TONY KRIEL, PE, LEED® AP BD+C, LEED® AP O+M

Education

B.S., Mechanical Engineering, University of Wisconsin - Madison, 2007

Professional Licenses

Professional Engineer (PE) – Wisconsin

USGBC LEED® Accredited Professional (LEED AP BD+C and LEED AP O+M)

Professional Affiliations

American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE)

Professional Experience

Mr. Kriel is SCS Engineers' National Expert on Facility Energy Management. He has 15+ years of consulting experience as a mechanical engineer, specializing in Cx, RCx, ASHRAE Level I-III energy audits, and other GHG/carbon reduction-related services. Tony has managed multiple large (>million square foot) projects and has worked with industrial, commercial, military, federal, state, municipal, and solid waste clients.

Cx - Commissioning

Implemented and managed the commissioning (Cx) process for a variety of buildings. Performed both fundamental and enhanced Cx services as outlined in the U. S. Green Building Council's Leadership in Energy and Environmental Design (LEED) program. Cx activities included assistance in developing and reviewing the owner's project requirements and basis of design documents. Additional Cx activities include reviewing design development, construction documents, and submittals; developing construction checklists; administering system performance tests; evaluating owner training; developing building systems manuals; and conducting operation and warranty site visits.

- VA Medical Center, Madison, WI; 1,400,000 SF
- Lovell FHCC, North Chicago, IL; 16,000 SF
- VA Medical Center, Iron Mountain, MI; 30,000 SF & 6,000 SF

RCx - Retro-Commissioning

Performed retro-commission (RCx) services for a major mid-western university's medical education and research facility. Worked with service personnel, performed trend analysis, identified energy conservation opportunities, implemented sample opportunities, prepared energy and cost savings figures, and estimated implementation costs. Developed and reviewed findings with service personnel and implemented facility-wide energy conservation measures.

- Arraj Federal Courthouse, Denver, CO; 327,000 SF
- Denver Federal Center, Denver, CO; 730,000 SF
- VA Medical Center, Madison, WI; 1,400,000 SF
- VA Medical Center, Tomah, WI; 200,000 SF
- Peoria Air National Guard Base, IL; 50,000 SF



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• Wallace F Bennett Federal Office Building, Salt Lake City, UT; 386,000 SF

ASHRAE Energy Audits

Acted as lead energy auditor for hospitals and manufacturing facilities. Obtained/reviewed previous facility energy data, evaluated on-site energy equipment and issues (e.g., HVAC equipment, building controls, lighting, boilers, chillers, air compressors, building envelope, etc.) in order to identify potential energy conservation measures (ECMs). Obtained site-specific information in order to perform energy and cost saving calculations. Calculated energy and water conservation measures.

- WI DHS Mendota Campus, Madison, WI; 1,300,000 SF
- VA Medical Center, Iron Mountain, MI; 320,000 SF
- Aircraft Manufacturer, Mobile, AL; 1,400,000 SF

Energy Modeling

Generated numerous building energy models for LEED under the Energy and Atmosphere Credit #1: Optimize Energy Performance. Worked extensively with Wisconsin's Focus on Energy New Construction Program to perform energy modeling at over 50 facilities (greater than 3.2 million square feet) with a unique approach to evaluate, choose, use, calibrate, and interpret the results of energy modeling software when applied to buildings and process systems. Proved competency in modeling new and existing buildings and systems with their full range of physics. Projects have ranged from traditional offices to hospitals, schools, higher educational facilities, and manufacturing facilities.

Geothermal Services

Conducted feasibility studies for various types of facilities. Determined energy and cost savings, and estimated implementation cost, simple payback, and life cycle payback. Performed cost savings calculations using computer-generated energy models. Used RSMeans data and contractor feedback to estimate implementation costs.

Prepared detailed design plans and specifications for exterior geothermal field system installations including site layout, field parameters, ground conditions, and other geothermal-related detail sheets. Provided geothermal construction administration services. Worked closely with the Wisconsin Department of Natural Resources and the local municipal utility representative to ensure a successful geothermal installation. Ensured that the system was installed per the contract documents.

GHG/Carbon Reduction Consulting Services

Involved in the design or consultation of greenhouse gas (GHG)/carbon reduction consulting services. Services include conducting materiality assessment, quantifying GHG emissions, identifying emission sources, and developing an inventory management plan; developing strategies for emissions reduction and sustainability improvement; complying with regulatory requirements related to GHG reporting; and enhancing corporate sustainability and brand reputation.

- Phoenix Color Corp, Hagerstown, MD; 300,000 SF
- Brady Corporation, Milwaukee, WI; 2,900,000 SF

Midwest, Multiple Sites. Assisted with a nationwide reporting process for the over 200 landfills required to report under the Federal GHG Reporting Program (GHGRP). Used an online collaborative workspace to enable coordination of deliverables and supporting documentation for each landfill.

Environmental & Solid Waste Assessments

Beloit, Wisconsin, Alliant Energy, Solar at Rock River Ash Landfill. Acted as Engineer for a utility scale solar system installed on top of the ash landfill final cover system. Project solar feasibility assessment included conducting a solar site evaluation, conducting a utility interconnection assessment, conducting a site engineering assessment, evaluating ground mounted solar system types, evaluating solar conceptual design, and conducting economic analysis of the proposed solar system.

City of Janesville, Wisconsin, Solar on Landfill Assessment. Evaluated utility scale solar systems at multiple City-owned sites. Calculated potential greenhouse gas (GHG) reduction savings. Solar feasibility assessment included conducting a solar site evaluation, a utility interconnection assessment, and a site engineering assessment; and evaluating ground mounted solar system types, solar conceptual design, and an economic analysis of the proposed solar system.

Madison, Wisconsin, Dane County Department of Waste & Renewables, Final Cover Assessments – Rodefeld Landfill. Helped evaluate several final cover system alternatives to determine which are cost-effective, technically feasible, anticipated to be feasible from a regulatory perspective, met the long-range plans for the landfill, and provided environmental and sustainable benefits. Exposed geomembrane with PV laminate, ballasted PV system, evapotranspirative (ET), delayed, composite clay/geomembrane, and composite geosynthetic clay liner (CGL) were evaluated. Conducted solar PV feasibility assessments. Efforts included conducting a solar site evaluation, a utility interconnection assessment, a site engineering assessment, a conceptual design, and an economic analysis of the proposed PV system.

Madison, Wisconsin, Rodefeld Landfill. Assisted with the design and construction of a C&D recycling facility. Project included coordination and design of a heat recovery system from landfill gas generators to fully supplement heating of the facility. Project involved preparation of preliminary design documents, detailed design documents, construction documents, specifications, and cost estimates. Assisted with construction administration and oversight.

Horicon, Wisconsin, Glacier Ridge Landfill. Assisted with landfill gas improvement projects. Design work included new primary and backup blower installation, new blower building construction, new flare installation, connection to landfill gas to energy facility, gas well installation, header improvements, gas well pump compressed air lines and forcemains construction, condensate sump and knockout installation, condensate drip leg construction, electrical upgrades, instrumentation and controls updates, and related site improvements. Project included preparation of construction drawings, specifications, project manual documents, contract administration, construction oversight, preparation of a construction documentation report, and general engineering office support during construction.

Midwest, Multiple Sites, H₂S Evaluation. Generated models to predict hydrogen sulfide (H₂S) generation resulting from acceptance of construction and demolition (C&D) fines or other potential sulfur compound streams in a typical municipal solid waste landfill. The model provides valuable information for C&D processors, landfill operators, and regulators. Worked with landfill operators to better evaluate allowable quantities of C&D fines so that they may weigh the potential impacts of increased landfill gas (LFG) management against the economic benefits of accepting the fines.

Midwest, Multiple Sites, SPCC/SWPPP. Conducted environmental regulatory audits which focus on compliance with air and water quality rules and regulations as they apply to permitting; recordkeeping; reporting and monitoring requirements; and implementation of Spill Prevention, Control, and Countermeasure (SPCC) plans and Stormwater Pollution Prevention Plan (SWPPPs) in

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accordance with the respective regulatory requirements applicable to the site. Developed tools to simplify emissions calculations and monitoring. Assisted clients with submittal of air emissions inventories, compliance certifications, and monitoring reports.

Appleton, Wisconsin, Outagamie County, Solar on Landfill Assessment. Evaluated utility scale solar systems at multiple County-owned sites. Calculated potential greenhouse gas (GHG) reduction savings. Solar feasibility assessment included conducting a solar site evaluation, a utility interconnection assessment, a site engineering assessment; and evaluating ground mounted Solar system types, solar conceptual design, and economic analysis of the proposed solar system.

Shafter, California, Shafter-Wasco Recycling & Sanitary Landfill, Evaluation of Construction and Operational Energy Use. Evaluated energy use for the construction and operation of a composting operation and self-haul recycling operation at the Kirby Canyon Recycling & Disposal Facility. Calculated energy use for all project phases and components, including transportation-related energy, during construction and operation. Identified potentially significant energy/environmental impacts, with particular emphasis on avoiding or reducing inefficient, wasteful, and unnecessary consumption of energy. Identified mitigation measures, including energy conservation measures, to reduce wasteful, inefficient, and unnecessary consumption of energy.

Publications and Presentations

"Why Advancing Sustainability is Important," Presented to Great Lakes Graphics Association, November 19, 2024.

"Sustainability & Energy Management 101", SCS SustainU, Madison, WI, June 2023.

"Solar on Landfills," Presented to Wisconsin Integrated Resource Management Conference, Green Bay, WI, February 2022.

"Save Money by Eliminating Air Leaks," Graphics Journal (Volume 3, Issue 6, July 2018), pages 22-23.

"H₂S is Bad News – Prevention & Treatment," Presented to Wisconsin Integrated Resource Management Conference, Elk Hart Lake, WI, March 2018.

"Final Cover State of the Practice," Presented to Wisconsin Integrated Resource Management Conference, Elkhart Lake, WI, March 2017.

"Saving Energy Makes Dollar\$ and Sense," Graphics Journal (Volume 1, Issue 10, November 2016), pages 12-13.

"Applying Commercial Energy Conservation Measures at Wastewater Treatment Plants," Presented to Central States Water Environment Association, Minneapolis, MN, 2014.

"Energy Modeling Quality Assurance," Presented to American Society of Heating, Refrigerating, and Air Conditioning Engineers, Milwaukee, WI, 2012.

"Commercial Geothermal Installs - an Engineer's Perspectives," Presented to Wisconsin Geothermal Association, Wisconsin Rapids, WI, 2011.

"Municipal Sustainability Strategies," Presentation given on behalf of Town & Country Resource Conservation Conference to Municipal Employees, Pewaukee, WI, 2010.

"Energy Systems in Buildings," Presentation for Half Moon Seminars, Pewaukee, WI, 2009.