

CASE STUDY: LEED HEALTHCARE-SPECIFIC STANDARDS

Project Description: Pre-Occupancy Indoor Air Quality Testing - GOLD Certification for Green Buildings

Scope of Services: AET was contracted by a Children's Hospital to conduct LEED air quality testing within their newly constructed 5 story healthcare facility prior to occupancy. Testing was conducted to comply with the maximum target levels for indoor air quality established by the US Green Building Council's (USGBC) Leadership in Energy and Environmental Design (LEED) Program. Target levels for healthcare facilities (such as medical centers, hospitals, etc.) are about 60% below schools, residential and commercial buildings.

LEED standards are used during the design, construction and operation of facilities to promote a health, comfortable work place for the workers involved in construction and renovations and building occupants during building operations (including patients). Good indoor air quality can also help promote patient healing, shortened hospital stays, and fewer return hospital visits while maintaining efficient energy and other resource use.

AET's Sampling Protocol Included:

1. Testing was conducted in 21 HVAC zones on all 5 occupied levels of the building including the 5th floor shell space which was still under construction. All tests were area samples at breathing zone height (4-5' above floor level) with sampling times ranging from 4-24 hours.
2. Given the number of tests required, AET developed modified air quality testing protocols to improve sampling efficiencies, turnaround times and costs while providing sampling results/reports to the client faster.

PRE-OCCUPANCY AIR QUALITY STANDARDS FOR HEALTHCARE FACILITIES

LEED CONTAMINANT	LEED MAXIMUM CONCENTRATION	SAMPLING PROTOCOL	SOURCES
Formaldehyde	20 ppb	24 hour passive monitoring	Pressed wood products, carpeting, fabric
Particulate (PM10)	20 ug/m ³	Direct reading instrumentation with data logger	Fabrics, carpeting, construction dust/debris
TVOCs	200 ug/m ³	Integrated sampling tube laboratory analysis	Adhesives, paints, carpeting, furnishings
4-Phenylcyclohexene (4-PCH)	3 ug/m ³	Integrated sampling tube laboratory analysis	Carpeting or fabrics with styrene-butadiene rubber (SBR) latex backing
Carbon Monoxide	9 ppm and no >2 ppm above outdoors	Direct reading instrumentation with data logger	Combustion sources

CONCLUSION: LEED compliance was achieved for all environmental parameters in all areas for carbon monoxide, 4-PCH and Formaldehyde. All on-site work was completed in 4 days and a report conveyed to the client within 5 days including 24 hour turnaround time for the carbon monoxide and PM10 results.

When you need professional industrial hygiene advice email Alan Sutherland, CIH, CHMM at a.sutherland@aetinc.biz or call 610-891-0114 and reference AET Project #R479. We provide nationwide services; phone consultations are free. Check out the full range of environmental contracting/consulting services on our website www.aetinc.biz.

Accredited Environmental Technologies, Inc.