autodesk® Revit for optimum airflow design** Nov. 2013
Presented a talk to over 100 attendees at Autodesk® University 2013 explaining a workflow to leverage CFD analysis to better understand occupant comfort as defined in ASHRAE Standard 55.
- **Autodesk® Inventor and Autodesk® Revit – Getting the best of both worlds** Nov. 2013
Presented a talk at Autodesk® University 2013 demonstrating a workflow to bridge the gap between manufacturers for MEP components using Autodesk® Inventor and building designers and engineers using Autodesk® Revit for building system design.
- **Autodesk® CFD for Data Centers** Nov. 2012
Presented a class based on ASHRAE publication on case studies for high density data centers at Autodesk® University 2012 and Minnesota University 2013 to compare actual measured results with CFD models for nonraised access floor and raised access floor designs for data centers.

Education

Master of Science in Mechanical and Aerospace Engineering (Syracuse University) Aug. 2008 – May 2010

Bachelor of Science in Mechanical Engineering (Mumbai University) Aug. 2004 – May 2008

Engineering Tools and Software Experience

Trane® Trace 700, IES VE, Autodesk® Revit, AutoCAD® MEP, Autodesk® Navisworks, AutoCAD® P&ID, AutoCAD® Plant 3D, Autodesk® CFD, Autodesk® Inventor, quotesoft, R, Python, Mural