



The Solutions Network

Rochester, New York

Sustainability Beyond Energy: Indoor Environmental Quality

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Sustainable Indoor Environmental Quality

- ❖ Synergy, not trade-off
 - Many improvements to indoor environmental quality promote energy efficiency
- ❖ Integration with site and materials
 - Site and materials decisions will impact indoor environmental quality
- ❖ Buildings are for people
 - Failure to deliver an acceptable indoor environment undermines all sustainability and asset management goals



2004 LEED Certification Levels

- ❖ LEED Certified 26-32 Points
- ❖ Silver Level 33-38 Points
- ❖ Gold Level 39-51 Points
- ❖ Platinum Level 52+

- ❖ (69 Points Possible)



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2004 LEED Point Distribution

	Possible Points	Percent
Energy & Atmosphere	17	25%
Indoor Environmental Quality	15	22%
Sustainable Site	14	20%
Materials & Resources	13	19%
Water Efficiency	5	7%
Innovation & Design Process	<u>5</u>	<u>7%</u>
Total	69	100%



Indoor Environmental Quality

Credit	Task	Points
Prereq. 1	Minimum IAQ Performance	Req.
Prereq. 2	Environmental Tobacco Smoke Control	Req.
1.0	Carbon Dioxide Monitoring	1
2.0	Increase Ventilation Effectiveness	1
3.0	Construction IAQ Management Plan	1-2
4.0	Low-Emitting Materials	1-4
5.0	Indoor Chemical & Pollutant Source Control	1
6.0	Controllability of Systems	1-2
7.0	Thermal Comfort	1-2
8.0	Daylight & Views	<u>1-2</u>
	Total	15



Two “Hot Issues” in the Indoor Environment

- ❖ Mold, moisture, and water intrusion
- ❖ VOC emissions, odor and chemical exposure risks



Mold, Moisture, Water Intrusion

Prereq. 1	Minimum IAQ Performance	Req.
3.0	Construction IAQ Management Plan	1-2
7.0	Thermal Comfort	1-2
	Total	4

- ❖ Hit this “hot issue” and gain four LEED points – more than 25% of IEQ credits
- ❖ Links to energy reduction
 - Envelope integrity
 - Humidity management
- ❖ Links to materials selection

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2004 VOC Emissions

Prereq. 1	Minimum IAQ Performance	Req.
2.0	Increase Ventilation Effectiveness	1
4.0	Low-Emitting Materials	1-4
5.0	Indoor Chemical & Pollutant Source Control	<u>1</u>
	Total	6

- ❖ Hit this “hot issue” and gain six LEED points – 40% of IEQ credits
- ❖ Links to energy reduction
 - Ventilation minimization potential
- ❖ Links to material selection

The logo features a stylized sunburst in shades of yellow and orange on the left. To its right, the year '2004' is written in a blue, sans-serif font. Below '2004', the word 'Energy' is written in a bold, italicized, orange font with a white outline. To the right of the logo, the word 'Challenges' is written in a large, blue, sans-serif font. A thin orange horizontal line is positioned below the logo and the word 'Challenges'.

2004 Energy Challenges

- ❖ Conventional cooling may be limited in humidity control
 - Some efficiency measures may limit moisture removal
- ❖ Low-emitting materials may have low recycled content

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2004 Opportunities

- ❖ New moisture control technologies bring energy recovery benefits
- ❖ Resolving water and moisture issues preserves integrity of envelope efficiency
- ❖ New materials often combine mold resistance and low emissions



Sustainable Indoor Environmental Quality

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- ❖ Integration with site and materials
- ❖ Buildings are for people

